

RNAlib-2.1.9h

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Chapter 1

ViennaRNA Package core - RNAlib

A Library for folding and comparing RNA secondary structures

Date

1994-2012

Authors

Ivo Hofacker, Peter Stadler, Ronny Lorenz and many more

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1.1 Introduction

The core of the Vienna RNA Package ([7], [5]) is formed by a collection of routines for the prediction and comparison of RNA secondary structures. These routines can be accessed through stand-alone programs, such as RNAfold, RNAdistance etc., which should be sufficient for most users. For those who wish to develop their own programs we provide a library which can be linked to your own code.

This document describes the library and will be primarily useful to programmers. However, it also contains details about the implementation that may be of interest to advanced users. The stand-alone programs are described in separate man pages. The latest version of the package including source code and html versions of the documentation can be found at

<http://www.tbi.univie.ac.at/~ivo/RNA/>

Chapter 2

Parsing and Comparing - Functions to Manipulate Structures

Representations of Secondary Structures

The standard representation of a secondary structure is the *bracket notation*, where matching brackets symbolize base pairs and unpaired bases are shown as dots. Alternatively, one may use two types of node labels, 'P' for paired and 'U' for unpaired; a dot is then replaced by '(U)', and each closed bracket is assigned an additional identifier 'P'. We call this the expanded notation. In [3] a condensed representation of the secondary structure is proposed, the so-called homeomorphically irreducible tree (HIT) representation. Here a stack is represented as a single pair of matching brackets labeled 'P' and weighted by the number of base pairs. Correspondingly, a contiguous strain of unpaired bases is shown as one pair of matching brackets labeled 'U' and weighted by its length. Generally any string consisting of matching brackets and identifiers is equivalent to a plane tree with as many different types of nodes as there are identifiers.

Bruce Shapiro proposed a coarse grained representation [11], which, does not retain the full information of the secondary structure. He represents the different structure elements by single matching brackets and labels them as 'H' (hairpin loop), 'I' (interior loop), 'B' (bulge), 'M' (multi-loop), and 'S' (stack). We extend his alphabet by an extra letter for external elements 'E'. Again these identifiers may be followed by a weight corresponding to the number of unpaired bases or base pairs in the structure element. All tree representations (except for the dot-bracket form) can be encapsulated into a virtual root (labeled 'R'), see the example below.

The following example illustrates the different linear tree representations used by the package. All lines show the same secondary structure.

```
a) .((( (. ((. . . )) . . ((. . . )) . . )) .
   (U) ( ( ( ( (U) (U) ( ( ( (U) (U) (U) P) P) P) (U) (U) ( ( (U) (U) P) P) P) (U) P) P) (U)
b) (U) ( ( (U2) ( (U3) P3) (U2) ( (U2) P2) P2) (U) P2) (U)
c) ( ( (H) (H) M) B)
   ( ( ( ( (H) S) ( (H) S) M) S) B) S)
   ( ( ( ( ( (H) S) ( (H) S) M) S) B) S) E)
d) ( ( ( ( ( ( (H3) S3) ( (H2) S2) M4) S2) B1) S2) E2) R)
```

Above: [Tree](#) representations of secondary structures. a) Full structure: the first line shows the more convenient condensed notation which is used by our programs; the second line shows the rather clumsy expanded notation for completeness, b) HIT structure, c) different versions of coarse grained structures: the second line is exactly Shapiro's representation, the first line is obtained by neglecting the stems. Since each loop is closed by a unique stem, these two lines are equivalent. The third line is an extension taking into account also the external digits. d) weighted coarse structure, this time including the virtual root.

For the output of aligned structures from string editing, different representations are needed, where we put the label on both sides. The above examples for tree representations would then look like:

```
a) (UU) (P (P (P (P (UU) (UU) (P (P (P (UU) (UU) (UU) P) P) P) (UU) (UU) (P (P (UU) (U) . .
b) (UU) (P2 (P2 (U2U2) (P2 (U3U3) P3) (U2U2) (P2 (U2U2) P2) P2) (UU) P2) (UU)
c) (B (M (HH) (HH) M) B)
   (S (B (S (M (S (HH) S) (S (HH) S) M) S) B) S)
   (E (S (B (S (M (S (HH) S) (S (HH) S) M) S) B) S) E)
d) (R (E2 (S2 (B1 (S2 (M4 (S3 (H3) S3) ( (H2) S2) M4) S2) B1) S2) E2) R)
```

Aligned structures additionally contain the gap character '_'.

Parsing and Coarse Graining of Structures

Several functions are provided for parsing structures and converting to different representations.

```
char *expand_Full(const char *structure)
```

Convert the full structure from bracket notation to the expanded notation including root.

```
char *b2HIT (const char *structure)
```

Converts the full structure from bracket notation to the HIT notation including root.

```
char *b2C (const char *structure)
```

Converts the full structure from bracket notation to the a coarse grained notation using the 'H' 'B' 'I' 'M' and 'R' identifiers.

```
char *b2Shapiro (const char *structure)
```

Converts the full structure from bracket notation to the *weighted* coarse grained notation using the 'H' 'B' 'I' 'M' 'S' 'E' and 'R' identifiers.

```
char *expand_Shapiro (const char *coarse);
```

Inserts missing 'S' identifiers in unweighted coarse grained structures as obtained from [b2C\(\)](#).

```
char *add_root (const char *structure)
```

Adds a root to an un-rooted tree in any except bracket notation.

```
char *unexpand_Full (const char *ffull)
```

Restores the bracket notation from an expanded full or HIT tree, that is any tree using only identifiers 'U' 'P' and 'R'.

```
char *unweight (const char *wcoarse)
```

Strip weights from any weighted tree.

```
void unexpand_aligned_F (char *align[2])
```

Converts two aligned structures in expanded notation.

```
void parse_structure (const char *structure)
```

Collects a statistic of structure elements of the full structure in bracket notation.

See also

[RNAstruct.h](#) for prototypes and more detailed description

Distance Measures

A simple measure of dissimilarity between secondary structures of equal length is the base pair distance, given by the number of pairs present in only one of the two structures being compared. I.e. the number of base pairs that have to be opened or closed to transform one structure into the other. It is therefore particularly useful for comparing structures on the same sequence. It is implemented by

```
int bp_distance(const char *str1,
               const char *str2)
```

For other cases a distance measure that allows for gaps is preferable. We can define distances between structures as edit distances between trees or their string representations. In the case of string distances this is the same as "sequence alignment". Given a set of edit operations and edit costs, the edit distance is given by the minimum sum of the costs along an edit path converting one object into the other. Edit distances like these always define a metric. The edit operations used by us are insertion, deletion and replacement of nodes. String editing does not pay attention to the matching of brackets, while in tree editing matching brackets represent a single node of the tree. [Tree](#) editing is therefore usually preferable, although somewhat slower. String edit distances are always smaller or equal to tree edit distances.

The different level of detail in the structure representations defined above naturally leads to different measures of distance. For full structures we use a cost of 1 for deletion or insertion of an unpaired base and 2 for a base pair. Replacing an unpaired base for a pair incurs a cost of 1.

Two cost matrices are provided for coarse grained structures:

```

/* Null, H, B, I, M, S, E */
{ 0, 2, 2, 2, 2, 1, 1}, /* Null replaced */
{ 2, 0, 2, 2, 2, INF, INF}, /* H replaced */
{ 2, 2, 0, 1, 2, INF, INF}, /* B replaced */
{ 2, 2, 1, 0, 2, INF, INF}, /* I replaced */
{ 2, 2, 2, 2, 0, INF, INF}, /* M replaced */
{ 1, INF, INF, INF, INF, 0, INF}, /* S replaced */
{ 1, INF, INF, INF, INF, INF, 0}, /* E replaced */

```

```

/* Null, H, B, I, M, S, E */
{ 0, 100, 5, 5, 75, 5, 5}, /* Null replaced */
{ 100, 0, 8, 8, 8, INF, INF}, /* H replaced */
{ 5, 8, 0, 3, 8, INF, INF}, /* B replaced */
{ 5, 8, 3, 0, 8, INF, INF}, /* I replaced */
{ 75, 8, 8, 8, 0, INF, INF}, /* M replaced */
{ 5, INF, INF, INF, INF, 0, INF}, /* S replaced */
{ 5, INF, INF, INF, INF, INF, 0}, /* E replaced */

```

The lower matrix uses the costs given in [12]. All distance functions use the following global variables:

```
int cost_matrix;
```

Specify the cost matrix to be used for distance calculations.

```
int edit_backtrack;
```

Produce an alignment of the two structures being compared by tracing the editing path giving the minimum distance.

```
char *aligned_line[4];
```

Contains the two aligned structures after a call to one of the distance functions with [edit_backtrack](#) set to 1.

See also

[utils.h](#), [dist_vars.h](#) and [stringdist.h](#) for more details

Functions for Tree Edit Distances

```
Tree *make_tree (char *struc)
```

Constructs a [Tree](#) (essentially the postorder list) of the structure 'struc', for use in [tree_edit_distance\(\)](#).

```
float tree_edit_distance (Tree *T1,
                        Tree *T2)
```

Calculates the edit distance of the two trees.

```
void free_tree(Tree *t)
```

Free the memory allocated for [Tree](#) t.

See also

[dist_vars.h](#) and [treedist.h](#) for prototypes and more detailed descriptions

Functions for String Alignment

```
swString *Make_swString (char *string)
```

Convert a structure into a format suitable for [string_edit_distance\(\)](#).

```
float string_edit_distance (swString *T1,
                          swString *T2)
```

Calculate the string edit distance of T1 and T2.

See also

[dist_vars.h](#) and [stringdist.h](#) for prototypes and more detailed descriptions

Functions for Comparison of Base Pair Probabilities

For comparison of base pair probability matrices, the matrices are first condensed into probability profiles which are then compared by alignment.

```
float *Make_bp_profile_bppm ( double *bppm,  
                             int length)
```

condense pair probability matrix into a vector containing probabilities for unpaired, upstream paired and downstream paired.

```
float profile_edit_distance ( const float *T1,  
                             const float *T2)
```

Align the 2 probability profiles T1, T2

.

See also

ProfileDist.h for prototypes and more details of the above functions

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Chapter 3

Utilities - Odds and Ends

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 - [Producing \(colored\) dot plots for base pair probabilities](#)
 - [Producing \(colored\) alignments](#)
 - [RNA sequence related utilities](#)
 - [RNA secondary structure related utilities](#)
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-

3.1 Producing secondary structure graphs

```
int PS_rna_plot ( char *string,
                  char *structure,
                  char *file)
```

Produce a secondary structure graph in PostScript and write it to 'filename'.

```
int PS_rna_plot_a (
    char *string,
    char *structure,
    char *file,
    char *pre,
    char *post)
```

Produce a secondary structure graph in PostScript including additional annotation macros and write it to 'filename'.

```
int gmlRNA (char *string,
            char *structure,
            char *ssfile,
            char option)
```

Produce a secondary structure graph in Graph Meta Language (gml) and write it to a file.

```
int ssv_rna_plot (char *string,
                  char *structure,
                  char *ssfile)
```

Produce a secondary structure graph in SStructView format.

```
int svg_rna_plot (char *string,
                  char *structure,
                  char *ssfile)
```

Produce a secondary structure plot in SVG format and write it to a file.

```
int xrna_plot ( char *string,
                 char *structure,
                 char *ssfile)
```

Produce a secondary structure plot for further editing in XRNA.

```
int rna_plot_type
```

Switch for changing the secondary structure layout algorithm.

Two low-level functions provide direct access to the graph layouting algorithms:

```
int simple_xy_coordinates ( short *pair_table,
                           float *X,
                           float *Y)
```

Calculate nucleotide coordinates for secondary structure plot the *Simple way*

```
int naview_xy_coordinates ( short *pair_table,
                           float *X,
                           float *Y)
```

See also

[PS_dot.h](#) and [naview.h](#) for more detailed descriptions.

3.2 Producing (colored) dot plots for base pair probabilities

```
int PS_color_dot_plot ( char *string,
                       cpair *pi,
                       char *filename)

int PS_color_dot_plot_turn (char *seq,
                           cpair *pi,
                           char *filename,
                           int winSize)

int PS_dot_plot_list (char *seq,
                     char *filename,
                     plist *pl,
                     plist *mf,
                     char *comment)
```

Produce a postscript dot-plot from two pair lists.

```
int PS_dot_plot_turn (char *seq,
                     struct plist *pl,
                     char *filename,
                     int winSize)
```

See also

[PS_dot.h](#) for more detailed descriptions.

3.3 Producing (colored) alignments

```
int PS_color_aln (
    const char *structure,
    const char *filename,
    const char *seqs[],
    const char *names[])
```

3.4 RNA sequence related utilities

Several functions provide useful applications to RNA sequences

```
char *random_string (int l,
                    const char symbols[])
```

Create a random string using characters from a specified symbol set.

```
int    hamming ( const char *s1,
                  const char *s2)
```

Calculate hamming distance between two sequences.

```
void str_DNA2RNA(char *sequence);
```

Convert a DNA input sequence to RNA alphabet.

```
void str_uppercase(char *sequence);
```

Convert an input sequence to uppercase.

3.5 RNA secondary structure related utilities

```
char *pack_structure (const char *struc)
```

Pack secondary structure, 5:1 compression using base 3 encoding.

```
char *unpack_structure (const char *packed)
```

Unpack secondary structure previously packed with [pack_structure\(\)](#)

```
short *make_pair_table (const char *structure)
```

Create a pair table of a secondary structure.

```
short *copy_pair_table (const short *pt)
```

Get an exact copy of a pair table.

3.6 Miscellaneous Utilities

```
void print_tty_input_seq (void)
```

Print a line to *stdout* that asks for an input sequence.

```
void print_tty_constraint_full (void)
```

Print structure constraint characters to *stdout* (full constraint support)

```
void print_tty_constraint (unsigned int option)
```

Print structure constraint characters to *stdout*. (constraint support is specified by option parameter)

```
int    *get_iindx (unsigned int length)
```

Get an index mapper array (iindx) for accessing the energy matrices, e.g. in partition function related functions.

```
int    *get_indx (unsigned int length)
```

Get an index mapper array (indx) for accessing the energy matrices, e.g. in MFE related functions.

```
void constrain_ptypes (
    const char *constraint,
    unsigned int length,
    char *ptype,
    int *BP,
    int min_loop_size,
    unsigned int idx_type)
```

Insert constraining pair types according to constraint structure string.

```
char    *get_line(FILE *fp);
```

Read a line of arbitrary length from a stream.

```
unsigned int read_record(  
    char **header,  
    char **sequence,  
    char ***rest,  
    unsigned int options);
```

```
char *time_stamp (void)
```

Get a timestamp.

```
void warn_user (const char message[])
```

Print a warning message.

```
void nrerror (const char message[])
```

```
void init_rand (void)
```

Make random number seeds.

```
unsigned short xsubi[3];
```

Current 48 bit random number.

```
double urn (void)
```

get a random number from [0..1]

```
int int_urn (int from, int to)
```

Generates a pseudo random integer in a specified range.

```
void *space (unsigned size)
```

Allocate space safely.

```
void *xrealloc ( void *p,  
                unsigned size)
```

Reallocate space safely.

See also

[utils.h](#) for a complete overview and detailed description of the utility functions

[Next Page: Examples](#)

Chapter 4

Example - A Small Example Program

The following program exercises most commonly used functions of the library. The program folds two sequences using both the mfe and partition function algorithms and calculates the tree edit and profile distance of the resulting structures and base pairing probabilities.

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include <string.h>
#include "utils.h"
#include "fold_vars.h"
#include "fold.h"
#include "part_func.h"
#include "inverse.h"
#include "RNAstruct.h"
#include "treedist.h"
#include "stringdist.h"
#include "profiledist.h"

void main()
{
    char *seq1="CGCAGGGGAUACCCGCG", *seq2="GCGCCCAUAGGGACGC",
        *struct1,* struct2,* xstruc;
    float e1, e2, tree_dist, string_dist, profile_dist, kT;
    Tree *T1, *T2;
    swString *S1, *S2;
    float *pf1, *pf2;
    FLT_OR_DBL *bppm;
    /* fold at 30C instead of the default 37C */
    temperature = 30.;          /* must be set *before* initializing */

    /* allocate memory for structure and fold */
    struct1 = (char* ) space(sizeof(char)*(strlen(seq1)+1));
    e1 = fold(seq1, struct1);

    struct2 = (char* ) space(sizeof(char)*(strlen(seq2)+1));
    e2 = fold(seq2, struct2);

    free_arrays();          /* free arrays used in fold() */

    /* produce tree and string representations for comparison */
    xstruc = expand_Full(struct1);
    T1 = make_tree(xstruc);
    S1 = Make_swString(xstruc);
    free(xstruc);

    xstruc = expand_Full(struct2);
    T2 = make_tree(xstruc);
    S2 = Make_swString(xstruc);
    free(xstruc);

    /* calculate tree edit distance and aligned structures with gaps */
    edit_backtrack = 1;
    tree_dist = tree_edit_distance(T1, T2);
    free_tree(T1); free_tree(T2);
    unexpand_aligned_F(aligned_line);
    printf("%s\n%s  %3.2f\n", aligned_line[0], aligned_line[1], tree_dist);

    /* same thing using string edit (alignment) distance */
    string_dist = string_edit_distance(S1, S2);
    free(S1); free(S2);
    printf("%s mfe=%5.2f\n%s mfe=%5.2f dist=%3.2f\n",
        aligned_line[0], e1, aligned_line[1], e2, string_dist);

    /* for longer sequences one should also set a scaling factor for
       partition function folding, e.g: */
}
```

```

kT = (temperature+273.15)*1.98717/1000.; /* kT in kcal/mol */
pf_scale = exp(-e1/kT/strlen(seq1));

/* calculate partition function and base pair probabilities */
e1 = pf_fold(seq1, struct1);
/* get the base pair probability matrix for the previous run of pf_fold() */
bppm = export_bppm();
pf1 = Make_bp_profile_bppm(bppm, strlen(seq1));

e2 = pf_fold(seq2, struct2);
/* get the base pair probability matrix for the previous run of pf_fold() */
bppm = export_bppm();
pf2 = Make_bp_profile_bppm(bppm, strlen(seq2));

free_pf_arrays(); /* free space allocated for pf_fold() */

profile_dist = profile_edit_distance(pf1, pf2);
printf("%s free energy=%5.2f\n%s free energy=%5.2f dist=%3.2f\n",
       aligned_line[0], e1, aligned_line[1], e2, profile_dist);

free_profile(pf1); free_profile(pf2);
}

```

In a typical Unix environment you would compile this program using:

```
cc ${OPENMP_CFLAGS} -c example.c -I${hpath}
```

and link using

```
cc ${OPENMP_CFLAGS} -o example -L${lpath} -lRNA -lm
```

where `${hpath}` and `${lpath}` point to the location of the header files and library, respectively.

Note

As default, the RNAlib is compiled with build-in *OpenMP* multithreading support. Thus, when linking your own object files to the library you have to pass the compiler specific `${OPENMP_CFLAGS}` (e.g. `-fopenmp` for **gcc**) even if your code does not use openmp specific code. However, in that case the *OpenMP* flags may be omitted when compiling example.c

Chapter 5

Deprecated List

Global [base_pair](#)

Do not use this variable anymore!

Global [centroid](#) (int length, double *dist)

This function is deprecated and should not be used anymore as it is not threadsafe!

Global [energy_of_circ_struct](#) (const char *string, const char *structure)

This function is deprecated and should not be used in future programs Use [energy_of_circ_structure\(\)](#) instead!

Global [energy_of_struct](#) (const char *string, const char *structure)

This function is deprecated and should not be used in future programs! Use [energy_of_structure\(\)](#) instead!

Global [energy_of_struct_pt](#) (const char *string, short *ptable, short *s, short *s1)

This function is deprecated and should not be used in future programs! Use [energy_of_structure_pt\(\)](#) instead!

Global [expHairpinEnergy](#) (int u, int type, short si1, short sj1, const char *string)

Use [exp_E_Hairpin\(\)](#) from [loop_energies.h](#) instead

Global [expLoopEnergy](#) (int u1, int u2, int type, int type2, short si1, short sj1, short sp1, short sq1)

Use [exp_E_IntLoop\(\)](#) from [loop_energies.h](#) instead

Global [get_plist](#) (struct plist *pl, int length, double cut_off)

use [assign_plist_from_pr\(\)](#) instead!

Global [HairpinE](#) (int size, int type, int si1, int sj1, const char *string)

{This function is deprecated and will be removed soon. Use [E_Hairpin\(\)](#) instead!}

Global [iindx](#)

Do not use this variable anymore!

Global [init_co_pf_fold](#) (int length)

Global [init_pf_fold](#) (int length)

This function is obsolete and will be removed soon!

Global [initialize_cofold](#) (int length)

Global [initialize_fold](#) (int length)

{This function is deprecated and will be removed soon!}

Global [LoopEnergy](#) (int n1, int n2, int type, int type_2, int si1, int sj1, int sp1, int sq1)

{This function is deprecated and will be removed soon. Use [E_IntLoop\(\)](#) instead!}

Global [Make_bp_profile](#) (int length)

This function is deprecated and will be removed soon! See [Make_bp_profile_bppm\(\)](#) for a replacement

Global [mean_bp_dist](#) (int length)

This function is not threadsafe and should not be used anymore. Use [mean_bp_distance\(\)](#) instead!

Global [pr](#)

Do not use this variable anymore!

Global [PS_dot_plot](#) (char *string, char *file)

This function is deprecated and will be removed soon! Use [PS_dot_plot_list\(\)](#) instead!

Chapter 6

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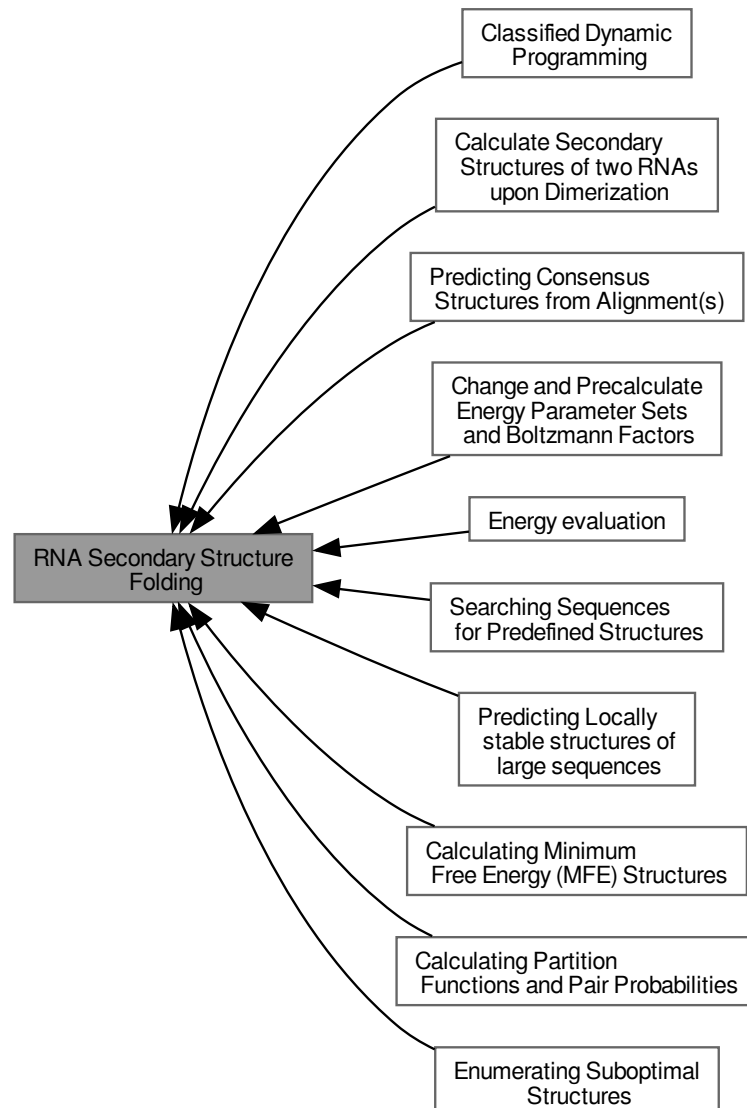
Chapter 9

Module Documentation

9.1 RNA Secondary Structure Folding

This module contains all functions related to thermodynamic folding of RNAs.

Collaboration diagram for RNA Secondary Structure Folding:



Modules

- [Calculating Minimum Free Energy \(MFE\) Structures](#)

This module contains all functions and variables related to the calculation of global minimum free energy structures for single sequences.

- [Calculating Partition Functions and Pair Probabilities](#)

This section provides information about all functions and variables related to the calculation of the partition function and base pair probabilities.

- [Enumerating Suboptimal Structures](#)

- [Calculate Secondary Structures of two RNAs upon Dimerization](#)

Predict structures formed by two molecules upon hybridization.

- [Predicting Consensus Structures from Alignment\(s\)](#)

compute various properties (consensus MFE structures, partition function, Boltzmann distributed stochastic samples, ...) for RNA sequence alignments

- [Predicting Locally stable structures of large sequences](#)
- [Change and Precalculate Energy Parameter Sets and Boltzmann Factors](#)

All relevant functions to retrieve and copy precalculated energy parameter sets as well as reading/writing the energy parameter set from/to file(s).

- [Energy evaluation](#)

This module contains all functions and variables related to energy evaluation of sequence/structure pairs.

- [Searching Sequences for Predefined Structures](#)
- [Classified Dynamic Programming](#)

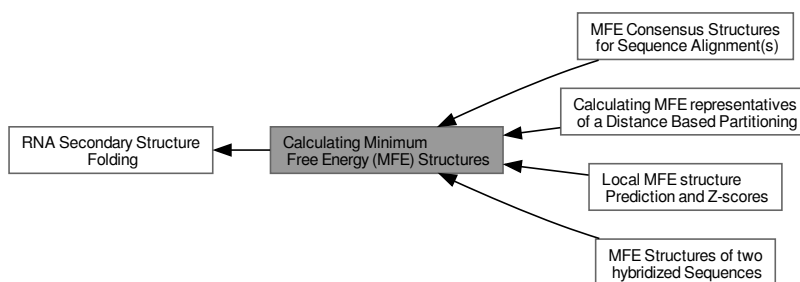
9.1.1 Detailed Description

This module contains all functions related to thermodynamic folding of RNAs.

9.1.2 Calculating Minimum Free Energy (MFE) Structures

This module contains all functions and variables related to the calculation of global minimum free energy structures for single sequences.

Collaboration diagram for Calculating Minimum Free Energy (MFE) Structures:



Modules

- [MFE Structures of two hybridized Sequences](#)
- [MFE Consensus Structures for Sequence Alignment\(s\)](#)
- [Local MFE structure Prediction and Z-scores](#)
- [Calculating MFE representatives of a Distance Based Partitioning](#)

Compute the minimum free energy (MFE) and secondary structures for a partitioning of the secondary structure space according to the base pair distance to two fixed reference structures basepair distance to two fixed reference structures.

Functions

- float [fold_par](#) (const char *sequence, char *structure, [paramT](#) *parameters, int is_constrained, int is_circular)
Compute minimum free energy and an appropriate secondary structure of an RNA sequence.
- float [fold](#) (const char *sequence, char *structure)
Compute minimum free energy and an appropriate secondary structure of an RNA sequence.
- float [circfold](#) (const char *sequence, char *structure)
Compute minimum free energy and an appropriate secondary structure of a circular RNA sequence.
- void [free_arrays](#) (void)
Free arrays for mfe folding.
- void [update_fold_params](#) (void)
Recalculate energy parameters.

9.1.2.1 Detailed Description

This module contains all functions and variables related to the calculation of global minimum free energy structures for single sequences.

This section covers all functions and variables related to the calculation of minimum free energy (MFE) structures. The library provides a fast dynamic programming minimum free energy folding algorithm as described by Zuker & Stiegler (1981).

The library provides a fast dynamic programming minimum free energy folding algorithm as described in [14]. All relevant parts that directly implement the "Zuker & Stiegler" algorithm for single sequences are described in this section.

Folding of circular RNA sequences is handled as a post-processing step of the forward recursions. See [6] for further details.

Nevertheless, the RNAlib also provides interfaces for the prediction of consensus MFE structures of sequence alignments, MFE structure for two hybridized sequences, local optimal structures and many more. For those more specialized variants of MFE folding routines, please consult the appropriate subsections (Modules) as listed above.

9.1.2.2 Function Documentation

9.1.2.2.1 fold_par()

```
float fold_par (
    const char * sequence,
    char * structure,
    paramT * parameters,
    int is_constrained,
    int is_circular )
```

Compute minimum free energy and an appropriate secondary structure of an RNA sequence.

The first parameter given, the RNA sequence, must be *uppercase* and should only contain an alphabet Σ that is understood by the RNAlib

(e.g. $\Sigma = \{A, U, C, G\}$)

The second parameter, *structure*, must always point to an allocated block of memory with a size of at least `strlen(sequence) + 1`

If the third parameter is NULL, global model detail settings are assumed for the folding recursions. Otherwise, the provided parameters are used.

The fourth parameter indicates whether a secondary structure constraint in enhanced dot-bracket notation is passed through the structure parameter or not. If so, the characters "`| x < >`" are recognized to mark bases that are paired, unpaired, paired upstream, or downstream, respectively. Matching brackets "`()`" denote base pairs, dots "`.`" are used for unconstrained bases.

To indicate that the RNA sequence is circular and thus has to be post-processed, set the last parameter to non-zero. After a successful call of `fold_par()`, a backtracked secondary structure (in dot-bracket notation) that exhibits the minimum of free energy will be written to the memory *structure* is pointing to. The function returns the minimum of free energy for any fold of the sequence given.

Note

OpenMP: Passing NULL to the 'parameters' argument involves access to several global model detail variables and thus is not to be considered threadsafe

See also

[fold\(\)](#), [circfold\(\)](#), [model_detailsT](#), [set_energy_model\(\)](#), [get_scaled_parameters\(\)](#)

Parameters

<i>sequence</i>	RNA sequence
<i>structure</i>	A pointer to the character array where the secondary structure in dot-bracket notation will be written to
<i>parameters</i>	A data structure containing the prescaled energy contributions and the model details. (NULL may be passed, see OpenMP notes above)
<i>is_constrained</i>	Switch to indicate that a structure constraint is passed via the structure argument (0==off)
<i>is_circular</i>	Switch to (de-)activate postprocessing steps in case RNA sequence is circular (0==off)

Returns

the minimum free energy (MFE) in kcal/mol

9.1.2.2.2 fold()

```
float fold (
    const char * sequence,
    char * structure )
```

Compute minimum free energy and an appropriate secondary structure of an RNA sequence.

This function essentially does the same thing as [fold_par\(\)](#). However, it takes its model details, i.e. [temperature](#), [dangles](#), [tetra_loop](#), [noGU](#), [no_closingGU](#), [fold_constrained](#), [noLonelyPairs](#) from the current global settings within the library

Use [fold_par\(\)](#) for a completely threadsafe variant

See also

[fold_par\(\)](#), [circfold\(\)](#)

Parameters

<i>sequence</i>	RNA sequence
<i>structure</i>	A pointer to the character array where the secondary structure in dot-bracket notation will be written to

Returns

the minimum free energy (MFE) in kcal/mol

9.1.2.2.3 circfold()

```
float circfold (
    const char * sequence,
    char * structure )
```

Compute minimum free energy and an appropriate secondary structure of a circular RNA sequence.

This function essentially does the same thing as [fold_par\(\)](#). However, it takes its model details, i.e. [temperature](#), [dangles](#), [tetra_loop](#), [noGU](#), [no_closingGU](#), [fold_constrained](#), [noLonelyPairs](#) from the current global settings within the library

Use [fold_par\(\)](#) for a completely threadsafe variant

See also

[fold_par\(\)](#), [circfold\(\)](#)

Parameters

<i>sequence</i>	RNA sequence
<i>structure</i>	A pointer to the character array where the secondary structure in dot-bracket notation will be written to

Returns

the minimum free energy (MFE) in kcal/mol

9.1.2.2.4 free_arrays()

```
void free_arrays (
    void )
```

Free arrays for mfe folding.

9.1.2.2.5 update_fold_params()

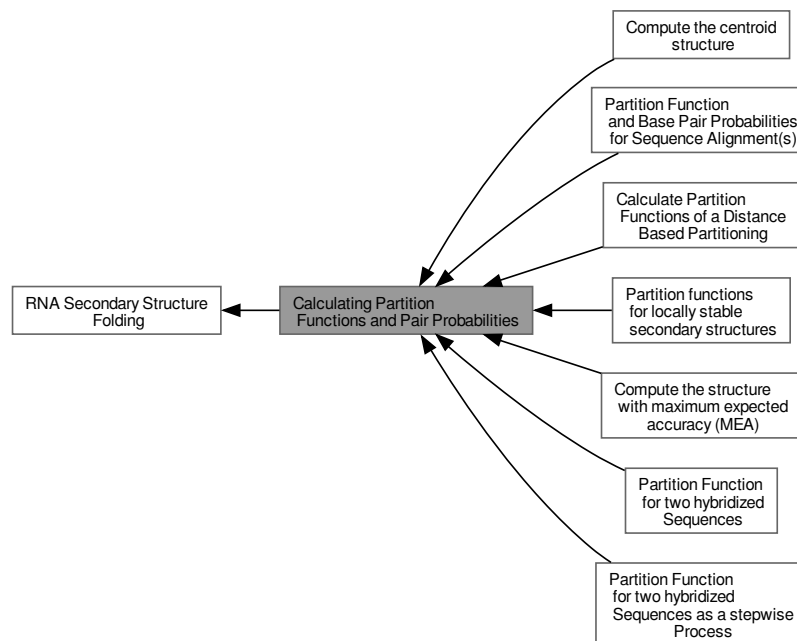
```
void update_fold_params (
    void )
```

Recalculate energy parameters.

9.1.3 Calculating Partition Functions and Pair Probabilities

This section provides information about all functions and variables related to the calculation of the partition function and base pair probabilities.

Collaboration diagram for Calculating Partition Functions and Pair Probabilities:



Modules

- [Compute the structure with maximum expected accuracy \(MEA\)](#)
- [Compute the centroid structure](#)
- [Partition Function for two hybridized Sequences](#)
- [Partition Function Cofolding.](#)
- [Partition Function for two hybridized Sequences as a stepwise Process](#)
- [Partition Function Cofolding as a stepwise process.](#)
- [Partition Function and Base Pair Probabilities for Sequence Alignment\(s\)](#)
- [Partition functions for locally stable secondary structures](#)
- [Calculate Partition Functions of a Distance Based Partitioning](#)

Compute the partition function and stochastically sample secondary structures for a partitioning of the secondary structure space according to the base pair distance to two fixed reference structures.

Files

- file [part_func.h](#)
- *Partition function of single RNA sequences.*

Functions

- float `pf_fold_par` (const char *sequence, char *structure, `pf_paramT` *parameters, int calculate_bppm, int is_constrained, int is_circular)
Compute the partition function Q for a given RNA sequence.
- float `pf_fold` (const char *sequence, char *structure)
Compute the partition function Q of an RNA sequence.
- float `pf_circ_fold` (const char *sequence, char *structure)
Compute the partition function of a circular RNA sequence.
- void `free_pf_arrays` (void)
Free arrays for the partition function recursions.
- void `update_pf_params` (int length)
Recalculate energy parameters.
- void `update_pf_params_par` (int length, `pf_paramT` *parameters)
Recalculate energy parameters.
- double * `export_bppm` (void)
Get a pointer to the base pair probability array.
- void `assign_plist_from_pr` (`plist` **pl, double *probs, int length, double cutoff)
Create a plist from a probability matrix.
- int `get_pf_arrays` (short **S_p, short **S1_p, char **ptype_p, double **qb_p, double **qm_p, double **q1k_p, double **qln_p)
Get the pointers to (almost) all relevant computation arrays used in partition function computation.
- double `mean_bp_distance` (int length)
Get the mean base pair distance of the last partition function computation.
- double `mean_bp_distance_pr` (int length, double *pr)
Get the mean base pair distance in the thermodynamic ensemble.

9.1.3.1 Detailed Description

This section provides information about all functions and variables related to the calculation of the partition function and base pair probabilities.

Instead of the minimum free energy structure the partition function of all possible structures and from that the pairing probability for every possible pair can be calculated, using a dynamic programming algorithm as described in [10].

9.1.3.2 Function Documentation

9.1.3.2.1 `pf_fold_par()`

```
float pf_fold_par (
    const char * sequence,
    char * structure,
    pf_paramT * parameters,
    int calculate_bppm,
    int is_constrained,
    int is_circular )
```

Compute the partition function Q for a given RNA sequence.

If *structure* is not a NULL pointer on input, it contains on return a string consisting of the letters ". , | { } ()" denoting bases that are essentially unpaired, weakly paired, strongly paired without preference, weakly upstream (downstream) paired, or strongly up- (down-)stream paired bases, respectively. If `fold_constrained` is not 0, the *structure* string is interpreted on input as a list of constraints for the folding. The character "x" marks bases that must be unpaired, matching brackets "()" denote base pairs, all other characters are ignored. Any pairs conflicting with the constraint will be forbidden. This is usually sufficient to ensure the constraints are honored. If the parameter `calculate_bppm` is set to 0 base pairing probabilities will not be computed (saving CPU time), otherwise after calculations took place *pr* will contain the probability that bases *i* and *j* pair.

Note

The global array `pr` is deprecated and the user who wants the calculated base pair probabilities for further computations is advised to use the function `export_bppm()`

Postcondition

After successful run the hidden folding matrices are filled with the appropriate Boltzmann factors. Depending on whether the global variable `do_backtrack` was set the base pair probabilities are already computed and may be accessed for further usage via the `export_bppm()` function. A call of `free_pf_arrays()` will free all memory allocated by this function. Successive calls will first free previously allocated memory before starting the computation.

See also

`pf_fold()`, `pf_circ_fold()`, `bppm_to_structure()`, `export_bppm()`, `get_boltzmann_factors()`, `free_pf_arrays()`

Parameters

<code>in</code>	<code>sequence</code>	The RNA sequence input
<code>in, out</code>	<code>structure</code>	A pointer to a char array where a base pair probability information can be stored in a pseudo-dot-bracket notation (may be NULL, too)
<code>in</code>	<code>parameters</code>	Data structure containing the precalculated Boltzmann factors
<code>in</code>	<code>calculate_bppm</code>	Switch to Base pair probability calculations on/off (0==off)
<code>in</code>	<code>is_constrained</code>	Switch to indicate that a structure constraint is passed via the structure argument (0==off)
<code>in</code>	<code>is_circular</code>	Switch to (de-)activate postprocessing steps in case RNA sequence is circular (0==off)

Returns

The Gibbs free energy of the ensemble ($G = -RT \cdot \log(Q)$) in kcal/mol

9.1.3.2.2 pf_fold()

```
float pf_fold (
    const char * sequence,
    char * structure )
```

Compute the partition function Q of an RNA sequence.

If `structure` is not a NULL pointer on input, it contains on return a string consisting of the letters `~ . , | { } ()` denoting bases that are essentially unpaired, weakly paired, strongly paired without preference, weakly upstream (downstream) paired, or strongly up- (down-)stream paired bases, respectively. If `fold_constrained` is not 0, the `structure` string is interpreted on input as a list of constraints for the folding. The character `"x"` marks bases that must be unpaired, matching brackets `"()"` denote base pairs, all other characters are ignored. Any pairs conflicting with the constraint will be forbidden. This is usually sufficient to ensure the constraints are honored. If `do_backtrack` has been set to 0 base pairing probabilities will not be computed (saving CPU time), otherwise `pr` will contain the probability that bases i and j pair.

Note

The global array `pr` is deprecated and the user who wants the calculated base pair probabilities for further computations is advised to use the function `export_bppm()`.

OpenMP: This function is not entirely threadsafe. While the recursions are working on their own copies of data the model details for the recursions are determined from the global settings just before entering the recursions. Consider using `pf_fold_par()` for a really threadsafe implementation.

Precondition

This function takes its model details from the global variables provided in *RNAlib*

Postcondition

After successful run the hidden folding matrices are filled with the appropriate Boltzmann factors. Depending on whether the global variable `do_backtrack` was set the base pair probabilities are already computed and may be accessed for further usage via the `export_bppm()` function. A call of `free_pf_arrays()` will free all memory allocated by this function. Successive calls will first free previously allocated memory before starting the computation.

See also

`pf_fold_par()`, `pf_circ_fold()`, `bppm_to_structure()`, `export_bppm()`

Parameters

<i>sequence</i>	The RNA sequence input
<i>structure</i>	A pointer to a char array where a base pair probability information can be stored in a pseudo-dot-bracket notation (may be NULL, too)

Returns

The Gibbs free energy of the ensemble ($G = -RT \cdot \log(Q)$) in kcal/mol

9.1.3.2.3 pf_circ_fold()

```
float pf_circ_fold (
    const char * sequence,
    char * structure )
```

Compute the partition function of a circular RNA sequence.

Note

The global array `pr` is deprecated and the user who wants the calculated base pair probabilities for further computations is advised to use the function `export_bppm()`.

OpenMP: This function is not entirely threadsafe. While the recursions are working on their own copies of data the model details for the recursions are determined from the global settings just before entering the recursions. Consider using `pf_fold_par()` for a really threadsafe implementation.

Precondition

This function takes its model details from the global variables provided in *RNAlib*

Postcondition

After successful run the hidden folding matrices are filled with the appropriate Boltzmann factors. Depending on whether the global variable `do_backtrack` was set the base pair probabilities are already computed and may be accessed for further usage via the `export_bppm()` function. A call of `free_pf_arrays()` will free all memory allocated by this function. Successive calls will first free previously allocated memory before starting the computation.

See also

`pf_fold_par()`, `pf_fold()`

Parameters

<code>in</code>	<i>sequence</i>	The RNA sequence input
<code>in, out</code>	<i>structure</i>	A pointer to a char array where a base pair probability information can be stored in a pseudo-dot-bracket notation (may be NULL, too)

Returns

The Gibbs free energy of the ensemble ($G = -RT \cdot \log(Q)$) in kcal/mol

9.1.3.2.4 free_pf_arrays()

```
void free_pf_arrays (
    void )
```

Free arrays for the partition function recursions.

Call this function if you want to free all allocated memory associated with the partition function forward recursion.

Note

Successive calls of [pf_fold\(\)](#), [pf_circ_fold\(\)](#) already check if they should free any memory from a previous run.

OpenMP notice:

This function should be called before leaving a thread in order to avoid leaking memory

Postcondition

All memory allocated by [pf_fold_par\(\)](#), [pf_fold\(\)](#) or [pf_circ_fold\(\)](#) will be free'd

See also

[pf_fold_par\(\)](#), [pf_fold\(\)](#), [pf_circ_fold\(\)](#)

9.1.3.2.5 update_pf_params()

```
void update_pf_params (
    int length )
```

Recalculate energy parameters.

Call this function to recalculate the pair matrix and energy parameters after a change in folding parameters like [temperature](#)

9.1.3.2.6 update_pf_params_par()

```
void update_pf_params_par (
    int length,
    pf_paramT * parameters )
```

Recalculate energy parameters.

9.1.3.2.7 export_bppm()

```
double * export_bppm (
    void )
```

Get a pointer to the base pair probability array.

Accessing the base pair probabilities for a pair (i,j) is achieved by

```
FLT_OR_DBL *pr = export_bppm();
pr_ij = pr[iindx[i]-j];
```

Precondition

Call [pf_fold_par\(\)](#), [pf_fold\(\)](#) or [pf_circ_fold\(\)](#) first to fill the base pair probability array

See also

[pf_fold\(\)](#), [pf_circ_fold\(\)](#), [get_iindx\(\)](#)

Returns

A pointer to the base pair probability array

9.1.3.2.8 assign_plist_from_pr()

```
void assign_plist_from_pr (
    plist ** pl,
    double * probs,
    int length,
    double cutoff )
```

Create a plist from a probability matrix.

The probability matrix given is parsed and all pair probabilities above the given threshold are used to create an entry in the plist

The end of the plist is marked by sequence positions *i* as well as *j* equal to 0. This condition should be used to stop looping over its entries

Note

This function is threadsafe

Parameters

out	<i>pl</i>	A pointer to the plist that is to be created
in	<i>probs</i>	The probability matrix used for creting the plist
in	<i>length</i>	The length of the RNA sequence
in	<i>cutoff</i>	The cutoff value

9.1.3.2.9 get_pf_arrays()

```
int get_pf_arrays (
    short ** S_p,
    short ** S1_p,
    char ** ptype_p,
    double ** qb_p,
    double ** qm_p,
    double ** qlk_p,
    double ** qln_p )
```

Get the pointers to (almost) all relavant computation arrays used in partition function computation.

Precondition

In order to assign meaningful pointers, you have to call [pf_fold_par\(\)](#) or [pf_fold\(\)](#) first!

See also

[pf_fold_par\(\)](#), [pf_fold\(\)](#), [pf_circ_fold\(\)](#)

Parameters

out	<i>S_p</i>	A pointer to the 'S' array (integer representation of nucleotides)
out	<i>S1_p</i>	A pointer to the 'S1' array (2nd integer representation of nucleotides)
out	<i>ptype</i> _{↔ _p}	A pointer to the pair type matrix

Parameters

out	<i>qb_p</i>	A pointer to the Q^B matrix
out	<i>qm_p</i>	A pointer to the Q^M matrix
out	<i>q1k_p</i>	A pointer to the 5' slice of the Q matrix ($q1k(k) = Q(1, k)$)
out	<i>qln_p</i>	A pointer to the 3' slice of the Q matrix ($qln(l) = Q(l, n)$)

Returns

Non Zero if everything went fine, 0 otherwise

9.1.3.2.10 mean_bp_distance()

```
double mean_bp_distance (
    int length )
```

Get the mean base pair distance of the last partition function computation.

Note

To ensure thread-safety, use the function [mean_bp_distance_pr\(\)](#) instead!

See also

[mean_bp_distance_pr\(\)](#)

Parameters

<i>length</i>	
---------------	--

Returns

mean base pair distance in thermodynamic ensemble

9.1.3.2.11 mean_bp_distance_pr()

```
double mean_bp_distance_pr (
    int length,
    double * pr )
```

Get the mean base pair distance in the thermodynamic ensemble.

This is a threadsafe implementation of [mean_bp_dist\(\)](#) !

$$\langle d \rangle = \sum_{a,b} p_a p_b d(S_a, S_b)$$

this can be computed from the pair probs p_{ij} as

$$\langle d \rangle = \sum_{ij} p_{ij} (1 - p_{ij})$$

Note

This function is threadsafe

Parameters

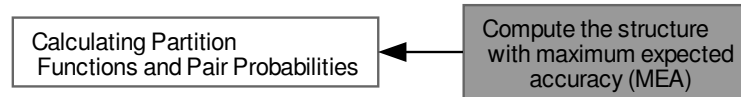
<i>length</i>	The length of the sequence
<i>pr</i>	The matrix containing the base pair probabilities

Returns

The mean pair distance of the structure ensemble

9.1.3.3 Compute the structure with maximum expected accuracy (MEA)

Collaboration diagram for Compute the structure with maximum expected accuracy (MEA):



9.1.3.4 Compute the centroid structure

Collaboration diagram for Compute the centroid structure:



Functions

- char * [get_centroid_struct_pl](#) (int length, double *dist, [plist](#) *pl)
Get the centroid structure of the ensemble.
- char * [get_centroid_struct_pr](#) (int length, double *dist, double *pr)
Get the centroid structure of the ensemble.

9.1.3.4.1 Detailed Description

9.1.3.4.2 Function Documentation

9.1.3.4.2.1 [get_centroid_struct_pl\(\)](#)

```
char * get_centroid_struct_pl (
    int length,
    double * dist,
    plist * pl )
```

Get the centroid structure of the ensemble.

This function is a threadsafe replacement for [centroid\(\)](#) with a 'plist' input

The centroid is the structure with the minimal average distance to all other structures

$$< d(S) > = \sum_{(i,j) \in S} (1 - p_{ij}) + \sum_{(i,j) \notin S} p_{ij}$$

Thus, the centroid is simply the structure containing all pairs with $p_{ij} > 0.5$ The distance of the centroid to the ensemble is written to the memory addressed by *dist*.

Parameters

in	<i>length</i>	The length of the sequence
----	---------------	----------------------------

Parameters

out	<i>dist</i>	A pointer to the distance variable where the centroid distance will be written to
in	<i>pl</i>	A pair list containing base pair probability information about the ensemble

Returns

The centroid structure of the ensemble in dot-bracket notation

9.1.3.4.2.2 `get_centroid_struct_pr()`

```
char * get_centroid_struct_pr (
    int length,
    double * dist,
    double * pr )
```

Get the centroid structure of the ensemble.

This function is a threadsafe replacement for [centroid\(\)](#) with a probability array input

The centroid is the structure with the minimal average distance to all other structures

$$\langle d(S) \rangle = \sum_{(i,j) \in S} (1 - p_{ij}) + \sum_{(i,j) \notin S} p_{ij}$$

Thus, the centroid is simply the structure containing all pairs with $p_{ij} > 0.5$ The distance of the centroid to the ensemble is written to the memory addressed by *dist*.

Parameters

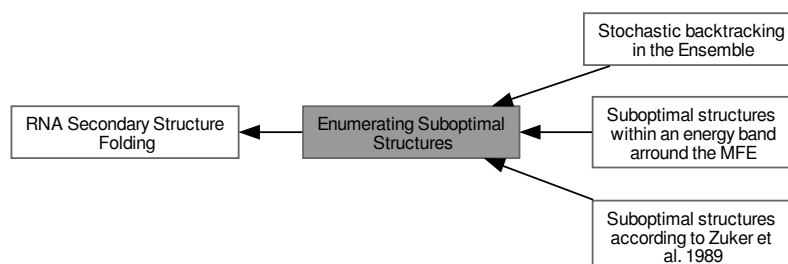
in	<i>length</i>	The length of the sequence
out	<i>dist</i>	A pointer to the distance variable where the centroid distance will be written to
in	<i>pr</i>	A upper triangular matrix containing base pair probabilities (access via iindx get_iindx())

Returns

The centroid structure of the ensemble in dot-bracket notation

9.1.4 Enumerating Suboptimal Structures

Collaboration diagram for Enumerating Suboptimal Structures:



Modules

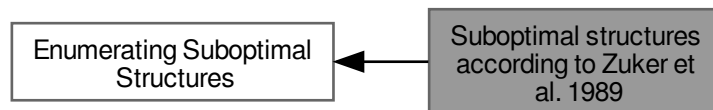
- [Suboptimal structures according to Zuker et al. 1989](#)
- [Suboptimal structures within an energy band around the MFE](#)
- [Stochastic backtracking in the Ensemble](#)

Files

- file [subopt.h](#)
RNAsubopt and density of states declarations.

9.1.4.1 Detailed Description**9.1.4.2 Suboptimal structures according to Zuker et al. 1989**

Collaboration diagram for Suboptimal structures according to Zuker et al. 1989:

**Functions**

- **SOLUTION** * [zukersubopt](#) (const char *string)
Compute Zuker type suboptimal structures.
- **SOLUTION** * [zukersubopt_par](#) (const char *string, [paramT](#) *parameters)
Compute Zuker type suboptimal structures.

9.1.4.2.1 Detailed Description**9.1.4.2.2 Function Documentation****9.1.4.2.2.1 zukersubopt()**

```
SOLUTION * zukersubopt (
    const char * string )
```

Compute Zuker type suboptimal structures.

Compute Suboptimal structures according to M. Zuker, i.e. for every possible base pair the minimum energy structure containing the resp. base pair. Returns a list of these structures and their energies.

Parameters

<i>string</i>	RNA sequence
---------------	--------------

Returns

List of zuker suboptimal structures

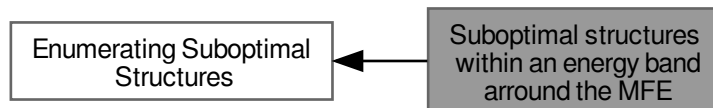
9.1.4.2.2.2 zukersubopt_par()

```
SOLUTION * zukersubopt_par (
    const char * string,
    paramT * parameters )
```

Compute Zuker type suboptimal structures.

9.1.4.3 Suboptimal structures within an energy band around the MFE

Collaboration diagram for Suboptimal structures within an energy band around the MFE:



Functions

- **SOLUTION** * `subopt` (char *seq, char *structure, int delta, FILE *fp)
Returns list of subopt structures or writes to fp.
- **SOLUTION** * `subopt_par` (char *seq, char *structure, **paramT** *parameters, int delta, int is_constrained, int is_circular, FILE *fp)
Returns list of subopt structures or writes to fp.
- **SOLUTION** * `subopt_circ` (char *seq, char *sequence, int delta, FILE *fp)
Returns list of circular subopt structures or writes to fp.

Variables

- int `subopt_sorted`
Sort output by energy.
- double `print_energy`
printing threshold for use with logML

9.1.4.3.1 Detailed Description

9.1.4.3.2 Function Documentation

9.1.4.3.2.1 subopt()

```

SOLUTION * subopt (
    char * seq,
    char * structure,
    int delta,
    FILE * fp )
  
```

Returns list of subopt structures or writes to fp.

This function produces **all** suboptimal secondary structures within 'delta' * 0.01 kcal/mol of the optimum. The results are either directly written to a 'fp' (if 'fp' is not NULL), or (fp=NULL) returned in a **SOLUTION** * list terminated by an entry where the 'structure' pointer is NULL.

Parameters

<i>seq</i>	
<i>structure</i>	
<i>delta</i>	
<i>fp</i>	

Returns

9.1.4.3.2.2 subopt_par()

```
SOLUTION * subopt_par (
    char * seq,
    char * structure,
    paramT * parameters,
    int delta,
    int is_constrained,
    int is_circular,
    FILE * fp )
```

Returns list of subopt structures or writes to fp.

9.1.4.3.2.3 subopt_circ()

```
SOLUTION * subopt_circ (
    char * seq,
    char * sequence,
    int delta,
    FILE * fp )
```

Returns list of circular subopt structures or writes to fp.

This function is similar to [subopt\(\)](#) but calculates secondary structures assuming the RNA sequence to be circular instead of linear

Parameters

<i>seq</i>	
<i>sequence</i>	
<i>delta</i>	
<i>fp</i>	

Returns

9.1.4.3.3 Variable Documentation**9.1.4.3.3.1 subopt_sorted**

```
int subopt_sorted [extern]
```

Sort output by energy.

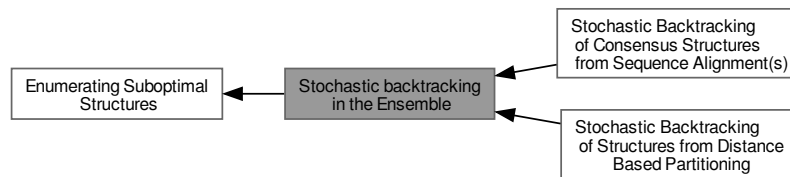
9.1.4.3.3.2 print_energy

```
double print_energy [extern]
```

printing threshold for use with logML

9.1.4.4 Stochastic backtracking in the Ensemble

Collaboration diagram for Stochastic backtracking in the Ensemble:



Modules

- [Stochastic Backtracking of Consensus Structures from Sequence Alignment\(s\)](#)
- [Stochastic Backtracking of Structures from Distance Based Partitioning](#)

Contains functions related to stochastic backtracking from a specified distance class.

Functions

- `char * pbacktrack (char *sequence)`
Sample a secondary structure from the Boltzmann ensemble according its probability
- `char * pbacktrack_circ (char *sequence)`
Sample a secondary structure of a circular RNA from the Boltzmann ensemble according its probability.

Variables

- `int st_back`
Flag indicating that auxiliary arrays are needed throughout the computations. This is essential for stochastic backtracking.

9.1.4.4.1 Detailed Description

9.1.4.4.2 Function Documentation

9.1.4.4.2.1 pbacktrack()

```
char * pbacktrack (
    char * sequence )
```

Sample a secondary structure from the Boltzmann ensemble according its probability

Precondition

`pf_fold_par()` or `pf_fold()` have to be called first to fill the partition function matrices

Parameters

<code>sequence</code>	The RNA sequence
-----------------------	------------------

Returns

A sampled secondary structure in dot-bracket notation

9.1.4.4.2 pbacktrack_circ()

```
char * pbacktrack_circ (
    char * sequence )
```

Sample a secondary structure of a circular RNA from the Boltzmann ensemble according its probability. This function does the same as [pbacktrack\(\)](#) but assumes the RNA molecule to be circular

Precondition

[st_back](#) has to be set to 1 before calling [pf_fold\(\)](#) or [pf_fold_par\(\)](#)
[pf_fold_par\(\)](#) or [pf_circ_fold\(\)](#) have to be called first to fill the partition function matrices

Parameters

<i>sequence</i>	The RNA sequence
-----------------	------------------

Returns

A sampled secondary structure in dot-bracket notation

9.1.4.4.3 Variable Documentation

9.1.4.4.3.1 st_back

```
int st_back [extern]
```

Flag indicating that auxiliary arrays are needed throughout the computations. This is essential for stochastic backtracking.

Set this variable to 1 prior to a call of [pf_fold\(\)](#) to ensure that all matrices needed for stochastic backtracking are filled in the forward recursions

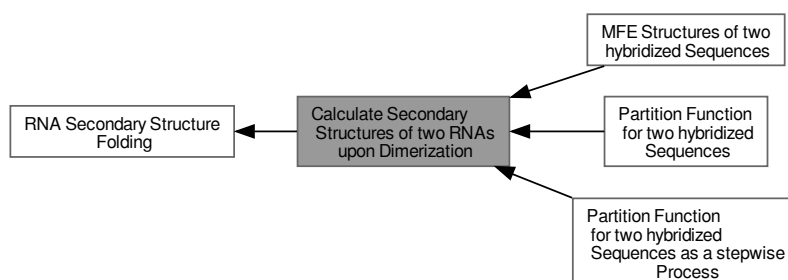
See also

[pbacktrack\(\)](#), [pbacktrack_circ](#)

9.1.5 Calculate Secondary Structures of two RNAs upon Dimerization

Predict structures formed by two molecules upon hybridization.

Collaboration diagram for Calculate Secondary Structures of two RNAs upon Dimerization:



Modules

- [MFE Structures of two hybridized Sequences](#)
- [Partition Function for two hybridized Sequences](#)
Partition Function Cofolding.
- [Partition Function for two hybridized Sequences as a stepwise Process](#)
Partition Function Cofolding as a stepwise process.

9.1.5.1 Detailed Description

Predict structures formed by two molecules upon hybridization.

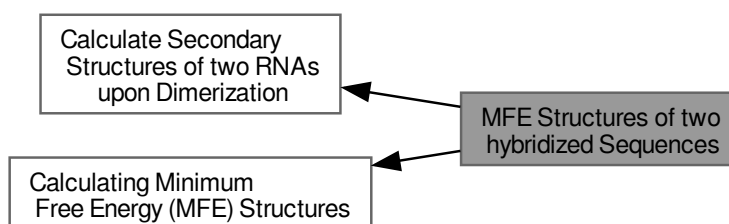
The function of an RNA molecule often depends on its interaction with other RNAs. The following routines therefore allow to predict structures formed by two RNA molecules upon hybridization.

One approach to co-folding two RNAs consists of concatenating the two sequences and keeping track of the concatenation point in all energy evaluations. Correspondingly, many of the `cofold()` and `co_pf_fold()` routines below take one sequence string as argument and use the the global variable `cut_point` to mark the concatenation point. Note that while the *RNAcofold* program uses the `'&'` character to mark the chain break in its input, you should not use an `'&'` when using the library routines (set `cut_point` instead).

In a second approach to co-folding two RNAs, cofolding is seen as a stepwise process. In the first step the probability of an unpaired region is calculated and in a second step this probability of an unpaired region is multiplied with the probability of an interaction between the two RNAs. This approach is implemented for the interaction between a long target sequence and a short ligand RNA. Function `pf_unstru()` calculates the partition function over all unpaired regions in the input sequence. Function `pf_interact()`, which calculates the partition function over all possible interactions between two sequences, needs both sequence as separate strings as input.

9.1.5.2 MFE Structures of two hybridized Sequences

Collaboration diagram for MFE Structures of two hybridized Sequences:



Files

- file `cofold.h`
MFE version of cofolding routines.

Functions

- float `cofold` (const char *sequence, char *structure)
Compute the minimum free energy of two interacting RNA molecules.
- float `cofold_par` (const char *string, char *structure, paramT *parameters, int is_constrained)
Compute the minimum free energy of two interacting RNA molecules.
- void `free_co_arrays` (void)
Free memory occupied by `cofold()`
- void `update_cofold_params` (void)
Recalculate parameters.
- void `export_cofold_arrays_gq` (int **f5_p, int **c_p, int **fML_p, int **fM1_p, int **fc_p, int **ggg_p, int **indx_p, char **ptype_p)
Export the arrays of partition function cofold (with gquadruplex support)
- void `export_cofold_arrays` (int **f5_p, int **c_p, int **fML_p, int **fM1_p, int **fc_p, int **indx_p, char **ptype_p)
Export the arrays of partition function cofold.

9.1.5.2.1 Detailed Description

9.1.5.2.2 Function Documentation

9.1.5.2.2.1 cofold()

```
float cofold (
    const char * sequence,
    char * structure )
```

Compute the minimum free energy of two interacting RNA molecules.

The code is analog to the [fold\(\)](#) function. If `cut_point == -1` results should be the same as with [fold\(\)](#).

Parameters

<i>sequence</i>	The two sequences concatenated
<i>structure</i>	Will hold the bracket dot structure of the dimer molecule

Returns

minimum free energy of the structure

9.1.5.2.2.2 cofold_par()

```
float cofold_par (
    const char * string,
    char * structure,
    paramT * parameters,
    int is_constrained )
```

Compute the minimum free energy of two interacting RNA molecules.

9.1.5.2.2.3 export_cofold_arrays_gq()

```
void export_cofold_arrays_gq (
    int ** f5_p,
    int ** c_p,
    int ** fML_p,
    int ** fM1_p,
    int ** fc_p,
    int ** ggg_p,
    int ** indx_p,
    char ** ptype_p )
```

Export the arrays of partition function cofold (with gquadruplex support)

Export the cofold arrays for use e.g. in the concentration Computations or suboptimal secondary structure backtracking

Parameters

<i>f5_p</i>	A pointer to the 'f5' array, i.e. array containing best free energy in interval [1..j]
<i>c_p</i>	A pointer to the 'c' array, i.e. array containing best free energy in interval [i..j] given that i pairs with j
<i>fML_p</i>	A pointer to the 'M' array, i.e. array containing best free energy in interval [i..j] for any multiloop segment with at least one stem
<i>fM1_p</i>	A pointer to the 'M1' array, i.e. array containing best free energy in interval [i..j] for multiloop segment with exactly one stem
<i>fc_p</i>	A pointer to the 'fc' array, i.e. array ...
<i>ggg_p</i>	A pointer to the 'ggg' array, i.e. array containing best free energy of a gquadruplex delimited by [i..j]
<i>indx_p</i>	A pointer to the indexing array used for accessing the energy matrices
<i>ptype↔_p</i>	A pointer to the ptype array containing the base pair types for each possibility (i,j)

9.1.5.2.2.4 export_cofold_arrays()

```
void export_cofold_arrays (
    int ** f5_p,
    int ** c_p,
    int ** fML_p,
    int ** fM1_p,
    int ** fc_p,
    int ** indx_p,
    char ** ptype_p )
```

Export the arrays of partition function cofold.

Export the cofold arrays for use e.g. in the concentration Computations or suboptimal secondary structure backtracking

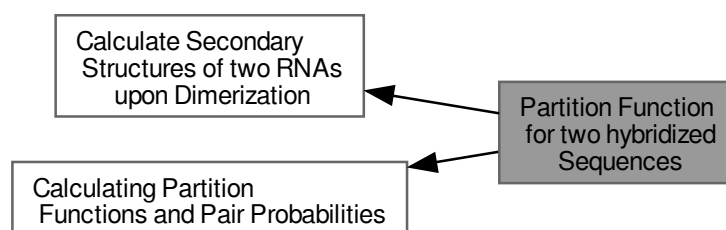
Parameters

<i>f5_p</i>	A pointer to the 'f5' array, i.e. array containing best free energy in interval [1..j]
<i>c_p</i>	A pointer to the 'c' array, i.e. array containing best free energy in interval [i..j] given that i pairs with j
<i>fML_p</i>	A pointer to the 'M' array, i.e. array containing best free energy in interval [i..j] for any multiloop segment with at least one stem
<i>fM1_p</i>	A pointer to the 'M1' array, i.e. array containing best free energy in interval [i..j] for multiloop segment with exactly one stem
<i>fc_p</i>	A pointer to the 'fc' array, i.e. array ...
<i>indx_p</i>	A pointer to the indexing array used for accessing the energy matrices
<i>ptype_p</i>	A pointer to the ptype array containing the base pair types for each possibility (i,j)

9.1.5.3 Partition Function for two hybridized Sequences

Partition Function Cofolding.

Collaboration diagram for Partition Function for two hybridized Sequences:



Files

- file [part_func_co.h](#)
Partition function for two RNA sequences.

Functions

- [cofoldF co_pf_fold](#) (char *sequence, char *structure)
Calculate partition function and base pair probabilities.

- `cofoldF co_pf_fold_par` (char *sequence, char *structure, `pf_paramT` *parameters, int calculate_bppm, int is_constrained)
Calculate partition function and base pair probabilities.
- double * `export_co_bppm` (void)
Get a pointer to the base pair probability array.
- void `free_co_pf_arrays` (void)
Free the memory occupied by `co_pf_fold()`
- void `update_co_pf_params` (int length)
Recalculate energy parameters.
- void `update_co_pf_params_par` (int length, `pf_paramT` *parameters)
Recalculate energy parameters.
- void `compute_probabilities` (double FAB, double FEA, double FEB, struct `plist` *prAB, struct `plist` *prA, struct `plist` *prB, int Alength)
Compute Boltzmann probabilities of dimerization without homodimers.
- `ConcEnt` * `get_concentrations` (double FEAB, double FEAA, double FEBB, double FEA, double FEB, double *startconc)
Given two start monomer concentrations a and b, compute the concentrations in thermodynamic equilibrium of all dimers and the monomers.

Variables

- int `mirnatog`
Toggles no intrabp in 2nd mol.
- double `F_monomer` [2]
Free energies of the two monomers.

9.1.5.3.1 Detailed Description

Partition Function Cofolding.

To simplify the implementation the partition function computation is done internally in a null model that does not include the duplex initiation energy, i.e. the entropic penalty for producing a dimer from two monomers). The resulting free energies and pair probabilities are initially relative to that null model. In a second step the free energies can be corrected to include the dimerization penalty, and the pair probabilities can be divided into the conditional pair probabilities given that a re dimer is formed or not formed. See [2] for further details.

9.1.5.3.2 Function Documentation

9.1.5.3.2.1 `co_pf_fold()`

```
cofoldF co_pf_fold (
    char * sequence,
    char * structure )
```

Calculate partition function and base pair probabilities.

This is the cofold partition function folding. The second molecule starts at the `cut_point` nucleotide.

Note

OpenMP: Since this function relies on the global parameters `do_backtrack`, `dangles`, `temperature` and `pf_scale` it is not threadsafe according to concurrent changes in these variables! Use `co_pf_fold_par()` instead to circumvent this issue.

See also

`co_pf_fold_par()`

Parameters

<i>sequence</i>	Concatenated RNA sequences
<i>structure</i>	Will hold the structure or constraints

Returns

[cofoldF](#) structure containing a set of energies needed for concentration computations.

9.1.5.3.2.2 co_pf_fold_par()

```
cofoldF co_pf_fold_par (
    char * sequence,
    char * structure,
    pf_paramT * parameters,
    int calculate_bppm,
    int is_constrained )
```

Calculate partition function and base pair probabilities.

This is the cofold partition function folding. The second molecule starts at the [cut_point](#) nucleotide.

See also

[get_boltzmann_factors\(\)](#), [co_pf_fold\(\)](#)

Parameters

<i>sequence</i>	Concatenated RNA sequences
<i>structure</i>	Pointer to the structure constraint
<i>parameters</i>	Data structure containing the precalculated Boltzmann factors
<i>calculate_bppm</i>	Switch to turn Base pair probability calculations on/off (0==off)
<i>is_constrained</i>	Switch to indicate that a structure constraint is passed via the structure argument (0==off)

Returns

[cofoldF](#) structure containing a set of energies needed for concentration computations.

9.1.5.3.2.3 export_co_bppm()

```
double * export_co_bppm (
    void )
```

Get a pointer to the base pair probability array.

Accessing the base pair probabilities for a pair (i,j) is achieved by

```
FLT_OR_DBL *pr = export_bppm(); pr_ij = pr[iindx[i]-j];
```

See also

[get_iindx\(\)](#)

Returns

A pointer to the base pair probability array

9.1.5.3.2.4 update_co_pf_params()

```
void update_co_pf_params (
    int length )
```

Recalculate energy parameters.

This function recalculates all energy parameters given the current model settings.

Note

This function relies on the global variables [pf_scale](#), [dangles](#) and [temperature](#). Thus it might not be threadsafe in certain situations. Use [update_co_pf_params_par\(\)](#) instead.

See also

[get_boltzmann_factors\(\)](#), [update_co_pf_params_par\(\)](#)

Parameters

<i>length</i>	Length of the current RNA sequence
---------------	------------------------------------

9.1.5.3.2.5 update_co_pf_params_par()

```
void update_co_pf_params_par (
    int length,
    pf_paramT * parameters )
```

Recalculate energy parameters.

This function recalculates all energy parameters given the current model settings. It's second argument can either be NULL or a data structure containing the precomputed Boltzmann factors. In the first scenario, the necessary data structure will be created automatically according to the current global model settings, i.e. this mode might not be threadsafe. However, if the provided data structure is not NULL, threadsafety for the model parameters [dangles](#), [pf_scale](#) and [temperature](#) is regained, since their values are taken from this data structure during subsequent calculations.

See also

[get_boltzmann_factors\(\)](#), [update_co_pf_params\(\)](#)

Parameters

<i>length</i>	Length of the current RNA sequence
<i>parameters</i>	data structure containing the precomputed Boltzmann factors

9.1.5.3.2.6 compute_probabilities()

```
void compute_probabilities (
    double FAB,
    double FEA,
    double FEB,
    struct plist * prAB,
    struct plist * prA,
    struct plist * prB,
    int Alength )
```

Compute Boltzmann probabilities of dimerization without homodimers.

Given the pair probabilities and free energies (in the null model) for a dimer AB and the two constituent monomers A and B, compute the conditional pair probabilities given that a dimer AB actually forms. Null model pair probabilities are given as a list as produced by [assign_plist_from_pr\(\)](#), the dimer probabilities 'prAB' are modified in place.

Parameters

<i>FAB</i>	free energy of dimer AB
<i>FEA</i>	free energy of monomer A
<i>FEB</i>	free energy of monomer B
<i>prAB</i>	pair probabilities for dimer
<i>prA</i>	pair probabilities monomer
<i>prB</i>	pair probabilities monomer
<i>Alength</i>	Length of molecule A

9.1.5.3.2.7 **get_concentrations()**

```

ConcEnt * get_concentrations (
    double FEAB,
    double FEAA,
    double FEBB,
    double FEA,
    double FEB,
    double * startconc )

```

Given two start monomer concentrations a and b, compute the concentrations in thermodynamic equilibrium of all dimers and the monomers.

This function takes an array 'startconc' of input concentrations with alternating entries for the initial concentrations of molecules A and B (terminated by two zeroes), then computes the resulting equilibrium concentrations from the free energies for the dimers. Dimer free energies should be the dimer-only free energies, i.e. the FcAB entries from the [cofoldF](#) struct.

Parameters

<i>FEAB</i>	Free energy of AB dimer (FcAB entry)
<i>FEAA</i>	Free energy of AA dimer (FcAB entry)
<i>FEBB</i>	Free energy of BB dimer (FcAB entry)
<i>FEA</i>	Free energy of monomer A
<i>FEB</i>	Free energy of monomer B
<i>startconc</i>	List of start concentrations [a0],[b0],[a1],[b1],...,[an],[bn],[0],[0]

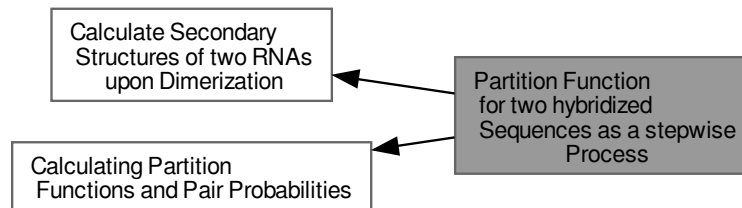
Returns

[ConcEnt](#) array containing the equilibrium energies and start concentrations

9.1.5.4 **Partition Function for two hybridized Sequences as a stepwise Process**

Partition Function Cofolding as a stepwise process.

Collaboration diagram for Partition Function for two hybridized Sequences as a stepwise Process:



Files

- file [part_func_up.h](#)
Partition Function Cofolding as stepwise process.

Functions

- [pu_contrib](#) * [pf_unstru](#) (char *sequence, int max_w)
Calculate the partition function over all unpaired regions of a maximal length.
- [interact](#) * [pf_interact](#) (const char *s1, const char *s2, [pu_contrib](#) *p_c, [pu_contrib](#) *p_c2, int max_w, char *cstruc, int incr3, int incr5)
Calculates the probability of a local interaction between two sequences.
- void [free_interact](#) ([interact](#) *pin)
Frees the output of function [pf_interact\(\)](#).
- void [free_pu_contrib_struct](#) ([pu_contrib](#) *pu)
Frees the output of function [pf_unstru\(\)](#).

9.1.5.4.1 Detailed Description

Partition Function Cofolding as a stepwise process.

9.1.5.4.2 Function Documentation

9.1.5.4.2.1 [pf_unstru\(\)](#)

```

pu\_contrib * pf\_unstru (
    char * sequence,
    int max_w )
  
```

Calculate the partition function over all unpaired regions of a maximal length.

You have to call function [pf_fold\(\)](#) providing the same sequence before calling [pf_unstru\(\)](#). If you want to calculate unpaired regions for a constrained structure, set variable 'structure' in function '[pf_fold\(\)](#)' to the constrain string. It returns a [pu_contrib](#) struct containing four arrays of dimension $[i = 1 \text{ to } \text{length}(\text{sequence})][j = 0 \text{ to } u-1]$ containing all possible contributions to the probabilities of unpaired regions of maximum length u. Each array in [pu_contrib](#) contains one of the contributions to the total probability of being unpaired: The probability of being unpaired within an exterior loop is in array [pu_contrib->E](#), the probability of being unpaired within a hairpin loop is in array [pu_contrib->H](#), the probability of being unpaired within an interior loop is in array [pu_contrib->I](#) and probability of being unpaired within a multi-loop is in array [pu_contrib->M](#). The total probability of being unpaired is the sum of the four arrays of [pu_contrib](#).

This function frees everything allocated automatically. To free the output structure call [free_pu_contrib\(\)](#).

Parameters

sequence	
--------------------------	--

Parameters

<i>max_w</i>	
--------------	--

Returns

9.1.5.4.2.2 pf_interact()

```

interact * pf_interact (
    const char * s1,
    const char * s2,
    pu_contrib * p_c,
    pu_contrib * p_c2,
    int max_w,
    char * cstruc,
    int incr3,
    int incr5 )

```

Calculates the probability of a local interaction between two sequences.

The function considers the probability that the region of interaction is unpaired within 's1' and 's2'. The longer sequence has to be given as 's1'. The shorter sequence has to be given as 's2'. Function [pf_unstru\(\)](#) has to be called for 's1' and 's2', where the probabilities of being unpaired have to be given in 'p_c' and 'p_c2', respectively. If you do not want to include the probabilities of being unpaired for 's2' set 'p_c2' to NULL. If variable 'cstruc' is not NULL, constrained folding is done: The available constraints for intermolecular interaction are: '.' (no constrain), 'x' (the base has no intermolecular interaction) and '|' (the corresponding base has to be paired intermolecularly).

The parameter 'w' determines the maximal length of the interaction. The parameters 'incr5' and 'incr3' allows inclusion of unpaired residues left ('incr5') and right ('incr3') of the region of interaction in 's1'. If the 'incr' options are used, function [pf_unstru\(\)](#) has to be called with $w = w + \text{incr5} + \text{incr3}$ for the longer sequence 's1'.

It returns a structure of type [interact](#) which contains the probability of the best local interaction including residue i in P_i and the minimum free energy in G_i , where i is the position in sequence 's1'. The member G_{ikjl} of structure [interact](#) is the best interaction between region $[k,i]$ $k < i$ in longer sequence 's1' and region $[j,l]$ $j < l$ in 's2'. G_{ikjl_wo} is G_{ikjl} without the probability of being unpaired.

Use [free_interact\(\)](#) to free the returned structure, all other stuff is freed inside [pf_interact\(\)](#).

Parameters

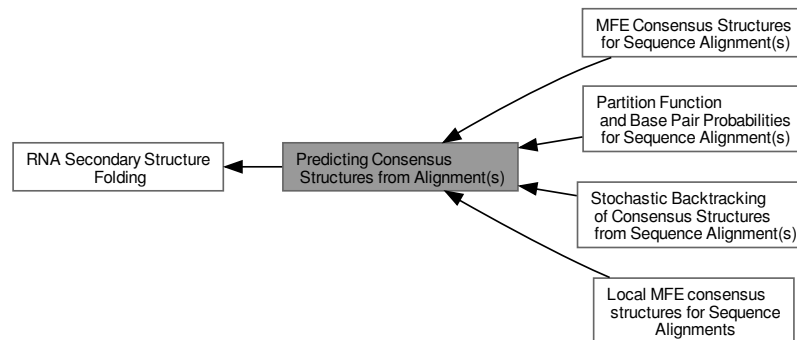
<i>s1</i>	
<i>s2</i>	
<i>p_c</i>	
<i>p_c2</i>	
<i>max_w</i>	
<i>cstruc</i>	
<i>incr3</i>	
<i>incr5</i>	

Returns

9.1.6 Predicting Consensus Structures from Alignment(s)

compute various properties (consensus MFE structures, partition function, Boltzmann distributed stochastic samples, ...) for RNA sequence alignments

Collaboration diagram for Predicting Consensus Structures from Alignment(s):



Modules

- [MFE Consensus Structures for Sequence Alignment\(s\)](#)
- [Partition Function and Base Pair Probabilities for Sequence Alignment\(s\)](#)
- [Stochastic Backtracking of Consensus Structures from Sequence Alignment\(s\)](#)
- [Local MFE consensus structures for Sequence Alignments](#)

Files

- file [alifold.h](#)
compute various properties (consensus MFE structures, partition function, Boltzmann distributed stochastic samples, ...) for RNA sequence alignments

Functions

- int [get_mpi](#) (char *Aseq[], int n_seq, int length, int *mini)
Get the mean pairwise identity in steps from ?to?(ident)
- float ** [readribosum](#) (char *name)
Read a ribosum or other user-defined scoring matrix.
- float [energy_of_alistruct](#) (const char **sequences, const char *structure, int n_seq, float *energy)
Calculate the free energy of a consensus structure given a set of aligned sequences.
- void [encode_ali_sequence](#) (const char *sequence, short *S, short *s5, short *s3, char *ss, unsigned short *as, int circ)
Get arrays with encoded sequence of the alignment.
- void [alloc_sequence_arrays](#) (const char **sequences, short ***S, short ***S5, short ***S3, unsigned short ***a2s, char ***Ss, int circ)
Allocate memory for sequence array used to deal with aligned sequences.
- void [free_sequence_arrays](#) (unsigned int n_seq, short ***S, short ***S5, short ***S3, unsigned short ***a2s, char ***Ss)
Free the memory of the sequence arrays used to deal with aligned sequences.
- int [get_alipf_arrays](#) (short ***S_p, short ***S5_p, short ***S3_p, unsigned short ***a2s_p, char ***Ss_p, double **qb_p, double **qm_p, double **q1k_p, double **qln_p, short **pscore)
Get pointers to (almost) all relevant arrays used in alifold's partition function computation.

Variables

- double `cv_fact`

This variable controls the weight of the covariance term in the energy function of alignment folding algorithms.

- double `nc_fact`

This variable controls the magnitude of the penalty for non-compatible sequences in the covariance term of alignment folding algorithms.

9.1.6.1 Detailed Description

compute various properties (consensus MFE structures, partition function, Boltzmann distributed stochastic samples, ...) for RNA sequence alignments

Consensus structures can be predicted by a modified version of the `fold()` algorithm that takes a set of aligned sequences instead of a single sequence. The energy function consists of the mean energy averaged over the sequences, plus a covariance term that favors pairs with consistent and compensatory mutations and penalizes pairs that cannot be formed by all structures. For details see [4] and [1].

9.1.6.2 Function Documentation

9.1.6.2.1 `get_mpi()`

```
int get_mpi (
    char * Aseq[],
    int n_seq,
    int length,
    int * mini )
```

Get the mean pairwise identity in steps from ?to?(ident)

Parameters

<code>Aseq</code>	
<code>n_seq</code>	The number of sequences in the alignment
<code>length</code>	The length of the alignment
<code>mini</code>	

Returns

The mean pairwise identity

9.1.6.2.2 `readribosum()`

```
float ** readribosum (
    char * name )
```

Read a ribosum or other user-defined scoring matrix.

9.1.6.2.3 `energy_of_alistruct()`

```
float energy_of_alistruct (
    const char ** sequences,
    const char * structure,
    int n_seq,
    float * energy )
```

Calculate the free energy of a consensus structure given a set of aligned sequences.

Parameters

<code>sequences</code>	The NULL terminated array of sequences
<code>structure</code>	The consensus structure

Parameters

<i>n_seq</i>	The number of sequences in the alignment
<i>energy</i>	A pointer to an array of at least two floats that will hold the free energies (energy[0] will contain the free energy, energy[1] will be filled with the covariance energy term)

Returns

free energy in kcal/mol

9.1.6.2.4 encode_ali_sequence()

```
void encode_ali_sequence (
    const char * sequence,
    short * S,
    short * s5,
    short * s3,
    char * ss,
    unsigned short * as,
    int circ )
```

Get arrays with encoded sequence of the alignment.

this function assumes that in S, S5, s3, ss and as enough space is already allocated (size must be at least sequence length+2)

Parameters

<i>sequence</i>	The gapped sequence from the alignment
<i>S</i>	pointer to an array that holds encoded sequence
<i>s5</i>	pointer to an array that holds the next base 5' of alignment position i
<i>s3</i>	pointer to an array that holds the next base 3' of alignment position i
<i>ss</i>	
<i>as</i>	
<i>circ</i>	assume the molecules to be circular instead of linear (circ=0)

9.1.6.2.5 alloc_sequence_arrays()

```
void alloc_sequence_arrays (
    const char ** sequences,
    short *** S,
    short *** S5,
    short *** S3,
    unsigned short *** a2s,
    char *** Ss,
    int circ )
```

Allocate memory for sequence array used to deal with aligned sequences.

Note that these arrays will also be initialized according to the sequence alignment given

See also

[free_sequence_arrays\(\)](#)

Parameters

<i>sequences</i>	The aligned sequences
<i>S</i>	A pointer to the array of encoded sequences

Parameters

<i>S5</i>	A pointer to the array that contains the next 5' nucleotide of a sequence position
<i>S3</i>	A pointer to the array that contains the next 3' nucleotide of a sequence position
<i>a2s</i>	A pointer to the array that contains the alignment to sequence position mapping
<i>Ss</i>	A pointer to the array that contains the ungapped sequence
<i>circ</i>	assume the molecules to be circular instead of linear (<i>circ</i> =0)

9.1.6.2.6 free_sequence_arrays()

```
void free_sequence_arrays (
    unsigned int n_seq,
    short *** S,
    short *** S5,
    short *** S3,
    unsigned short *** a2s,
    char *** Ss )
```

Free the memory of the sequence arrays used to deal with aligned sequences.

This function frees the memory previously allocated with [alloc_sequence_arrays\(\)](#)

See also

[alloc_sequence_arrays\(\)](#)

Parameters

<i>n_seq</i>	The number of aligned sequences
<i>S</i>	A pointer to the array of encoded sequences
<i>S5</i>	A pointer to the array that contains the next 5' nucleotide of a sequence position
<i>S3</i>	A pointer to the array that contains the next 3' nucleotide of a sequence position
<i>a2s</i>	A pointer to the array that contains the alignment to sequence position mapping
<i>Ss</i>	A pointer to the array that contains the ungapped sequence

9.1.6.2.7 get_alipf_arrays()

```
int get_alipf_arrays (
    short *** S_p,
    short *** S5_p,
    short *** S3_p,
    unsigned short *** a2s_p,
    char *** Ss_p,
    double ** qb_p,
    double ** qm_p,
    double ** qlk_p,
    double ** qln_p,
    short ** pscore )
```

Get pointers to (almost) all relevant arrays used in alifold's partition function computation.

Note

To obtain meaningful pointers, call `alipf_fold` first!

See also

`pf_alifold()`, [alipf_circ_fold\(\)](#)

Parameters

S_p	A pointer to the 'S' array (integer representation of nucleotides)
$S5 \leftrightarrow _p$	A pointer to the 'S5' array
$S3 \leftrightarrow _p$	A pointer to the 'S3' array
$a2s \leftrightarrow _p$	A pointer to the pair type matrix
Ss_p	A pointer to the 'Ss' array
qb_p	A pointer to the Q^B matrix
$qm \leftrightarrow _p$	A pointer to the Q^M matrix
$q1k \leftrightarrow _p$	A pointer to the 5' slice of the Q matrix ($q1k(k) = Q(1, k)$)
$qln \leftrightarrow _p$	A pointer to the 3' slice of the Q matrix ($qln(l) = Q(l, n)$)

Returns

Non Zero if everything went fine, 0 otherwise

9.1.6.3 Variable Documentation

9.1.6.3.1 cv_fact

```
double cv_fact [extern]
```

This variable controls the weight of the covariance term in the energy function of alignment folding algorithms. Default is 1.

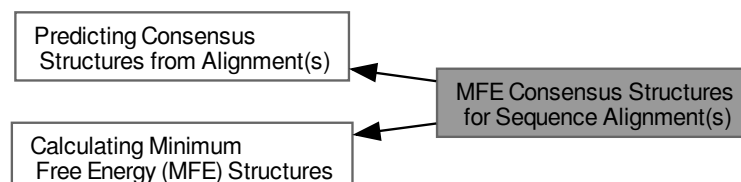
9.1.6.3.2 nc_fact

```
double nc_fact [extern]
```

This variable controls the magnitude of the penalty for non-compatible sequences in the covariance term of alignment folding algorithms. Default is 1.

9.1.6.4 MFE Consensus Structures for Sequence Alignment(s)

Collaboration diagram for MFE Consensus Structures for Sequence Alignment(s):



Functions

- float [alifold](#) (const char **strings, char *structure)

Compute MFE and according consensus structure of an alignment of sequences.

- float [circularfold](#) (const char **strings, char *structure)

Compute MFE and according structure of an alignment of sequences assuming the sequences are circular instead of linear.

- void [free_alifold_arrays](#) (void)

Free the memory occupied by MFE alifold functions.

9.1.6.4.1 Detailed Description

9.1.6.4.2 Function Documentation

9.1.6.4.2.1 alifold()

```
float alifold (
    const char ** strings,
    char * structure )
```

Compute MFE and according consensus structure of an alignment of sequences.

This function predicts the consensus structure for the aligned 'sequences' and returns the minimum free energy; the mfe structure in bracket notation is returned in 'structure'.

Sufficient space must be allocated for 'structure' before calling [alifold\(\)](#).

Parameters

<i>strings</i>	A pointer to a NULL terminated array of character arrays
<i>structure</i>	A pointer to a character array that may contain a constraining consensus structure (will be overwritten by a consensus structure that exhibits the MFE)

Returns

The free energy score in kcal/mol

9.1.6.4.2.2 circularfold()

```
float circularfold (
    const char ** strings,
    char * structure )
```

Compute MFE and according structure of an alignment of sequences assuming the sequences are circular instead of linear.

Parameters

<i>strings</i>	A pointer to a NULL terminated array of character arrays
<i>structure</i>	A pointer to a character array that may contain a constraining consensus structure (will be overwritten by a consensus structure that exhibits the MFE)

Returns

The free energy score in kcal/mol

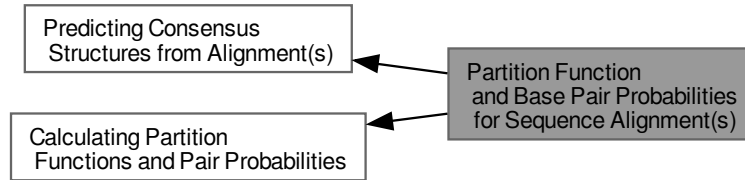
9.1.6.4.2.3 free_alifold_arrays()

```
void free_alifold_arrays (
    void )
```

Free the memory occupied by MFE alifold functions.

9.1.6.5 Partition Function and Base Pair Probabilities for Sequence Alignment(s)

Collaboration diagram for Partition Function and Base Pair Probabilities for Sequence Alignment(s):



Functions

- float `alipf_fold_par` (const char **sequences, char *structure, `plist` **pl, `pf_paramT` *parameters, int calculate_bppm, int is_constrained, int is_circular)
- float `alipf_fold` (const char **sequences, char *structure, `plist` **pl)

The partition function version of `alifold()` works in analogy to `pf_fold()`. Pair probabilities and information about sequence covariations are returned via the 'pi' variable as a list of `pair_info` structs. The list is terminated by the first entry with `pi.i = 0`.
- float `alipf_circ_fold` (const char **sequences, char *structure, `plist` **pl)
- double * `export_ali_bppm` (void)

Get a pointer to the base pair probability array.

9.1.6.5.1 Detailed Description

9.1.6.5.2 Function Documentation

9.1.6.5.2.1 `alipf_fold_par()`

```
float alipf_fold_par (
    const char ** sequences,
    char * structure,
    plist ** pl,
    pf_paramT * parameters,
    int calculate_bppm,
    int is_constrained,
    int is_circular )
```

Parameters

<i>sequences</i>	
<i>structure</i>	
<i>pl</i>	
<i>parameters</i>	
<i>calculate_bppm</i>	
<i>is_constrained</i>	
<i>is_circular</i>	

Returns

9.1.6.5.2.2 `alipf_fold()`

```
float alipf_fold (
    const char ** sequences,
    char * structure,
    plist ** pl )
```

The partition function version of `alifold()` works in analogy to `pf_fold()`. Pair probabilities and information about sequence covariations are returned via the 'pi' variable as a list of `pair_info` structs. The list is terminated by the first entry with `pi.i = 0`.

Parameters

<i>sequences</i>	
<i>structure</i>	
<i>pl</i>	

Returns

9.1.6.5.2.3 `alipf_circ_fold()`

```
float alipf_circ_fold (
    const char ** sequences,
    char * structure,
    plist ** pl )
```

Parameters

<i>sequences</i>	
<i>structure</i>	
<i>pl</i>	

Returns

9.1.6.5.2.4 `export_ali_bppm()`

```
double * export_ali_bppm (
    void )
```

Get a pointer to the base pair probability array.

Accessing the base pair probabilities for a pair (i,j) is achieved by

```
FLT_OR_DBL *pr = export_bppm(); pr_ij = pr[iindx[i]-j];
```

See also

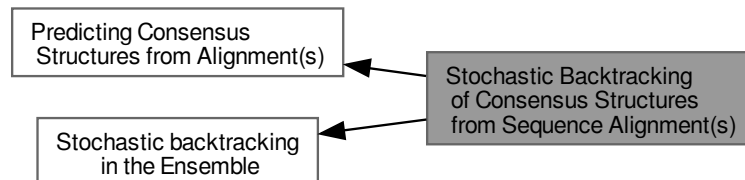
[get_iindx\(\)](#)

Returns

A pointer to the base pair probability array

9.1.6.6 Stochastic Backtracking of Consensus Structures from Sequence Alignment(s)

Collaboration diagram for Stochastic Backtracking of Consensus Structures from Sequence Alignment(s):

**Functions**

- char * [alipbacktrack](#) (double *prob)

Sample a consensus secondary structure from the Boltzmann ensemble according its probability

9.1.6.6.1 Detailed Description**9.1.6.6.2 Function Documentation****9.1.6.6.2.1 alipbacktrack()**

```
char * alipbacktrack (  
    double * prob )
```

Sample a consensus secondary structure from the Boltzmann ensemble according its probability

Parameters

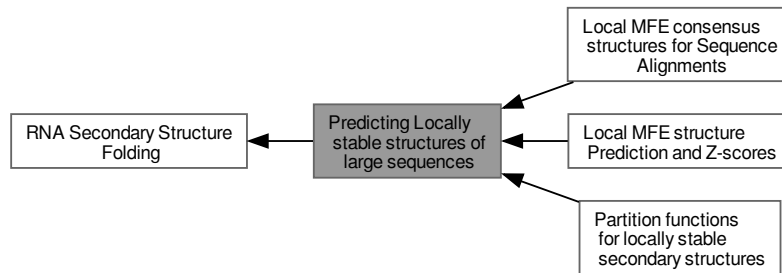
<i>prob</i>	to be described (berni)
-------------	-------------------------

Returns

A sampled consensus secondary structure in dot-bracket notation

9.1.7 Predicting Locally stable structures of large sequences

Collaboration diagram for Predicting Locally stable structures of large sequences:

**Modules**

- [Local MFE structure Prediction and Z-scores](#)
- [Partition functions for locally stable secondary structures](#)
- [Local MFE consensus structures for Sequence Alignments](#)

Files

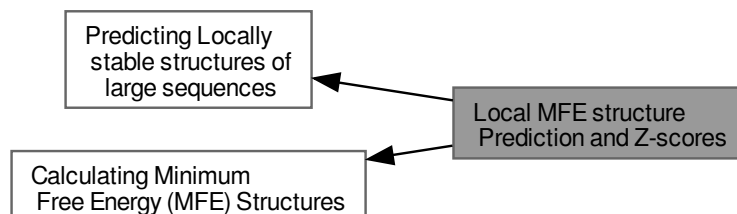
- file [Lfold.h](#)
Predicting local MFE structures of large sequences.

9.1.7.1 Detailed Description

Local structures can be predicted by a modified version of the [fold\(\)](#) algorithm that restricts the span of all base pairs.

9.1.7.2 Local MFE structure Prediction and Z-scores

Collaboration diagram for Local MFE structure Prediction and Z-scores:



Functions

- float `Lfold` (const char *string, char *structure, int maxdist)
The local analog to `fold()`.
- float `Lfoldz` (const char *string, char *structure, int maxdist, int zsc, double min_z)

9.1.7.2.1 Detailed Description

9.1.7.2.2 Function Documentation

9.1.7.2.2.1 Lfold()

```
float Lfold (  
    const char * string,  
    char * structure,  
    int maxdist )
```

The local analog to `fold()`.

Computes the minimum free energy structure including only base pairs with a span smaller than 'maxdist'

Parameters

<i>string</i>	
<i>structure</i>	
<i>maxdist</i>	

9.1.7.2.2.2 Lfoldz()

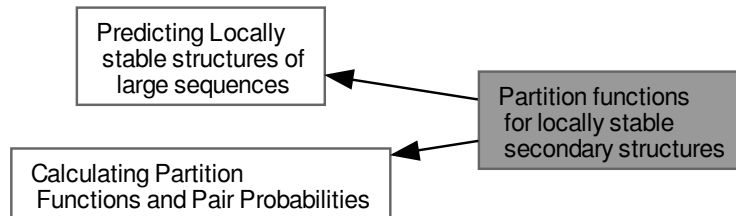
```
float Lfoldz (  
    const char * string,  
    char * structure,  
    int maxdist,  
    int zsc,  
    double min_z )
```

Parameters

<i>string</i>	
<i>structure</i>	
<i>maxdist</i>	
<i>zsc</i>	
<i>min_z</i>	

9.1.7.3 Partition functions for locally stable secondary structures

Collaboration diagram for Partition functions for locally stable secondary structures:



Files

- file [LPfold.h](#)

Function declarations of partition function variants of the Lfold algorithm.

Functions

- void [update_pf_paramsLP](#) (int length)
- [plist](#) * [pfl_fold](#) (char *sequence, int winSize, int pairSize, float cutoffb, double **pU, struct [plist](#) **dpp2, FILE *pUfp, FILE *spup)
Compute partition functions for locally stable secondary structures.
- [plist](#) * [pfl_fold_par](#) (char *sequence, int winSize, int pairSize, float cutoffb, double **pU, struct [plist](#) **dpp2, FILE *pUfp, FILE *spup, [pf_paramT](#) *parameters)
Compute partition functions for locally stable secondary structures.
- void [putoutpU_prob](#) (double **pU, int length, int ulength, FILE *fp, int energies)
Writes the unpaired probabilities (pU) or opening energies into a file.
- void [putoutpU_prob_bin](#) (double **pU, int length, int ulength, FILE *fp, int energies)
Writes the unpaired probabilities (pU) or opening energies into a binary file.

9.1.7.3.1 Detailed Description

9.1.7.3.2 Function Documentation

9.1.7.3.2.1 [update_pf_paramsLP\(\)](#)

```
void update_pf_paramsLP (
    int length )
```

Parameters

length	
------------------------	--

9.1.7.3.2.2 [pfl_fold\(\)](#)

```
plist * pfl_fold (
    char * sequence,
    int winSize,
    int pairSize,
    float cutoffb,
```

```
double ** pU,
struct plist ** dpp2,
FILE * pUfp,
FILE * spup )
```

Compute partition functions for locally stable secondary structures.

`pfl_fold` computes partition functions for every window of size 'winSize' possible in a RNA molecule, allowing only pairs with a span smaller than 'pairSize'. It returns the mean pair probabilities averaged over all windows containing the pair in 'pl'. 'winSize' should always be \geq 'pairSize'. Note that in contrast to `Lfold()`, bases outside of the window do not influence the structure at all. Only probabilities higher than 'cutoffb' are kept.

If 'pU' is supplied (i.e. is not the NULL pointer), `pfl_fold()` will also compute the mean probability that regions of length 'u' and smaller are unpaired. The parameter 'u' is supplied in 'pup[0][0]'. On return the 'pup' array will contain these probabilities, with the entry on 'pup[x][y]' containing the mean probability that x and the y-1 preceding bases are unpaired. The 'pU' array needs to be large enough to hold $n+1$ float* entries, where n is the sequence length.

If an array dpp2 is supplied, the probability of base pair (i,j) given that there already exists a base pair (i+1,j-1) is also computed and saved in this array. If pUfp is given (i.e. not NULL), pU is not saved but put out immediately. If spup is given (i.e. is not NULL), the pair probabilities in pl are not saved but put out immediately.

Parameters

<i>sequence</i>	RNA sequence
<i>winSize</i>	size of the window
<i>pairSize</i>	maximum size of base pair
<i>cutoffb</i>	cutoffb for base pairs
<i>pU</i>	array holding all unpaired probabilities
<i>dpp2</i>	array of dependent pair probabilities
<i>pUfp</i>	file pointer for pU
<i>spup</i>	file pointer for pair probabilities

Returns

list of pair probabilities

9.1.7.3.2.3 pfl_fold_par()

```
plist * pfl_fold_par (
    char * sequence,
    int winSize,
    int pairSize,
    float cutoffb,
    double ** pU,
    struct plist ** dpp2,
    FILE * pUfp,
    FILE * spup,
    pf_paramT * parameters )
```

Compute partition functions for locally stable secondary structures.

9.1.7.3.2.4 putoutpU_prob()

```
void putoutpU_prob (
    double ** pU,
    int length,
    int ulength,
```

```
FILE * fp,
int energies )
```

Writes the unpaired probabilities (pU) or opening energies into a file.

Can write either the unpaired probabilities (accessibilities) pU or the opening energies $-\log(pU)kT$ into a file

Parameters

<i>pU</i>	pair probabilities
<i>length</i>	length of RNA sequence
<i>ulength</i>	maximum length of unpaired stretch
<i>fp</i>	file pointer of destination file
<i>energies</i>	switch to put out as opening energies

9.1.7.3.2.5 putoutpU_prob_bin()

```
void putoutpU_prob_bin (
    double ** pU,
    int length,
    int ulength,
    FILE * fp,
    int energies )
```

Writes the unpaired probabilities (pU) or opening energies into a binary file.

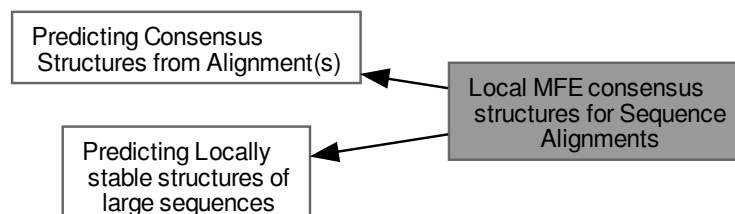
Can write either the unpaired probabilities (accessibilities) pU or the opening energies $-\log(pU)kT$ into a file

Parameters

<i>pU</i>	pair probabilities
<i>length</i>	length of RNA sequence
<i>ulength</i>	maximum length of unpaired stretch
<i>fp</i>	file pointer of destination file
<i>energies</i>	switch to put out as opening energies

9.1.7.4 Local MFE consensus structures for Sequence Alignments

Collaboration diagram for Local MFE consensus structures for Sequence Alignments:



Functions

- float [aliLfold](#) (const char **strings, char *structure, int maxdist)

9.1.7.4.1 Detailed Description

9.1.7.4.2 Function Documentation

9.1.7.4.2.1 aliLfold()

```
float aliLfold (
    const char ** strings,
    char * structure,
    int maxdist )
```

Parameters

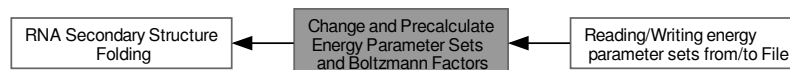
<i>strings</i>	
<i>structure</i>	
<i>maxdist</i>	

Returns

9.1.8 Change and Precalculate Energy Parameter Sets and Boltzmann Factors

All relevant functions to retrieve and copy precalculated energy parameter sets as well as reading/writing the energy parameter set from/to file(s).

Collaboration diagram for Change and Precalculate Energy Parameter Sets and Boltzmann Factors:



Modules

- [Reading/Writing energy parameter sets from/to File](#)
Read and Write energy parameter sets from and to text files.

Files

- file [params.h](#)

Functions

- [paramT * scale_parameters](#) (void)
Get precomputed energy contributions for all the known loop types.
- [paramT * get_scaled_parameters](#) (double [temperature](#), [model_detailsT](#) md)
Get precomputed energy contributions for all the known loop types.
- [pf_paramT * get_scaled_pf_parameters](#) (void)
- [pf_paramT * get_boltzmann_factors](#) (double [temperature](#), double betaScale, [model_detailsT](#) md, double [pf_scale](#))
Get precomputed Boltzmann factors of the loop type dependent energy contributions with independent thermodynamic temperature.

- `pf_paramT * get_boltzmann_factor_copy (pf_paramT *parameters)`
Get a copy of already precomputed Boltzmann factors.
- `pf_paramT * get_scaled_pf_parameters_hybrid (void)`
Get precomputed Boltzmann factors of the loop type dependent energy contributions (alifold variant)
- `PUBLIC pf_paramT * get_boltzmann_factors_al (unsigned int n_seq, double temperature, double betaScale, model_detailsT md, double pf_scale)`
Get precomputed Boltzmann factors of the loop type dependent energy contributions (alifold variant) with independent thermodynamic temperature.

9.1.8.1 Detailed Description

All relevant functions to retrieve and copy precalculated energy parameter sets as well as reading/writing the energy parameter set from/to file(s).

This module covers all relevant functions for precalculation of the energy parameters necessary for the folding routines provided by RNAlib. Furthermore, the energy parameter set in the RNAlib can be easily exchanged by a user-defined one. It is also possible to write the current energy parameter set into a text file.

9.1.8.2 Function Documentation

9.1.8.2.1 scale_parameters()

```
paramT * scale_parameters (
    void )
```

Get precomputed energy contributions for all the known loop types.

Note

OpenMP: This function relies on several global model settings variables and thus is not to be considered threadsafe. See `get_scaled_parameters()` for a completely threadsafe implementation.

Returns

A set of precomputed energy contributions

9.1.8.2.2 get_scaled_parameters()

```
paramT * get_scaled_parameters (
    double temperature,
    model_detailsT md )
```

Get precomputed energy contributions for all the known loop types.

Call this function to retrieve precomputed energy contributions, i.e. scaled according to the temperature passed. Furthermore, this function assumes a data structure that contains the model details as well, such that subsequent folding recursions are able to retrieve the correct model settings

See also

`model_detailsT`, `set_model_details()`

Parameters

<i>temperature</i>	The temperature in degrees Celcius
<i>md</i>	The model details

Returns

precomputed energy contributions and model settings

9.1.8.2.3 get_scaled_pf_parameters()

```
pf_paramT * get_scaled_pf_parameters (
    void )
```

get a datastructure of type `pf_paramT` which contains the Boltzmann weights of several energy parameters scaled according to the current temperature

Returns

The datastructure containing Boltzmann weights for use in partition function calculations

9.1.8.2.4 get_boltzmann_factors()

```
pf_paramT * get_boltzmann_factors (
    double temperature,
    double betaScale,
    model_detailsT md,
    double pf_scale )
```

Get precomputed Boltzmann factors of the loop type dependent energy contributions with independent thermodynamic temperature.

This function returns a data structure that contains all necessary precalculated Boltzmann factors for each loop type contribution.

In contrast to `get_scaled_pf_parameters()`, this function enables setting of independent temperatures for both, the individual energy contributions as well as the thermodynamic temperature used in $\exp(-\Delta G/kT)$

See also

[get_scaled_pf_parameters\(\)](#), [get_boltzmann_factor_copy\(\)](#)

Parameters

<i>temperature</i>	The temperature in degrees Celcius used for (re-)scaling the energy contributions
<i>betaScale</i>	A scaling value that is used as a multiplication factor for the absolute temperature of the system
<i>md</i>	The model details to be used
<i>pf_scale</i>	The scaling factor for the Boltzmann factors

Returns

A set of precomputed Boltzmann factors

9.1.8.2.5 get_boltzmann_factor_copy()

```
pf_paramT * get_boltzmann_factor_copy (
    pf_paramT * parameters )
```

Get a copy of already precomputed Boltzmann factors.

See also

[get_boltzmann_factors\(\)](#), [get_scaled_pf_parameters\(\)](#)

Parameters

<i>parameters</i>	The input data structure that shall be copied
-------------------	---

Returns

A copy of the provided Boltzmann factor dataset

9.1.8.2.6 get_scaled_pf_parameters_hybrid()

```
pf_paramT * get_scaled_pf_parameters_hybrid (
    void )
```

Get precomputed Boltzmann factors of the loop type dependent energy contributions (alifold variant)

9.1.8.2.7 get_boltzmann_factors_ali()

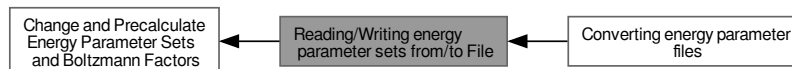
```
PUBLIC pf_paramT * get_boltzmann_factors_ali (
    unsigned int n_seq,
    double temperature,
    double betaScale,
    model_detailsT md,
    double pf_scale )
```

Get precomputed Boltzmann factors of the loop type dependent energy contributions (alifold variant) with independent thermodynamic temperature.

9.1.8.3 Reading/Writing energy parameter sets from/to File

Read and Write energy parameter sets from and to text files.

Collaboration diagram for Reading/Writing energy parameter sets from/to File:

**Modules**

- [Converting energy parameter files](#)

Convert energy parameter files into the latest format.

Files

- file [read_epars.h](#)

Enumerations

- enum [parset](#)

Identifiers for energy contribution parameters in parameter files.

Functions

- void [read_parameter_file](#) (const char fname[])
Read energy parameters from a file.
- void [write_parameter_file](#) (const char fname[])
Write energy parameters to a file.

9.1.8.3.1 Detailed Description

Read and Write energy parameter sets from and to text files.

A default set of parameters, identical to the one described in [9] and [13], is compiled into the library.

9.1.8.3.2 Enumeration Type Documentation

9.1.8.3.2.1 parset

enum [parset](#)

Identifiers for energy contribution parameters in parameter files.

DO NOT ALTER THEIR ORDER unless you are also reordering the char pointers in the const array 'identifier' in read_epars.c!!!

9.1.8.3.3 Function Documentation

9.1.8.3.3.1 read_parameter_file()

```
void read_parameter_file (
    const char fname[] )
```

Read energy parameters from a file.

Parameters

<i>fname</i>	The path to the file containing the energy parameters
--------------	---

9.1.8.3.3.2 write_parameter_file()

```
void write_parameter_file (
    const char fname[] )
```

Write energy parameters to a file.

Parameters

<i>fname</i>	A filename (path) for the file where the current energy parameters will be written to
--------------	---

9.1.8.3.4 Converting energy parameter files

Convert energy parameter files into the latest format.

Collaboration diagram for Converting energy parameter files:



Files

- file [convert_epars.h](#)

Functions and definitions for energy parameter file format conversion.

Macros

- `#define VRNA_CONVERT_OUTPUT_ALL 1U`
- `#define VRNA_CONVERT_OUTPUT_HP 2U`
- `#define VRNA_CONVERT_OUTPUT_STACK 4U`
- `#define VRNA_CONVERT_OUTPUT_MM_HP 8U`

- `#define VRNA_CONVERT_OUTPUT_MM_INT 16U`
- `#define VRNA_CONVERT_OUTPUT_MM_INT_1N 32U`
- `#define VRNA_CONVERT_OUTPUT_MM_INT_23 64U`
- `#define VRNA_CONVERT_OUTPUT_MM_MULTI 128U`
- `#define VRNA_CONVERT_OUTPUT_MM_EXT 256U`
- `#define VRNA_CONVERT_OUTPUT_DANGLE5 512U`
- `#define VRNA_CONVERT_OUTPUT_DANGLE3 1024U`
- `#define VRNA_CONVERT_OUTPUT_INT_11 2048U`
- `#define VRNA_CONVERT_OUTPUT_INT_21 4096U`
- `#define VRNA_CONVERT_OUTPUT_INT_22 8192U`
- `#define VRNA_CONVERT_OUTPUT_BULGE 16384U`
- `#define VRNA_CONVERT_OUTPUT_INT 32768U`
- `#define VRNA_CONVERT_OUTPUT_ML 65536U`
- `#define VRNA_CONVERT_OUTPUT_MISC 131072U`
- `#define VRNA_CONVERT_OUTPUT_SPECIAL_HP 262144U`
- `#define VRNA_CONVERT_OUTPUT_VANILLA 524288U`
- `#define VRNA_CONVERT_OUTPUT_NINIO 1048576U`
- `#define VRNA_CONVERT_OUTPUT_DUMP 2097152U`

Functions

- void `convert_parameter_file` (const char *iname, const char *oname, unsigned int options)

9.1.8.3.4.1 Detailed Description

Convert energy parameter files into the latest format.

To preserve some backward compatibility the RNAlib also provides functions to convert energy parameter files from the format used in version 1.4-1.8 into the new format used since version 2.0

9.1.8.3.4.2 Macro Definition Documentation

VRNA_CONVERT_OUTPUT_ALL

```
#define VRNA_CONVERT_OUTPUT_ALL 1U
```

Flag to indicate printing of a complete parameter set

VRNA_CONVERT_OUTPUT_HP

```
#define VRNA_CONVERT_OUTPUT_HP 2U
```

Flag to indicate printing of hairpin contributions

VRNA_CONVERT_OUTPUT_STACK

```
#define VRNA_CONVERT_OUTPUT_STACK 4U
```

Flag to indicate printing of base pair stack contributions

VRNA_CONVERT_OUTPUT_MM_HP

```
#define VRNA_CONVERT_OUTPUT_MM_HP 8U
```

Flag to indicate printing of hairpin mismatch contribution

VRNA_CONVERT_OUTPUT_MM_INT

```
#define VRNA_CONVERT_OUTPUT_MM_INT 16U
```

Flag to indicate printing of interior loop mismatch contribution

VRNA_CONVERT_OUTPUT_MM_INT_1N

```
#define VRNA_CONVERT_OUTPUT_MM_INT_1N 32U
```

Flag to indicate printing of 1:n interior loop mismatch contribution

VRNA_CONVERT_OUTPUT_MM_INT_23

```
#define VRNA_CONVERT_OUTPUT_MM_INT_23 64U
```

Flag to indicate printing of 2:3 interior loop mismatch contribution

VRNA_CONVERT_OUTPUT_MM_MULT

```
#define VRNA_CONVERT_OUTPUT_MM_MULT 128U
```

Flag to indicate printing of multi loop mismatch contribution

VRNA_CONVERT_OUTPUT_MM_EXT

```
#define VRNA_CONVERT_OUTPUT_MM_EXT 256U
```

Flag to indicate printing of exterior loop mismatch contribution

VRNA_CONVERT_OUTPUT_DANGLE5

```
#define VRNA_CONVERT_OUTPUT_DANGLE5 512U
```

Flag to indicate printing of 5' dangle contribution

VRNA_CONVERT_OUTPUT_DANGLE3

```
#define VRNA_CONVERT_OUTPUT_DANGLE3 1024U
```

Flag to indicate printing of 3' dangle contribution

VRNA_CONVERT_OUTPUT_INT_11

```
#define VRNA_CONVERT_OUTPUT_INT_11 2048U
```

Flag to indicate printing of 1:1 interior loop contribution

VRNA_CONVERT_OUTPUT_INT_21

```
#define VRNA_CONVERT_OUTPUT_INT_21 4096U
```

Flag to indicate printing of 2:1 interior loop contribution

VRNA_CONVERT_OUTPUT_INT_22

```
#define VRNA_CONVERT_OUTPUT_INT_22 8192U
```

Flag to indicate printing of 2:2 interior loop contribution

VRNA_CONVERT_OUTPUT_BULGE

```
#define VRNA_CONVERT_OUTPUT_BULGE 16384U
```

Flag to indicate printing of bulge loop contribution

VRNA_CONVERT_OUTPUT_INT

```
#define VRNA_CONVERT_OUTPUT_INT 32768U
```

Flag to indicate printing of interior loop contribution

VRNA_CONVERT_OUTPUT_ML

```
#define VRNA_CONVERT_OUTPUT_ML 65536U
```

Flag to indicate printing of multi loop contribution

VRNA_CONVERT_OUTPUT_MISC

```
#define VRNA_CONVERT_OUTPUT_MISC 131072U
```

Flag to indicate printing of misc contributions (such as terminalAU)

VRNA_CONVERT_OUTPUT_SPECIAL_HP

```
#define VRNA_CONVERT_OUTPUT_SPECIAL_HP 262144U
```

Flag to indicate printing of special hairpin contributions (tri-, tetra-, hexa-loops)

VRNA_CONVERT_OUTPUT_VANILLA

```
#define VRNA_CONVERT_OUTPUT_VANILLA 524288U
```

Flag to indicate printing of given parameters only

Note

This option overrides all other output options, except [VRNA_CONVERT_OUTPUT_DUMP](#) !

VRNA_CONVERT_OUTPUT_NINIO

```
#define VRNA_CONVERT_OUTPUT_NINIO 1048576U
```

Flag to indicate printing of interior loop asymmetry contribution

VRNA_CONVERT_OUTPUT_DUMP

```
#define VRNA_CONVERT_OUTPUT_DUMP 2097152U
```

Flag to indicate dumping the energy contributions from the library instead of an input file

9.1.8.3.4.3 Function Documentation**convert_parameter_file()**

```
void convert_parameter_file (
    const char * iname,
    const char * oname,
    unsigned int options )
```

Convert/dump a Vienna 1.8.4 formatted energy parameter file
The options argument allows to control the different output modes.
Currently available options are:

- [VRNA_CONVERT_OUTPUT_ALL](#), [VRNA_CONVERT_OUTPUT_HP](#), [VRNA_CONVERT_OUTPUT_STACK](#)
- [VRNA_CONVERT_OUTPUT_MM_HP](#), [VRNA_CONVERT_OUTPUT_MM_INT](#), [VRNA_CONVERT_OUTPUT_MM_INT_1N](#)

- [VRNA_CONVERT_OUTPUT_MM_INT_23](#), [VRNA_CONVERT_OUTPUT_MM_MULTI](#), [VRNA_CONVERT_OUTPUT_MM_EXT](#)
- [VRNA_CONVERT_OUTPUT_DANGLE5](#), [VRNA_CONVERT_OUTPUT_DANGLE3](#), [VRNA_CONVERT_OUTPUT_INT_11](#)
- [VRNA_CONVERT_OUTPUT_INT_21](#), [VRNA_CONVERT_OUTPUT_INT_22](#), [VRNA_CONVERT_OUTPUT_BULGE](#)
- [VRNA_CONVERT_OUTPUT_INT](#), [VRNA_CONVERT_OUTPUT_ML](#), [VRNA_CONVERT_OUTPUT_MISC](#)
- [VRNA_CONVERT_OUTPUT_SPECIAL_HP](#), [VRNA_CONVERT_OUTPUT_VANILLA](#), [VRNA_CONVERT_OUTPUT_NINIO](#)
- [VRNA_CONVERT_OUTPUT_DUMP](#)

The defined options are fine for bitwise compare- and assignment-operations, e. g.: pass a collection of options as a single value like this:

```
convert_parameter_file(ifile, ofile, option_1 | option_2 | option_n)
```

Parameters

<i>iname</i>	The input file name (If NULL input is read from stdin)
<i>oname</i>	The output file name (If NULL output is written to stdout)
<i>options</i>	The options (as described above)

9.1.9 Energy evaluation

This module contains all functions and variables related to energy evaluation of sequence/structure pairs. Collaboration diagram for Energy evaluation:



Functions

- float [energy_of_structure](#) (const char *string, const char *structure, int verbosity_level)
Calculate the free energy of an already folded RNA using global model detail settings.
- float [energy_of_struct_par](#) (const char *string, const char *structure, [paramT](#) *parameters, int verbosity_level)
Calculate the free energy of an already folded RNA.
- float [energy_of_circ_structure](#) (const char *string, const char *structure, int verbosity_level)
Calculate the free energy of an already folded circular RNA.
- float [energy_of_circ_struct_par](#) (const char *string, const char *structure, [paramT](#) *parameters, int verbosity_level)
Calculate the free energy of an already folded circular RNA.
- int [energy_of_structure_pt](#) (const char *string, short *ptable, short *s, short *s1, int verbosity_level)
Calculate the free energy of an already folded RNA.
- int [energy_of_struct_pt_par](#) (const char *string, short *ptable, short *s, short *s1, [paramT](#) *parameters, int verbosity_level)
Calculate the free energy of an already folded RNA.

Variables

- int **eos_debug**
verbose info from energy_of_struct

9.1.9.1 Detailed Description

This module contains all functions and variables related to energy evaluation of sequence/structure pairs.

9.1.9.2 Function Documentation

9.1.9.2.1 energy_of_structure()

```
float energy_of_structure (
    const char * string,
    const char * structure,
    int verbosity_level )
```

Calculate the free energy of an already folded RNA using global model detail settings.
If verbosity level is set to a value >0, energies of structure elements are printed to stdout

Note

OpenMP: This function relies on several global model settings variables and thus is not to be considered threadsafe. See [energy_of_struct_par\(\)](#) for a completely threadsafe implementation.

See also

[energy_of_struct_par\(\)](#), [energy_of_circ_structure\(\)](#)

Parameters

<i>string</i>	RNA sequence
<i>structure</i>	secondary structure in dot-bracket notation
<i>verbosity_level</i>	a flag to turn verbose output on/off

Returns

the free energy of the input structure given the input sequence in kcal/mol

9.1.9.2.2 energy_of_struct_par()

```
float energy_of_struct_par (
    const char * string,
    const char * structure,
    paramT * parameters,
    int verbosity_level )
```

Calculate the free energy of an already folded RNA.
If verbosity level is set to a value >0, energies of structure elements are printed to stdout

See also

[energy_of_circ_structure\(\)](#), [energy_of_structure_pt\(\)](#), [get_scaled_parameters\(\)](#)

Parameters

<i>string</i>	RNA sequence in uppercase letters
<i>structure</i>	Secondary structure in dot-bracket notation
<i>parameters</i>	A data structure containing the prescaled energy contributions and the model details.
<i>verbosity_level</i>	A flag to turn verbose output on/off

Returns

The free energy of the input structure given the input sequence in kcal/mol

9.1.9.2.3 energy_of_circ_structure()

```
float energy_of_circ_structure (
    const char * string,
    const char * structure,
    int verbosity_level )
```

Calculate the free energy of an already folded circular RNA.

Note

OpenMP: This function relies on several global model settings variables and thus is not to be considered threadsafe. See [energy_of_circ_struct_par\(\)](#) for a completely threadsafe implementation.

If verbosity level is set to a value >0, energies of structure elements are printed to stdout

See also

[energy_of_circ_struct_par\(\)](#), [energy_of_struct_par\(\)](#)

Parameters

<i>string</i>	RNA sequence
<i>structure</i>	Secondary structure in dot-bracket notation
<i>verbosity_level</i>	A flag to turn verbose output on/off

Returns

The free energy of the input structure given the input sequence in kcal/mol

9.1.9.2.4 energy_of_circ_struct_par()

```
float energy_of_circ_struct_par (
    const char * string,
    const char * structure,
    paramT * parameters,
    int verbosity_level )
```

Calculate the free energy of an already folded circular RNA.

If verbosity level is set to a value >0, energies of structure elements are printed to stdout

See also

[energy_of_struct_par\(\)](#), [get_scaled_parameters\(\)](#)

Parameters

<i>string</i>	RNA sequence
<i>structure</i>	Secondary structure in dot-bracket notation
<i>parameters</i>	A data structure containing the prescaled energy contributions and the model details.
<i>verbosity_level</i>	A flag to turn verbose output on/off

Returns

The free energy of the input structure given the input sequence in kcal/mol

9.1.9.2.5 energy_of_structure_pt()

```
int energy_of_structure_pt (
    const char * string,
    short * ptable,
    short * s,
    short * s1,
    int verbosity_level )
```

Calculate the free energy of an already folded RNA.

If verbosity level is set to a value >0, energies of structure elements are printed to stdout

Note

OpenMP: This function relies on several global model settings variables and thus is not to be considered threadsafe. See [energy_of_struct_pt_par\(\)](#) for a completely threadsafe implementation.

See also

[make_pair_table\(\)](#), [energy_of_struct_pt_par\(\)](#)

Parameters

<i>string</i>	RNA sequence
<i>ptable</i>	the pair table of the secondary structure
<i>s</i>	encoded RNA sequence
<i>s1</i>	encoded RNA sequence
<i>verbosity_level</i>	a flag to turn verbose output on/off

Returns

the free energy of the input structure given the input sequence in 10kcal/mol

9.1.9.2.6 energy_of_struct_pt_par()

```
int energy_of_struct_pt_par (
    const char * string,
    short * ptable,
    short * s,
    short * s1,
    paramT * parameters,
    int verbosity_level )
```

Calculate the free energy of an already folded RNA.

If verbosity level is set to a value >0, energies of structure elements are printed to stdout

See also

[make_pair_table\(\)](#), [energy_of_struct_par\(\)](#), [get_scaled_parameters\(\)](#)

Parameters

<i>string</i>	RNA sequence in uppercase letters
<i>ptable</i>	The pair table of the secondary structure
<i>s</i>	Encoded RNA sequence

Parameters

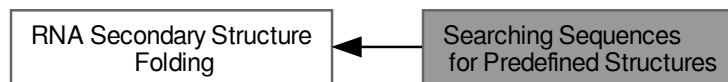
<i>s1</i>	Encoded RNA sequence
<i>parameters</i>	A data structure containing the prescaled energy contributions and the model details.
<i>verbosity_level</i>	A flag to turn verbose output on/off

Returns

The free energy of the input structure given the input sequence in 10kcal/mol

9.1.10 Searching Sequences for Predefined Structures

Collaboration diagram for Searching Sequences for Predefined Structures:



Files

- file [inverse.h](#)
Inverse folding routines.

Functions

- float [inverse_fold](#) (char *start, const char *target)
Find sequences with predefined structure.
- float [inverse_pf_fold](#) (char *start, const char *target)
Find sequence that maximizes probability of a predefined structure.

Variables

- char * **symbolset**
This global variable points to the allowed bases, initially "AUGC". It can be used to design sequences from reduced alphabets.
- float [final_cost](#)
- int [give_up](#)
- int [inv_verbose](#)

9.1.10.1 Detailed Description

We provide two functions that search for sequences with a given structure, thereby inverting the folding routines.

9.1.10.2 Function Documentation

9.1.10.2.1 [inverse_fold\(\)](#)

```
float inverse_fold (
    char * start,
    const char * target )
```

Find sequences with predefined structure.

This function searches for a sequence with minimum free energy structure provided in the parameter 'target', starting with sequence 'start'. It returns 0 if the search was successful, otherwise a structure distance in terms of the energy difference between the search result and the actual target 'target' is returned. The found sequence is returned in 'start'. If [give_up](#) is set to 1, the function will return as soon as it is clear that the search will be unsuccessful, this speeds up the algorithm if you are only interested in exact solutions.

Parameters

<i>start</i>	The start sequence
<i>target</i>	The target secondary structure in dot-bracket notation

Returns

The distance to the target in case a search was unsuccessful, 0 otherwise

9.1.10.2.2 `inverse_pf_fold()`

```
float inverse_pf_fold (
    char * start,
    const char * target )
```

Find sequence that maximizes probability of a predefined structure.

This function searches for a sequence with maximum probability to fold into the provided structure 'target' using the partition function algorithm. It returns $-kT \cdot \log(p)$ where p is the frequency of 'target' in the ensemble of possible structures. This is usually much slower than [inverse_fold\(\)](#).

Parameters

<i>start</i>	The start sequence
<i>target</i>	The target secondary structure in dot-bracket notation

Returns

The distance to the target in case a search was unsuccessful, 0 otherwise

9.1.10.3 Variable Documentation

9.1.10.3.1 `final_cost`

```
float final_cost [extern]
when to stop inverse\_pf\_fold\(\)
```

9.1.10.3.2 `give_up`

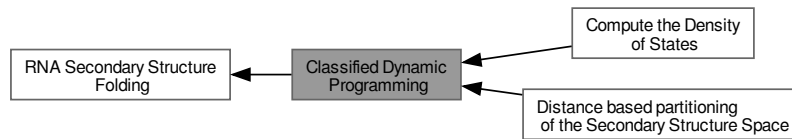
```
int give_up [extern]
default 0: try to minimize structure distance even if no exact solution can be found
```

9.1.10.3.3 `inv_verbose`

```
int inv_verbose [extern]
print out substructure on which inverse\_fold\(\) fails
```

9.1.11 Classified Dynamic Programming

Collaboration diagram for Classified Dynamic Programming:



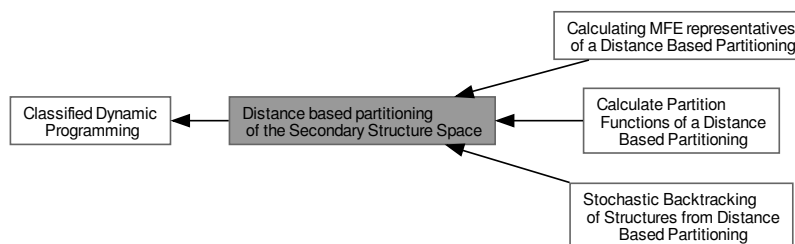
Modules

- [Distance based partitioning of the Secondary Structure Space](#)
Compute Thermodynamic properties for a Distance Class Partitioning of the Secondary Structure Space.
- [Compute the Density of States](#)

9.1.11.1 Detailed Description

9.1.11.2 Distance based partitioning of the Secondary Structure Space

Compute Thermodynamic properties for a Distance Class Partitioning of the Secondary Structure Space.
Collaboration diagram for Distance based partitioning of the Secondary Structure Space:



Modules

- [Calculating MFE representatives of a Distance Based Partitioning](#)
Compute the minimum free energy (MFE) and secondary structures for a partitioning of the secondary structure space according to the base pair distance to two fixed reference structures basepair distance to two fixed reference structures.
- [Calculate Partition Functions of a Distance Based Partitioning](#)
Compute the partition function and stochastically sample secondary structures for a partitioning of the secondary structure space according to the base pair distance to two fixed reference structures.
- [Stochastic Backtracking of Structures from Distance Based Partitioning](#)
Contains functions related to stochastic backtracking from a specified distance class.

9.1.11.2.1 Detailed Description

Compute Thermodynamic properties for a Distance Class Partitioning of the Secondary Structure Space.
All functions related to this group implement the basic recursions for MFE folding, partition function computation and stochastic backtracking with a *classified dynamic programming* approach. The secondary structure space is divided into partitions according to the base pair distance to two given reference structures and all relevant properties are calculated for each of the resulting partitions

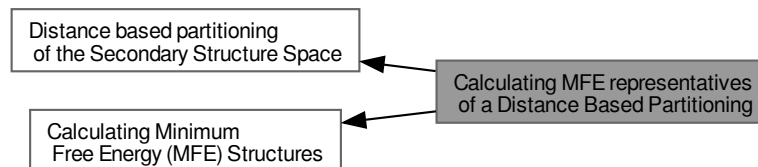
See also

For further details have a look into [8]

9.1.11.2.2 Calculating MFE representatives of a Distance Based Partitioning

Compute the minimum free energy (MFE) and secondary structures for a partitioning of the secondary structure space according to the base pair distance to two fixed reference structures basepair distance to two fixed reference structures.

Collaboration diagram for Calculating MFE representatives of a Distance Based Partitioning:



Files

- file [2Dfold.h](#)

Functions

- `TwoDfold_vars * get_TwoDfold_variables (const char *seq, const char *structure1, const char *structure2, int circ)`
Get a structure of type `TwoDfold_vars` prefilled with current global settings.
- `void destroy_TwoDfold_variables (TwoDfold_vars *our_variables)`
Destroy a `TwoDfold_vars` datastructure without memory loss.
- `TwoDfold_solution * TwoDfoldList (TwoDfold_vars *vars, int distance1, int distance2)`
Compute MFE's and representative for distance partitioning.
- `char * TwoDfold_backtrack_f5 (unsigned int j, int k, int l, TwoDfold_vars *vars)`
Backtrack a minimum free energy structure from a 5' section of specified length.

9.1.11.2.2.1 Detailed Description

Compute the minimum free energy (MFE) and secondary structures for a partitioning of the secondary structure space according to the base pair distance to two fixed reference structures basepair distance to two fixed reference structures.

9.1.11.2.2.2 Function Documentation

`get_TwoDfold_variables()`

```
TwoDfold_vars * get_TwoDfold_variables (
    const char * seq,
    const char * structure1,
    const char * structure2,
    int circ )
```

Get a structure of type `TwoDfold_vars` prefilled with current global settings.

This function returns a datastructure of type `TwoDfold_vars`. The data fields inside the `TwoDfold_vars` are prefilled by global settings and all memory allocations necessary to start a computation are already done for the convenience of the user

Note

Make sure that the reference structures are compatible with the sequence according to Watson-Crick- and Wobble-base pairing

See also

[destroy_TwoDfold_variables\(\)](#), [TwoDfold\(\)](#), [TwoDfold_circ](#)

Parameters

<i>seq</i>	The RNA sequence
<i>structure1</i>	The first reference structure in dot-bracket notation
<i>structure2</i>	The second reference structure in dot-bracket notation
<i>circ</i>	A switch to indicate the assumption to fold a circular instead of linear RNA (0=OFF, 1=ON)

Returns

A datastructure prefilled with folding options and allocated memory

destroy_TwoDfold_variables()

```
void destroy_TwoDfold_variables (
    TwoDfold_vars * our_variables )
```

Destroy a [TwoDfold_vars](#) datastructure without memory loss.

This function free's all allocated memory that depends on the datastructure given.

See also

[get_TwoDfold_variables\(\)](#)

Parameters

<i>our_variables</i>	A pointer to the datastructure to be destroyed
----------------------	--

TwoDfoldList()

```
TwoDfold_solution * TwoDfoldList (
    TwoDfold_vars * vars,
    int distance1,
    int distance2 )
```

Compute MFE's and representative for distance partitioning.

This function computes the minimum free energies and a representative secondary structure for each distance class according to the two references specified in the datastructure 'vars'. The maximum basepair distance to each of both references may be set by the arguments 'distance1' and 'distance2', respectively. If both distance arguments are set to '-1', no restriction is assumed and the calculation is performed for each distance class possible.

The returned list contains an entry for each distance class. If a maximum basepair distance to either of the references was passed, an entry with $k=-1$ will be appended in the list, denoting the class where all structures exceeding the maximum will be thrown into. The end of the list is denoted by an attribute value of INF in the k-attribute of the list entry.

See also

[get_TwoDfold_variables\(\)](#), [destroy_TwoDfold_variables\(\)](#), [TwoDfold_solution](#)

Parameters

<i>vars</i>	the datastructure containing all predefined folding attributes
<i>distance1</i>	maximum distance to reference1 (-1 means no restriction)
<i>distance2</i>	maximum distance to reference2 (-1 means no restriction)

TwoDfold_backtrack_f5()

```
char * TwoDfold_backtrack_f5 (
    unsigned int j,
    int k,
    int l,
    TwoDfold_vars * vars )
```

Backtrack a minimum free energy structure from a 5' section of specified length.

This function allows to backtrack a secondary structure beginning at the 5' end, a specified length and residing in a specific distance class. If the argument 'k' gets a value of -1, the structure that is backtracked is assumed to reside in the distance class where all structures exceeding the maximum basepair distance specified in [TwoDfoldList\(\)](#) belong to.

Note

The argument 'vars' must contain precalculated energy values in the energy matrices, i.e. a call to [TwoDfoldList\(\)](#) preceding this function is mandatory!

See also

[TwoDfoldList\(\)](#), [get_TwoDfold_variables\(\)](#), [destroy_TwoDfold_variables\(\)](#)

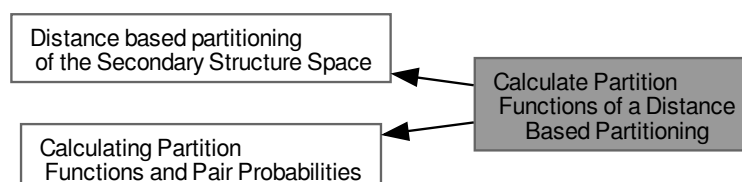
Parameters

<i>j</i>	The length in nucleotides beginning from the 5' end
<i>k</i>	distance to reference1 (may be -1)
<i>l</i>	distance to reference2
<i>vars</i>	the datastructure containing all predefined folding attributes

9.1.11.2.3 Calculate Partition Functions of a Distance Based Partitioning

Compute the partition function and stochastically sample secondary structures for a partitioning of the secondary structure space according to the base pair distance to two fixed reference structures.

Collaboration diagram for Calculate Partition Functions of a Distance Based Partitioning:



Files

- file [2Dpfold.h](#)

Functions

- [TwoDpfold_vars](#) * [get_TwoDpfold_variables](#) (const char *seq, const char *structure1, char *structure2, int circ)
Get a datastructure containing all necessary attributes and global folding switches.
- [TwoDpfold_vars](#) * [get_TwoDpfold_variables_from_MFE](#) ([TwoDfold_vars](#) *mfe_vars)
Get the datastructure containing all necessary attributes and global folding switches from a pre-filled mfe-datastructure.
- void [destroy_TwoDpfold_variables](#) ([TwoDpfold_vars](#) *vars)
Free all memory occupied by a [TwoDpfold_vars](#) datastructure.
- [TwoDpfold_solution](#) * [TwoDpfoldList](#) ([TwoDpfold_vars](#) *vars, int maxDistance1, int maxDistance2)
Compute the partition function for all distance classes.

9.1.11.2.3.1 Detailed Description

Compute the partition function and stochastically sample secondary structures for a partitioning of the secondary structure space according to the base pair distance to two fixed reference structures.

9.1.11.2.3.2 Function Documentation**get_TwoDpfold_variables()**

```
TwoDpfold_vars * get_TwoDpfold_variables (
    const char * seq,
    const char * structure1,
    char * structure2,
    int circ )
```

Get a datastructure containing all necessary attributes and global folding switches.

This function prepares all necessary attributes and matrices etc which are needed for a call of TwoDpfoldList. A snapshot of all current global model switches (dangles, temperature and so on) is done and stored in the returned datastructure. Additionally, all matrices that will hold the partition function values are prepared.

Parameters

<i>seq</i>	the RNA sequence in uppercase format with letters from the alphabet {AUCG}
<i>structure1</i>	the first reference structure in dot-bracket notation
<i>structure2</i>	the second reference structure in dot-bracket notation
<i>circ</i>	a switch indicating if the sequence is linear (0) or circular (1)

Returns

the datastructure containing all necessary partition function attributes

get_TwoDpfold_variables_from_MFE()

```
TwoDpfold_vars * get_TwoDpfold_variables_from_MFE (
    TwoDfold_vars * mfe_vars )
```

Get the datastructure containing all necessary attributes and global folding switches from a pre-filled mfe-datastructure.

This function actually does the same as [get_TwoDpfold_variables](#) but takes its switches and settings from a pre-filled MFE equivalent datastructure

See also

[get_TwoDfold_variables\(\)](#), [get_TwoDpfold_variables\(\)](#)

Parameters

<i>mfe_vars</i>	the pre-filled mfe datastructure
-----------------	----------------------------------

Returns

the datastructure containing all necessary partition function attributes

destroy_TwoDpfold_variables()

```
void destroy_TwoDpfold_variables (
    TwoDpfold_vars * vars )
```

Free all memory occupied by a [TwoDpfold_vars](#) datastructure.

This function free's all memory occupied by a datastructure obtained from from [get_TwoDpfold_variables\(\)](#) or [get_TwoDpfold_variables_from_MFE\(\)](#)

See also

[get_TwoDpfold_variables\(\)](#), [get_TwoDpfold_variables_from_MFE\(\)](#)

Parameters

<i>vars</i>	the datastructure to be free'd
-------------	--------------------------------

TwoDpfoldList()

```
TwoDpfold_solution * TwoDpfoldList (
    TwoDpfold_vars * vars,
    int maxDistance1,
    int maxDistance2 )
```

Compute the partition function for all distance classes.

This function computes the partition functions for all distance classes according the two reference structures specified in the datastructure 'vars'. Similar to [TwoDfoldList\(\)](#) the arguments maxDistance1 and maxDistance2 specify the maximum distance to both reference structures. A value of '-1' in either of them makes the appropriate distance restrictionless, i.e. all basepair distances to the reference are taken into account during computation. In case there is a restriction, the returned solution contains an entry where the attribute k!= -1 contains the partition function for all structures exceeding the restriction. A values of INF in the attribute 'k' of the returned list denotes the end of the list

See also

[get_TwoDpfold_variables\(\)](#), [destroy_TwoDpfold_variables\(\)](#), [TwoDpfold_solution](#)

Parameters

<i>vars</i>	the datastructure containing all necessary folding attributes and matrices
<i>maxDistance1</i>	the maximum basepair distance to reference1 (may be -1)
<i>maxDistance2</i>	the maximum basepair distance to reference2 (may be -1)

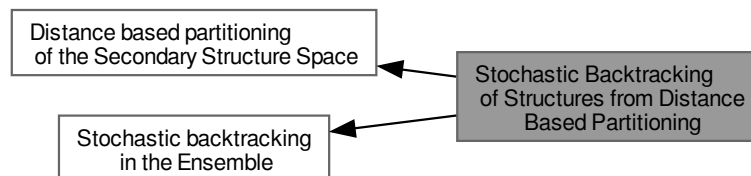
Returns

a list of partition funtions for the appropriate distance classes

9.1.11.2.4 Stochastic Backtracking of Structures from Distance Based Partitioning

Contains functions related to stochastic backtracking from a specified distance class.

Collaboration diagram for Stochastic Backtracking of Structures from Distance Based Partitioning:

**Functions**

- `char * TwoDpfold_pbacktrack (TwoDpfold_vars *vars, int d1, int d2)`
Sample secondary structure representatives from a set of distance classes according to their Boltzmann probability.
- `char * TwoDpfold_pbacktrack5 (TwoDpfold_vars *vars, int d1, int d2, unsigned int length)`
Sample secondary structure representatives with a specified length from a set of distance classes according to their Boltzmann probability.

9.1.11.2.4.1 Detailed Description

Contains functions related to stochastic backtracking from a specified distance class.

9.1.11.2.4.2 Function Documentation**TwoDpfold_pbacktrack()**

```

char * TwoDpfold_pbacktrack (
    TwoDpfold_vars * vars,
    int d1,
    int d2 )
  
```

Sample secondary structure representatives from a set of distance classes according to their Boltzmann probability. If the argument 'd1' is set to '-1', the structure will be backtracked in the distance class where all structures exceeding the maximum basepair distance to either of the references reside.

Precondition

The argument 'vars' must contain precalculated partition function matrices, i.e. a call to `TwoDpfoldList()` preceding this function is mandatory!

See also

[TwoDpfoldList\(\)](#)

Parameters

in	<i>vars</i>	the datastructure containing all necessary folding attributes and matrices
in	<i>d1</i>	the distance to reference1 (may be -1)
in	<i>d2</i>	the distance to reference2

Returns

A sampled secondary structure in dot-bracket notation

TwoDpfold_pbacktrack5()

```
char * TwoDpfold_pbacktrack5 (
    TwoDpfold_vars * vars,
    int d1,
    int d2,
    unsigned int length )
```

Sample secondary structure representatives with a specified length from a set of distance classes according to their Boltzmann probability.

This function does essentially the same as `TwoDpfold_pbacktrack` with the only difference that partial structures, i.e. structures beginning from the 5' end with a specified length of the sequence, are backtracked

Note

This function does not work (since it makes no sense) for circular RNA sequences!

Precondition

The argument 'vars' must contain precalculated partition function matrices, i.e. a call to `TwoDpfoldList()` preceding this function is mandatory!

See also

[TwoDpfold_pbacktrack\(\)](#), [TwoDpfoldList\(\)](#)

Parameters

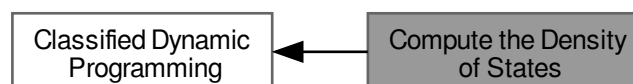
in	<i>vars</i>	the datastructure containing all necessary folding attributes and matrices
in	<i>d1</i>	the distance to reference1 (may be -1)
in	<i>d2</i>	the distance to reference2
in	<i>length</i>	the length of the structure beginning from the 5' end

Returns

A sampled secondary structure in dot-bracket notation

9.1.11.3 Compute the Density of States

Collaboration diagram for Compute the Density of States:

**Variables**

- int [density_of_states](#) [MAXDOS+1]

The Density of States.

9.1.11.3.1 Detailed Description

9.1.11.3.2 Variable Documentation

9.1.11.3.2.1 `density_of_states`

```
int density_of_states[MAXDOS+1]  [extern]
```

The Density of States.

This array contains the density of states for an RNA sequences after a call to [subopt_par\(\)](#), [subopt\(\)](#) or [subopt_circ\(\)](#).

Precondition

Call one of the functions [subopt_par\(\)](#), [subopt\(\)](#) or [subopt_circ\(\)](#) prior accessing the contents of this array

See also

[subopt_par\(\)](#), [subopt\(\)](#), [subopt_circ\(\)](#)

9.2 Parsing and Comparing - Functions to Manipulate Structures

Chapter 10

Data Structure Documentation

10.1 bondT Struct Reference

Base pair.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.1.1 Detailed Description

Base pair.

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.2 bondTEn Struct Reference

Base pair with associated energy.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.2.1 Detailed Description

Base pair with associated energy.

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.3 cofoldF Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- double **F0AB**
Null model without DuplexInit.
- double **FAB**
all states with DuplexInit correction
- double **FcAB**
true hybrid states only
- double **FA**
monomer A
- double **FB**
monomer B

10.3.1 Detailed Description

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.4 ConcEnt Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- double **A0**
start concentration A
- double **B0**
start concentration B
- double **ABc**
End concentration AB.

10.4.1 Detailed Description

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.5 constrain Struct Reference

constraints for cofolding

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.5.1 Detailed Description

constraints for cofolding

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.6 COORDINATE Struct Reference

this is a workaround for the SWIG Perl Wrapper RNA plot function that returns an array of type [COORDINATE](#)

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.6.1 Detailed Description

this is a workaround for the SWIG Perl Wrapper RNA plot function that returns an array of type [COORDINATE](#)

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.7 cpair Struct Reference

this datastructure is used as input parameter in functions of PS_dot.c

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.7.1 Detailed Description

this datastructure is used as input parameter in functions of PS_dot.c

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[data_structures.h](#)

10.8 duplexT Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.8.1 Detailed Description

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[data_structures.h](#)

10.9 dupVar Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.9.1 Detailed Description

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[data_structures.h](#)

10.10 folden Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.10.1 Detailed Description

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[data_structures.h](#)

10.11 interact Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- double * **Pi**
probabilities of interaction
- double * **Gi**
free energies of interaction
- double **Gikjl**
full free energy for interaction between [k,i] $k < i$ in longer seq and [j,l] $j < l$ in shorter seq
- double **Gikjl_wo**
Gikjl without contributions for prob_unpaired.
- int **i**
 $k < i$ in longer seq
- int **k**
 $k < i$ in longer seq
- int **j**
 $j < l$ in shorter seq
- int **l**
 $j < l$ in shorter seq
- int **length**
length of longer sequence

10.11.1 Detailed Description

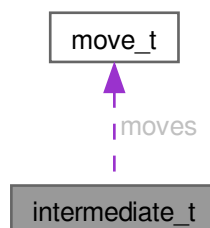
The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.12 intermediate_t Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Collaboration diagram for intermediate_t:



Data Fields

- short * **pt**
pair table
- int **Sen**
saddle energy so far
- int **curr_en**
current energy
- **move_t** * **moves**
remaining moves to target

10.12.1 Detailed Description

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.13 INTERVAL Struct Reference

Sequence interval stack element used in subopt.c.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.13.1 Detailed Description

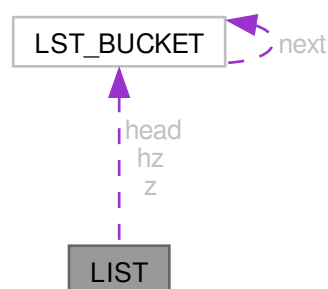
Sequence interval stack element used in subopt.c.

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.14 LIST Struct Reference

Collaboration diagram for LIST:



The documentation for this struct was generated from the following file:

- </homes/brauerei2/ronny/WORK/ViennaRNA/lib/list.h>

10.15 LST_BUCKET Struct Reference

Collaboration diagram for LST_BUCKET:



The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/lib/list.h

10.16 model_detailsT Struct Reference

The data structure that contains the complete model details used throughout the calculations.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- int **dangles**
Specifies the dangle model used in any energy evaluation (0,1,2 or 3)
- int **special_hp**
Include special hairpin contributions for tri, tetra and hexaloops.
- int **noLP**
Only consider canonical structures, i.e. no 'lonely' base pairs.
- int **noGU**
Do not allow GU pairs.
- int **noGUclosure**
Do not allow loops to be closed by GU pair.
- int **logML**
Use logarithmic scaling for multi loops.
- int **circ**
Assume molecule to be circular.
- int **gquad**
Include G-quadruplexes in structure prediction.
- int **canonicalBPonly**
remove non-canonical bp's from constraint structures

10.16.1 Detailed Description

The data structure that contains the complete model details used throughout the calculations.

10.16.2 Field Documentation

10.16.2.1 dangles

```
int model_detailsT::dangles
```

Specifies the dangle model used in any energy evaluation (0,1,2 or 3)

Note

Some function do not implement all dangle model but only a subset of (0,1,2,3). Read the documentaion of the particular recurrences or energy evaluation function for information about the provided dangle model.

The documentation for this struct was generated from the following file:

- [/homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h](#)

10.17 move_t Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.17.1 Detailed Description

The documentation for this struct was generated from the following file:

- [/homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h](#)

10.18 PAIR Struct Reference

Base pair data structure used in subopt.c.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.18.1 Detailed Description

Base pair data structure used in subopt.c.

The documentation for this struct was generated from the following file:

- [/homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h](#)

10.19 pair_info Struct Reference

A base pair info structure.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- unsigned **i**
nucleotide position i
- unsigned **j**
nucleotide position j
- float **p**
Probability.
- float **ent**
*Pseudo entropy for $p(i, j) = S_i + S_j - p_{ij} * \ln(p_{ij})$.*
- short **bp** [8]
Frequencies of pair_types.
- char **comp**
1 iff pair is in mfe structure

10.19.1 Detailed Description

A base pair info structure.

For each base pair (i,j) with i,j in [0, n-1] the structure lists:

- its probability 'p'
- an entropy-like measure for its well-definedness 'ent'
- the frequency of each type of pair in 'bp[]'
 - 'bp[0]' contains the number of non-compatible sequences
 - 'bp[1]' the number of CG pairs, etc.

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.20 pairpro Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Collaboration diagram for pairpro:



10.20.1 Detailed Description

The documentation for this struct was generated from the following file:

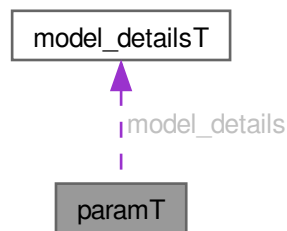
- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.21 paramT Struct Reference

The datastructure that contains temperature scaled energy parameters.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Collaboration diagram for paramT:



Data Fields

- [model_detailsT](#) **model_details**
Model details to be used in the recursions.

10.21.1 Detailed Description

The datastructure that contains temperature scaled energy parameters.
The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.22 path_t Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.22.1 Detailed Description

The documentation for this struct was generated from the following file:

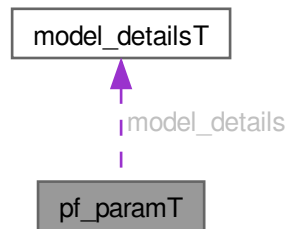
- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.23 pf_paramT Struct Reference

The datastructure that contains temperature scaled Boltzmann weights of the energy parameters.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Collaboration diagram for pf_paramT:



Data Fields

- double **pf_scale**
Scaling factor to avoid over-/underflows.
- double **temperature**
Temperature used for loop contribution scaling.
- double **alpha**
Scaling factor for the thermodynamic temperature.
- **model_detailsT model_details**
Model details to be used in the recursions.

10.23.1 Detailed Description

The datastructure that contains temperature scaled Boltzmann weights of the energy parameters.

10.23.2 Field Documentation

10.23.2.1 alpha

```
double pf_paramT::alpha
```

Scaling factor for the thermodynamic temperature.

This allows for temperature scaling in Boltzmann factors independently from the energy contributions. The resulting Boltzmann factors are then computed by $e^{-E/(\alpha \cdot K \cdot T)}$

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.24 plist Struct Reference

this datastructure is used as input parameter in functions of [PS_dot.h](#) and others

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.24.1 Detailed Description

this datastructure is used as input parameter in functions of [PS_dot.h](#) and others

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.25 Postorder_list Struct Reference

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/dist_vars.h

10.26 pu_contrib Struct Reference

contributions to p_u

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- double ** **H**
hairpin loops
- double ** **I**
interior loops
- double ** **M**
multi loops
- double ** **E**
exterior loop
- int **length**
length of the input sequence
- int **w**
longest unpaired region

10.26.1 Detailed Description

contributions to p_u

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.27 pu_out Struct Reference

Collection of all free_energy of beeing unpaired values for output.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- int **len**
sequence length
- int **u_vals**
number of different -u values
- int **contribs**
[-c "SHIME"]
- char ** **header**
header line
- double ** **u_values**
*(the -u values * [-c "SHIME"]) * seq len*

10.27.1 Detailed Description

Collection of all free_energy of beeing unpaired values for output.

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.28 sect Struct Reference

Stack of partial structures for backtracking.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.28.1 Detailed Description

Stack of partial structures for backtracking.

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[data_structures.h](#)

10.29 snoopT Struct Reference

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

10.29.1 Detailed Description

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[data_structures.h](#)

10.30 SOLUTION Struct Reference

Solution element from subopt.c.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- float **energy**
Free Energy of structure in kcal/mol.
- char * **structure**
Structure in dot-bracket notation.

10.30.1 Detailed Description

Solution element from subopt.c.

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[data_structures.h](#)

10.31 struct_en Struct Reference

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[move_set.h](#)

10.32 svm_model Struct Reference

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/[svm_utils.h](#)

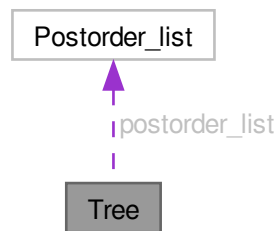
10.33 swString Struct Reference

The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/dist_vars.h

10.34 Tree Struct Reference

Collaboration diagram for Tree:



The documentation for this struct was generated from the following file:

- /homes/brauerei2/ronny/WORK/ViennaRNA/H/dist_vars.h

10.35 TwoDfold_solution Struct Reference

Solution element returned from TwoDfoldList.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- int **k**
Distance to first reference.
- int **l**
Distance to second reference.
- float **en**
Free energy in kcal/mol.
- char * **s**
MFE representative structure in dot-bracket notation.

10.35.1 Detailed Description

Solution element returned from TwoDfoldList.

This element contains free energy and structure for the appropriate kappa (k), lambda (l) neighborhood. The data-structure contains two integer attributes 'k' and 'l' as well as an attribute 'en' of type float representing the free energy in kcal/mol and an attribute 's' of type char* containing the secondary structure representative. A value of INF in k denotes the end of a list.

See also

[TwoDfoldList\(\)](#)

The documentation for this struct was generated from the following file:

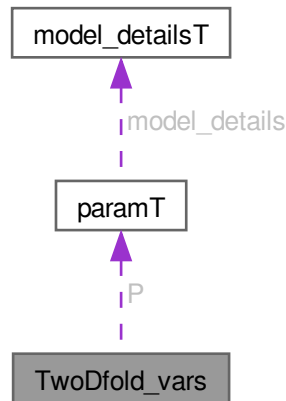
- /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

10.36 TwoDfold_vars Struct Reference

Variables compound for 2Dfold MFE folding.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Collaboration diagram for TwoDfold_vars:



Data Fields

- **paramT** * **P**
Precomputed energy parameters and model details.
- int **do_backtrack**
Flag whether to do backtracing of the structure(s) or not.
- char * **ptype**
Precomputed array of pair types.
- char * **sequence**
The input sequence
- short * **S1**
The input sequences in numeric form.
- unsigned int **maxD1**
Maximum allowed base pair distance to first reference.
- unsigned int **maxD2**
Maximum allowed base pair distance to second reference.
- unsigned int * **mm1**
Maximum matching matrix, reference struct 1 disallowed.
- unsigned int * **mm2**
Maximum matching matrix, reference struct 2 disallowed.
- int * **my_iindx**
Index for moving in quadratic distancy dimensions.
- unsigned int * **referenceBPs1**
Matrix containing number of basepairs of reference structure1 in interval [i,j].
- unsigned int * **referenceBPs2**
Matrix containing number of basepairs of reference structure2 in interval [i,j].
- unsigned int * **bpdist**
Matrix containing base pair distance of reference structure 1 and 2 on interval [i,j].

10.36.1 Detailed Description

Variables compound for 2Dfold MFE folding.

See also

[get_TwoDfold_variables\(\)](#), [destroy_TwoDfold_variables\(\)](#), [TwoDfoldList\(\)](#)

The documentation for this struct was generated from the following file:

- [/homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h](#)

10.37 TwoDpfold_solution Struct Reference

Solution element returned from TwoDpfoldList.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Data Fields

- int **k**
Distance to first reference.
- int **l**
Distance to second reference.
- double **q**
partition function

10.37.1 Detailed Description

Solution element returned from TwoDpfoldList.

This element contains the partition function for the appropriate kappa (k), lambda (l) neighborhood. The datastructure contains two integer attributes 'k' and 'l' as well as an attribute 'q' of type FLT_OR_DBL.

A value of INF in k denotes the end of a list.

See also

[TwoDpfoldList\(\)](#)

The documentation for this struct was generated from the following file:

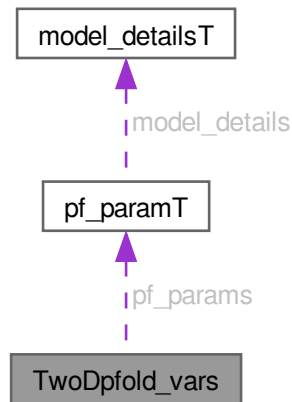
- [/homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h](#)

10.38 TwoDpfold_vars Struct Reference

Variables compound for 2Dfold partition function folding.

```
#include </homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h>
```

Collaboration diagram for TwoDpfold_vars:



Data Fields

- char * **ptype**
Precomputed array of pair types.
- char * **sequence**
The input sequence
- short * **S1**
The input sequences in numeric form.
- unsigned int **maxD1**
Maximum allowed base pair distance to first reference.
- unsigned int **maxD2**
Maximum allowed base pair distance to second reference.
- int * **my_iindx**
Index for moving in quadratic distance dimensions.
- int * **jindx**
Index for moving in the triangular matrix qm1.
- unsigned int * **referenceBPs1**
Matrix containing number of basepairs of reference structure1 in interval [i,j].
- unsigned int * **referenceBPs2**
Matrix containing number of basepairs of reference structure2 in interval [i,j].
- unsigned int * **bpdist**
Matrix containing base pair distance of reference structure 1 and 2 on interval [i,j].
- unsigned int * **mm1**
Maximum matching matrix, reference struct 1 disallowed.
- unsigned int * **mm2**
Maximum matching matrix, reference struct 2 disallowed.

10.38.1 Detailed Description

Variables compound for 2Dfold partition function folding.

See also

[get_TwoDpfold_variables\(\)](#), [get_TwoDpfold_variables_from_MFE\(\)](#), [destroy_TwoDpfold_variables\(\)](#), [TwoDpfoldList\(\)](#)

The documentation for this struct was generated from the following file:

- [/homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h](#)

Chapter 11

File Documentation

11.1 mainpage.h

```
00001 /*
00002 #####
00003 # The next comment is used to order the modules correctly #
00004 #####
00005 */
00006
00108 /*
00109 #####
00110 # Now the mainpage text is following #
00111 #####
00112 */
00113
00327 { 0, 2, 2, 2, 2, 1, 1}, /* Null replaced */
00328 { 2, 0, 2, 2, 2, INF, INF}, /* H replaced */
00329 { 2, 2, 0, 1, 2, INF, INF}, /* B replaced */
00330 { 2, 2, 1, 0, 2, INF, INF}, /* I replaced */
00331 { 2, 2, 2, 2, 2, 0, INF, INF}, /* M replaced */
00332 { 1, INF, INF, INF, INF, 0, INF}, /* S replaced */
00333 { 1, INF, INF, INF, INF, INF, 0}, /* E replaced */
00334
00335
00336 /* Null, H, B, I, M, S, E */
00337 { 0, 100, 5, 5, 75, 5, 5}, /* Null replaced */
00338 { 100, 0, 8, 8, 8, INF, INF}, /* H replaced */
00339 { 5, 8, 0, 3, 8, INF, INF}, /* B replaced */
00340 { 5, 8, 3, 0, 8, INF, INF}, /* I replaced */
00341 { 75, 8, 8, 8, 0, INF, INF}, /* M replaced */
00342 { 5, INF, INF, INF, INF, 0, INF}, /* S replaced */
00343 { 5, INF, INF, INF, INF, INF, 0}, /* E replaced */
00344 \endverbatim
00345
00346 The lower matrix uses the costs given in \cite shapiro:1990.
00347 All distance functions use the following global variables:
00348
00349 \verbatim
00350 int cost_matrix;
00351 \endverbatim
00352 \copybrief cost_matrix
00353
00354 \verbatim
00355 int edit_backtrack;
00356 \endverbatim
00357 \copybrief edit_backtrack
00358
00359 \verbatim
00360 char *aligned_line[4];
00361 \endverbatim
00362 \copybrief aligned_line
00363
00364 \see utils.h, dist_vars.h and stringdist.h for more details
00365
00366 <h3>Functions for Tree Edit Distances</h3>
00367
00368 \verbatim
00369 Tree *make_tree (char *struc)
00370 \endverbatim
00371 \copybrief make_tree()
00372
00373 \verbatim
00374 float tree_edit_distance (Tree *T1,
00375                             Tree *T2)
00376 \endverbatim
```

```

00377 \copybrief tree_edit_distance()
00378
00379 \verbatim
00380 void free_tree(Tree *t)
00381 \endverbatim
00382 \copybrief free_tree()
00383
00384 \see dist_vars.h and treedist.h for prototypes and more detailed descriptions
00385
00386 <h3>Functions for String Alignment</h3>
00387
00388 \verbatim
00389 swString *Make_swString (char *string)
00390 \endverbatim
00391 \copybrief Make_swString()
00392
00393 \verbatim
00394 float string_edit_distance (swString *T1,
00395                             swString *T2)
00396 \endverbatim
00397 \copybrief string_edit_distance()
00398
00399 \see dist_vars.h and stringdist.h for prototypes and more detailed descriptions
00400
00401 <h3>Functions for Comparison of Base Pair Probabilities</h3>
00402
00403 For comparison of base pair probability matrices, the matrices are first
00404 condensed into probability profiles which are then compared by alignment.
00405
00406 \verbatim
00407 float *Make_bp_profile_bppm ( double *bppm,
00408                              int length)
00409 \endverbatim
00410 \copybrief Make_bp_profile_bppm()
00411
00412 \verbatim
00413 float profile_edit_distance ( const float *T1,
00414                              const float *T2)
00415 \endverbatim
00416 \copybrief profile_edit_distance()
00417
00418 \see ProfileDist.h for prototypes and more details of the above functions
00419
00420 \ref mp_utils "Next Page: Utilities"
00421
00422 \page mp_utils Utilities - Odds and Ends
00423
00424 \anchor toc
00425
00426 <h3>Table of Contents</h3>
00427 <hr>
00428
00429 \li \ref utils_ss
00430 \li \ref utils_dot
00431 \li \ref utils_aln
00432 \li \ref utils_seq
00433 \li \ref utils_struc
00434 \li \ref utils_misc
00435
00436 <hr>
00437
00438 \section utils_ss Producing secondary structure graphs
00439
00440 \verbatim
00441 int PS_rna_plot ( char *string,
00442                  char *structure,
00443                  char *file)
00444 \endverbatim
00445 \copybrief PS_rna_plot()
00446
00447 \verbatim
00448 int PS_rna_plot_a (
00449     char *string,
00450     char *structure,
00451     char *file,
00452     char *pre,
00453     char *post)
00454 \endverbatim
00455 \copybrief PS_rna_plot_a()
00456
00457 \verbatim
00458 int gmlRNA (char *string,
00459             char *structure,
00460             char *ssfile,
00461             char option)
00462 \endverbatim
00463 \copybrief gmlRNA()

```

```

00464
00465 \verbatim
00466 int ssv_rna_plot (char *string,
00467                  char *structure,
00468                  char *ssfile)
00469 \endverbatim
00470 \copybrief ssv_rna_plot ()
00471
00472 \verbatim
00473 int svg_rna_plot (char *string,
00474                  char *structure,
00475                  char *ssfile)
00476 \endverbatim
00477 \copybrief svg_rna_plot ()
00478
00479 \verbatim
00480 int xrna_plot ( char *string,
00481               char *structure,
00482               char *ssfile)
00483 \endverbatim
00484 \copybrief xrna_plot ()
00485
00486 \verbatim
00487 int rna_plot_type
00488 \endverbatim
00489 \copybrief rna_plot_type
00490
00491 Two low-level functions provide direct access to the graph lauyouting
00492 algorithms:
00493
00494 \verbatim
00495 int simple_xy_coordinates ( short *pair_table,
00496                            float *X,
00497                            float *Y)
00498 \endverbatim
00499 \copybrief simple_xy_coordinates ()
00500
00501 \verbatim
00502 int naview_xy_coordinates ( short *pair_table,
00503                            float *X,
00504                            float *Y)
00505 \endverbatim
00506 \copybrief naview_xy_coordinates ()
00507
00508 \see PS_dot.h and naview.h for more detailed descriptions.
00509
00510 \htmlonly
00511 <hr>
00512 <a href="#toc">Table of Contents</a>
00513 <hr>
00514 \endhtmlonly
00515
00516 \section utils_dot Producing (colored) dot plots for base pair probabilities
00517
00518 \verbatim
00519 int PS_color_dot_plot ( char *string,
00520                       cpair *pi,
00521                       char *filename)
00522 \endverbatim
00523 \copybrief PS_color_dot_plot ()
00524
00525 \verbatim
00526 int PS_color_dot_plot_turn (char *seq,
00527                             cpair *pi,
00528                             char *filename,
00529                             int winSize)
00530 \endverbatim
00531 \copybrief PS_color_dot_plot_turn ()
00532
00533 \verbatim
00534 int PS_dot_plot_list (char *seq,
00535                      char *filename,
00536                      plist *pl,
00537                      plist *mf,
00538                      char *comment)
00539 \endverbatim
00540 \copybrief PS_dot_plot_list ()
00541
00542 \verbatim
00543 int PS_dot_plot_turn (char *seq,
00544                      struct plist *pl,
00545                      char *filename,
00546                      int winSize)
00547 \endverbatim
00548 \copybrief PS_dot_plot_turn ()
00549
00550 \see PS_dot.h for more detailed descriptions.

```

```

00551
00552 \section utils_aln Producing (colored) alignments
00553
00554 \verbatim
00555 int PS_color_aln (
00556     const char *structure,
00557     const char *filename,
00558     const char *seqs[],
00559     const char *names[])
00560 \endverbatim
00561 \copybrief PS_color_aln()
00562
00563 \htmlonly
00564 <hr>
00565 <a href="#toc">Table of Contents</a>
00566 <hr>
00567 \endhtmlonly
00568
00569 \section utils_seq RNA sequence related utilities
00570
00571 Several functions provide useful applications to RNA sequences
00572
00573 \verbatim
00574 char *random_string (int l,
00575     const char symbols[])
00576 \endverbatim
00577 \copybrief random_string()
00578
00579 \verbatim
00580 int hamming ( const char *s1,
00581     const char *s2)
00582 \endverbatim
00583 \copybrief hamming()
00584
00585 \verbatim
00586 void str_DNA2RNA(char *sequence);
00587 \endverbatim
00588 \copybrief str_DNA2RNA()
00589
00590 \verbatim
00591 void str_uppercase(char *sequence);
00592 \endverbatim
00593 \copybrief str_uppercase()
00594
00595 \htmlonly
00596 <hr>
00597 <a href="#toc">Table of Contents</a>
00598 <hr>
00599 \endhtmlonly
00600
00601 \section utils_struct RNA secondary structure related utilities
00602
00603 \verbatim
00604 char *pack_structure (const char *struc)
00605 \endverbatim
00606 \copybrief pack_structure()
00607
00608 \verbatim
00609 char *unpack_structure (const char *packed)
00610 \endverbatim
00611 \copybrief unpack_structure()
00612
00613 \verbatim
00614 short *make_pair_table (const char *structure)
00615 \endverbatim
00616 \copybrief make_pair_table()
00617
00618 \verbatim
00619 short *copy_pair_table (const short *pt)
00620 \endverbatim
00621 \copybrief copy_pair_table()
00622
00623 \htmlonly
00624 <hr>
00625 <a href="#toc">Table of Contents</a>
00626 <hr>
00627 \endhtmlonly
00628
00629 \section utils_misc Miscellaneous Utilities
00630
00631 \verbatim
00632 void print_tty_input_seq (void)
00633 \endverbatim
00634 \copybrief print_tty_input_seq()
00635
00636 \verbatim
00637 void print_tty_constraint_full (void)

```

```
00638 \endverbatim
00639 \copybrief print_tty_constraint_full()
00640
00641 \verbatim
00642 void print_tty_constraint (unsigned int option)
00643 \endverbatim
00644 \copybrief print_tty_constraint()
00645
00646 \verbatim
00647 int *get_iindx (unsigned int length)
00648 \endverbatim
00649 \copybrief get_iindx()
00650
00651 \verbatim
00652 int *get_indx (unsigned int length)
00653 \endverbatim
00654 \copybrief get_indx()
00655
00656 \verbatim
00657 void constrain_ptypes (
00658     const char *constraint,
00659     unsigned int length,
00660     char *ptype,
00661     int *BP,
00662     int min_loop_size,
00663     unsigned int idx_type)
00664 \endverbatim
00665 \copybrief constrain_ptypes()
00666
00667 \verbatim
00668 char *get_line(FILE *fp);
00669 \endverbatim
00670 \copybrief get_line()
00671
00672 \verbatim
00673 unsigned int read_record(
00674     char **header,
00675     char **sequence,
00676     char ***rest,
00677     unsigned int options);
00678 \endverbatim
00679 \copybrief read_record()
00680
00681 \verbatim
00682 char *time_stamp (void)
00683 \endverbatim
00684 \copybrief time_stamp()
00685
00686 \verbatim
00687 void warn_user (const char message[])
00688 \endverbatim
00689 \copybrief warn_user()
00690
00691 \verbatim
00692 void nrerror (const char message[])
00693 \endverbatim
00694 \copybrief nrerror()
00695
00696 \verbatim
00697 void init_rand (void)
00698 \endverbatim
00699 \copybrief init_rand()
00700
00701 \verbatim
00702 unsigned short xsubi[3];
00703 \endverbatim
00704 \copybrief xsubi
00705
00706 \verbatim
00707 double urn (void)
00708 \endverbatim
00709 \copybrief urn()
00710
00711 \verbatim
00712 int int_urn (int from, int to)
00713 \endverbatim
00714 \copybrief int_urn()
00715
00716 \verbatim
00717 void *space (unsigned size)
00718 \endverbatim
00719 \copybrief space()
00720
00721 \verbatim
00722 void *xrealloc ( void *p,
00723     unsigned size)
00724 \endverbatim
```

```

00725 \copybrief xrealloc()
00726
00727 \see utils.h for a complete overview and detailed description of the utility functions
00728
00729 \htmlonly
00730 <hr>
00731 <a href="#toc">Table of Contents</a>
00732 <hr>
00733 \endhtmlonly
00734
00735 \ref mp_example "Next Page: Examples"
00736
00737 \page mp_example Example - A Small Example Program
00738
00739 The following program exercises most commonly used functions of the library.
00740 The program folds two sequences using both the mfe and partition function
00741 algorithms and calculates the tree edit and profile distance of the
00742 resulting structures and base pairing probabilities.
00743
00744 \code{.c}
00745 #include <stdio.h>
00746 #include <stdlib.h>
00747 #include <math.h>
00748 #include <string.h>
00749 #include "utils.h"
00750 #include "fold_vars.h"
00751 #include "fold.h"
00752 #include "part_func.h"
00753 #include "inverse.h"
00754 #include "RNAstruct.h"
00755 #include "treedist.h"
00756 #include "stringdist.h"
00757 #include "profiledist.h"
00758
00759 void main()
00760 {
00761     char *seq1="CGCAGGGGAUACCCGCG", *seq2="GCGCCCAUAGGGACGC",
00762         *struct1,* struct2,* xstruc;
00763     float e1, e2, tree_dist, string_dist, profile_dist, kT;
00764     Tree *T1, *T2;
00765     swString *S1, *S2;
00766     float *pf1, *pf2;
00767     FLT_OR_DBL *bppm;
00768     /* fold at 30C instead of the default 37C */
00769     temperature = 30.; /* must be set *before* initializing */
00770
00771     /* allocate memory for structure and fold */
00772     struct1 = (char* ) space(sizeof(char)*(strlen(seq1)+1));
00773     e1 = fold(seq1, struct1);
00774
00775     struct2 = (char* ) space(sizeof(char)*(strlen(seq2)+1));
00776     e2 = fold(seq2, struct2);
00777
00778     free_arrays(); /* free arrays used in fold() */
00779
00780     /* produce tree and string representations for comparison */
00781     xstruc = expand_Full(struct1);
00782     T1 = make_tree(xstruc);
00783     S1 = Make_swString(xstruc);
00784     free(xstruc);
00785
00786     xstruc = expand_Full(struct2);
00787     T2 = make_tree(xstruc);
00788     S2 = Make_swString(xstruc);
00789     free(xstruc);
00790
00791     /* calculate tree edit distance and aligned structures with gaps */
00792     edit_backtrack = 1;
00793     tree_dist = tree_edit_distance(T1, T2);
00794     free_tree(T1); free_tree(T2);
00795     unexpand_aligned_F(aligned_line);
00796     printf("%s\n%s %3.2f\n", aligned_line[0], aligned_line[1], tree_dist);
00797
00798     /* same thing using string edit (alignment) distance */
00799     string_dist = string_edit_distance(S1, S2);
00800     free(S1); free(S2);
00801     printf("%s mfe=%5.2f\n%s mfe=%5.2f dist=%3.2f\n",
00802         aligned_line[0], e1, aligned_line[1], e2, string_dist);
00803
00804     /* for longer sequences one should also set a scaling factor for
00805     partition function folding, e.g: */
00806     kT = (temperature+273.15)*1.98717/1000.; /* kT in kcal/mol */
00807     pf_scale = exp(-e1/kT/strlen(seq1));
00808
00809     /* calculate partition function and base pair probabilities */
00810     e1 = pf_fold(seq1, struct1);
00811     /* get the base pair probability matrix for the previous run of pf_fold() */

```

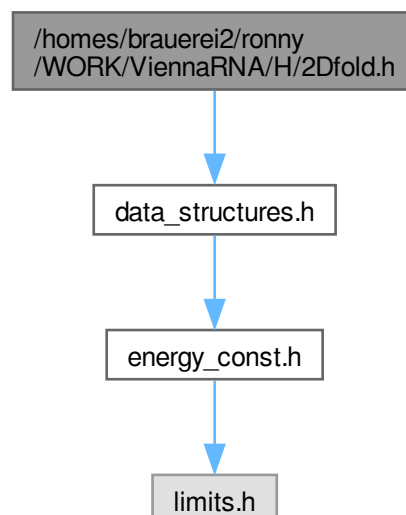
```

00812     bppm = export_bppm();
00813     pf1 = Make_bp_profile_bppm(bppm, strlen(seq1));
00814
00815     e2 = pf_fold(seq2, struct2);
00816     /* get the base pair probability matrix for the previous run of pf_fold() */
00817     bppm = export_bppm();
00818     pf2 = Make_bp_profile_bppm(bppm, strlen(seq2));
00819
00820     free_pf_arrays(); /* free space allocated for pf_fold() */
00821
00822     profile_dist = profile_edit_distance(pf1, pf2);
00823     printf("%s free energy=%5.2f\n%s free energy=%5.2f dist=%3.2f\n",
00824           aligned_line[0], e1, aligned_line[1], e2, profile_dist);
00825
00826     free_profile(pf1); free_profile(pf2);
00827 }
00828 \endcode
00829
00830 In a typical Unix environment you would compile this program using:
00831 \verbatim
00832 cc ${OPENMP_CFLAGS} -c example.c -I${hpath}
00833 \endverbatim
00834 and link using
00835 \verbatim
00836 cc ${OPENMP_CFLAGS} -o example -L${lpath} -lRNA -lm
00837 \endverbatim
00838 where \e ${hpath} and \e ${lpath} point to the location of the header
00839 files and library, respectively.
00840 \note As default, the RNAlib is compiled with build-in \e OpenMP multithreading
00841 support. Thus, when linking your own object files to the library you have to pass
00842 the compiler specific \e ${OPENMP_CFLAGS} (e.g. '-fopenmp' for \b gcc) even if your code does not
00843 use openmp specific code. However, in that case the \e OpenMP flags may be omitted when compiling
00844 example.c
00845
00846
00847 **/
00848

```

11.2 /homes/brauerei2/ronny/WORK/ViennaRNA/H/2Dfold.h File Reference

Include dependency graph for 2Dfold.h:



Functions

- `TwoDfold_vars * get_TwoDfold_variables` (const char *seq, const char *structure1, const char *structure2, int circ)
Get a structure of type `TwoDfold_vars` prefilled with current global settings.
- void `destroy_TwoDfold_variables` (`TwoDfold_vars` *our_variables)
Destroy a `TwoDfold_vars` datastructure without memory loss.
- `TwoDfold_solution * TwoDfoldList` (`TwoDfold_vars` *vars, int distance1, int distance2)
Compute MFE's and representative for distance partitioning.
- char * `TwoDfold_backtrack_f5` (unsigned int j, int k, int l, `TwoDfold_vars` *vars)
Backtrack a minimum free energy structure from a 5' section of specified length.

11.3 2Dfold.h

[Go to the documentation of this file.](#)

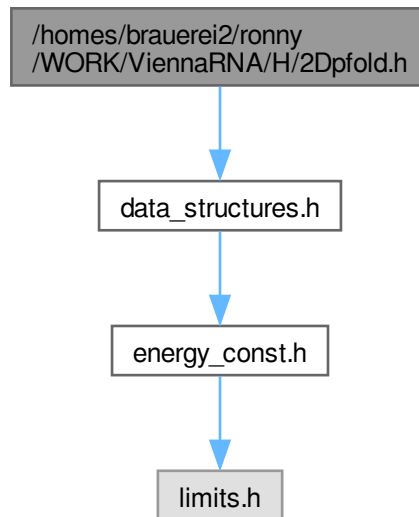
```

00001 /*
00002     minimum free energy
00003     RNA secondary structure with
00004     basepair distance d to reference structure prediction
00005 */
00006 */
00007 #ifndef __VIENNA_RNA_PACKAGE_TWO_D_FOLD_H__
00008 #define __VIENNA_RNA_PACKAGE_TWO_D_FOLD_H__
00009
00032 #include "data_structures.h"
00033
00034 #ifdef __GNUC__
00035 #define DEPRECATED(func) func __attribute__((deprecated))
00036 #else
00037 #define DEPRECATED(func) func
00038 #endif
00039
00057 TwoDfold_vars *get_TwoDfold_variables(const char *seq,
00058                                     const char *structure1,
00059                                     const char *structure2,
00060                                     int circ);
00061
00071 void destroy_TwoDfold_variables(TwoDfold_vars *our_variables);
00072
00076 DEPRECATED(TwoDfold_solution **TwoDfold(TwoDfold_vars *our_variables,
00077                                     int distance1,
00078                                     int distance2));
00079
00104 TwoDfold_solution *TwoDfoldList(TwoDfold_vars *vars,
00105                                 int distance1,
00106                                 int distance2);
00107
00126 char *TwoDfold_backtrack_f5(unsigned int j,
00127                             int k,
00128                             int l,
00129                             TwoDfold_vars *vars);
00130
00134 #endif

```


11.4 /homes/brauerei2/ronny/WORK/ViennaRNA/H/2Dpfold.h File Reference

Include dependency graph for 2Dpfold.h:



Functions

- `TwoDpfold_vars * get_TwoDpfold_variables` (const char *seq, const char *structure1, char *structure2, int circ)
Get a datastructure containing all necessary attributes and global folding switches.
- `TwoDpfold_vars * get_TwoDpfold_variables_from_MFE` (TwoDpfold_vars *mfe_vars)
Get the datastructure containing all necessary attributes and global folding switches from a pre-filled mfe-datastructure.
- void `destroy_TwoDpfold_variables` (TwoDpfold_vars *vars)
Free all memory occupied by a `TwoDpfold_vars` datastructure.
- `TwoDpfold_solution * TwoDpfoldList` (TwoDpfold_vars *vars, int maxDistance1, int maxDistance2)
Compute the partition function for all distance classes.
- char * `TwoDpfold_pbacktrack` (TwoDpfold_vars *vars, int d1, int d2)
Sample secondary structure representatives from a set of distance classes according to their Boltzmann probability.
- char * `TwoDpfold_pbacktrack5` (TwoDpfold_vars *vars, int d1, int d2, unsigned int length)
Sample secondary structure representatives with a specified length from a set of distance classes according to their Boltzmann probability.

11.5 2Dpfold.h

[Go to the documentation of this file.](#)

```

00001 /*
00002     minimum free energy
00003     RNA secondary structure with
00004     basepair distance d to reference structure prediction
00005
00006 */
00007 #ifndef __VIENNA_RNA_PACKAGE_TWO_D_PF_FOLD_H__

```

```

00008 #define __VIENNA_RNA_PACKAGE_TWO_D_PF_FOLD_H__
00009
00010 #include "data_structures.h"
00011
00012 #ifdef __GNUC__
00013 #define DEPRECATED(func) func __attribute__((deprecated))
00014 #else
00015 #define DEPRECATED(func) func
00016 #endif
00017
00042 TwoDpfold_vars *get_TwoDpfold_variables( const char *seq,
00043                                           const char *structure1,
00044                                           char *structure2,
00045                                           int circ);
00046
00059 TwoDpfold_vars *get_TwoDpfold_variables_from_MFE(TwoDpfold_vars *mfe_vars);
00060
00071 void destroy_TwoDpfold_variables(TwoDpfold_vars *vars);
00072
00094 TwoDpfold_solution *TwoDpfoldList( TwoDpfold_vars *vars,
00095                                     int maxDistance1,
00096                                     int maxDistance2);
00097 /* End of group kl_neighborhood_pf */
00099
00123 char *TwoDpfold_pbacktrack(TwoDpfold_vars *vars,
00124                             int d1,
00125                             int d2);
00126
00146 char *TwoDpfold_pbacktrack5( TwoDpfold_vars *vars,
00147                               int d1,
00148                               int d2,
00149                               unsigned int length);
00150 /* End of group kl_neighborhood_stochbt */
00152
00158 DEPRECATED (FLT_OR_DBL **TwoDpfold(TwoDpfold_vars *our_variables,
00159                                     int maxDistance1,
00160                                     int maxDistance2));
00161
00167 DEPRECATED (FLT_OR_DBL **TwoDpfold_circ(
00168             TwoDpfold_vars *our_variables,
00169             int maxDistance1,
00170             int maxDistance2));
00171
00172
00173 #endif

```

11.6 ali_plex.h

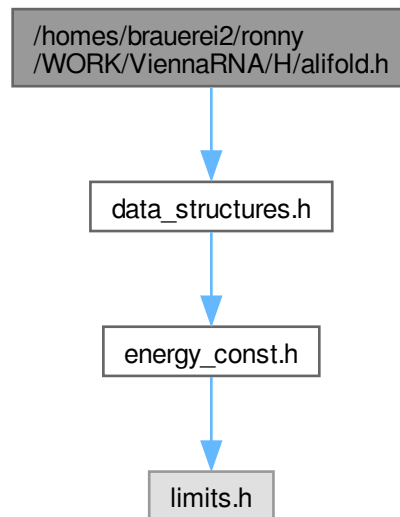
```

00001 #ifndef __VIENNA_RNA_PACKAGE_ALI_PLEX_H__
00002 #define __VIENNA_RNA_PACKAGE_ALI_PLEX_H__
00003
00004 #include "data_structures.h"
00008 duplexT** aliLduplexfold( const char *s1[],
00009                           const char *s2[],
00010                           const int threshold,
00011                           const int extension_cost,
00012                           const int alignment_length,
00013                           const int delta,
00014                           const int fast,
00015                           const int il_a,
00016                           const int il_b,
00017                           const int b_a,
00018                           const int b_b);
00022 duplexT** aliLduplexfold_XS(const char* s1[],
00023                             const char* s2[],
00024                             const int **access_s1,
00025                             const int **access_s2,
00026                             const int threshold,
00027                             const int alignment_length,
00028                             const int delta,
00029                             const int fast,
00030                             const int il_a,
00031                             const int il_b,
00032                             const int b_a,
00033                             const int b_b);
00034
00035 /*
00036 extern duplexT aliduplexfold(const char *s1[], const char *s2[], const int extension_cost);
00037 extern duplexT aliduplexfold_XS(const char *s1[], const char *s2[],const int **access_s1,
00038                                const int **access_s2, const int i_pos, const int j_pos, const int threshold);
00039 */
00040 #endif

```

11.7 /homes/brauerei2/ronny/WORK/ViennaRNA/H/alifold.h File Reference

compute various properties (consensus MFE structures, partition function, Boltzmann distributed stochastic samples, ...) for RNA sequence alignments
 Include dependency graph for alifold.h:



Functions

- void [update_alifold_params](#) (void)
Update the energy parameters for alifold function.
- float [alifold](#) (const char **strings, char *structure)
Compute MFE and according consensus structure of an alignment of sequences.
- float [circularifold](#) (const char **strings, char *structure)
Compute MFE and according structure of an alignment of sequences assuming the sequences are circular instead of linear.
- void [free_alifold_arrays](#) (void)
Free the memory occupied by MFE alifold functions.
- int [get_mpi](#) (char *Aseq[], int n_seq, int length, int *mini)
Get the mean pairwise identity in steps from ?to?(ident)
- float ** [readribosum](#) (char *name)
Read a ribosum or other user-defined scoring matrix.
- float [energy_of_alistruct](#) (const char **sequences, const char *structure, int n_seq, float *energy)
Calculate the free energy of a consensus structure given a set of aligned sequences.
- void [encode_ali_sequence](#) (const char *sequence, short *S, short *s5, short *s3, char *ss, unsigned short *as, int [circ](#))
Get arrays with encoded sequence of the alignment.
- void [alloc_sequence_arrays](#) (const char **sequences, short ***S, short ***S5, short ***S3, unsigned short ***a2s, char ***Ss, int [circ](#))
Allocate memory for sequence array used to deal with aligned sequences.

- void [free_sequence_arrays](#) (unsigned int n_seq, short ***S, short ***S5, short ***S3, unsigned short ***a2s, char ***Ss)
Free the memory of the sequence arrays used to deal with aligned sequences.
- float [alipf_fold_par](#) (const char **sequences, char *structure, [plist](#) **pl, [pf_paramT](#) *parameters, int calculate_bppm, int is_constrained, int is_circular)
- float [alipf_fold](#) (const char **sequences, char *structure, [plist](#) **pl)
The partition function version of [alifold\(\)](#) works in analogy to [pf_fold\(\)](#). Pair probabilities and information about sequence covariations are returned via the 'pi' variable as a list of [pair_info](#) structs. The list is terminated by the first entry with pi.i = 0.
- float [alipf_circ_fold](#) (const char **sequences, char *structure, [plist](#) **pl)
- double * [export_ali_bppm](#) (void)
Get a pointer to the base pair probability array.
- char * [alipbacktrack](#) (double *prob)
Sample a consensus secondary structure from the Boltzmann ensemble according its probability
- int [get_alipf_arrays](#) (short ***S_p, short ***S5_p, short ***S3_p, unsigned short ***a2s_p, char ***Ss_p, double **qb_p, double **qm_p, double **q1k_p, double **qln_p, short **pscore)
Get pointers to (almost) all relevant arrays used in alifold's partition function computation.

Variables

- double [cv_fact](#)
This variable controls the weight of the covariance term in the energy function of alignment folding algorithms.
- double [nc_fact](#)
This variable controls the magnitude of the penalty for non-compatible sequences in the covariance term of alignment folding algorithms.

11.7.1 Detailed Description

compute various properties (consensus MFE structures, partition function, Boltzmann distributed stochastic samples, ...) for RNA sequence alignments

11.7.2 Function Documentation

11.7.2.1 update_alifold_params()

```
void update_alifold_params (
    void )
```

Update the energy parameters for alifold function.

Call this to recalculate the pair matrix and energy parameters after a change in folding parameters like [temperature](#)

11.8 alifold.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_ALIFOLD_H__
00002 #define __VIENNA_RNA_PACKAGE_ALIFOLD_H__
00003
00004 #include "data_structures.h"
00005
00043 extern double cv_fact;
00052 extern double nc_fact;
00053
00054 /*
00055 #####
00056 # MFE VARIANTS OF THE ALIFOLD IMPLEMENTATION #
00057 #####
00058 */
00059
00066 void update_alifold_params(void);
00067
00068
00086 float alifold( const char **strings,
00087               char *structure);
```

```

00088
00089
00100 float  circalifold( const char **strings,
00101                     char *structure);
00102
00109 void    free_alifold_arrays(void);
00110
00122 int  get_mpi(char *Alseq[],
00123             int n_seq,
00124             int length,
00125             int *mini);
00126
00133 float  **readribosum(char *name);
00134
00148 float  energy_of_alistruct(const char **sequences,
00149                            const char *structure,
00150                            int n_seq,
00151                            float *energy);
00152
00153 float  energy_of_ali_gquad_structure(const char **sequences,
00154                                     const char *structure,
00155                                     int n_seq,
00156                                     float *energy);
00157
00158 /*
00159 #####
00160 # some helper functions that might be useful in the library #
00161 #####
00162 */
00163
00180 void  encode_ali_sequence( const char *sequence,
00181                           short *S,
00182                           short *s5,
00183                           short *s3,
00184                           char *ss,
00185                           unsigned short *as,
00186                           int circ);
00187
00205 void  alloc_sequence_arrays(const char **sequences,
00206                             short ***S,
00207                             short ***s5,
00208                             short ***s3,
00209                             unsigned short ***a2s,
00210                             char ***ss,
00211                             int circ);
00212
00229 void  free_sequence_arrays( unsigned int n_seq,
00230                             short ***S,
00231                             short ***s5,
00232                             short ***s3,
00233                             unsigned short ***a2s,
00234                             char ***ss);
00235
00236 /*
00237 #####
00238 # PARTITION FUNCTION VARIANTS OF THE ALIFOLD IMPLEMENTATION #
00239 #####
00240 */
00241
00242
00265 float  alipf_fold_par( const char **sequences,
00266                       char *structure,
00267                       plist **pl,
00268                       pf_paramT *parameters,
00269                       int calculate_bppm,
00270                       int is_constrained,
00271                       int is_circular);
00272
00289 float  alipf_fold( const char **sequences,
00290                   char *structure,
00291                   plist **pl);
00292
00303 float  alipf_circ_fold(const char **sequences,
00304                       char *structure,
00305                       plist **pl);
00306
00307
00319 FLT_OR_DBL *export_ali_bppm(void);
00320
00327 void  free_alipf_arrays(void);
00328
00344 char  *alipbacktrack(double *prob);
00345
00346
00367 int  get_alipf_arrays(short ***S_p,
00368                     short ***s5_p,
00369                     short ***s3_p,

```

```

00370         unsigned short ***a2s_p,
00371         char ***Ss_p,
00372         FLT_OR_DBL **qb_p,
00373         FLT_OR_DBL **qm_p,
00374         FLT_OR_DBL **qlk_p,
00375         FLT_OR_DBL **qln_p,
00376         short **pscore);
00377
00378 #endif

```

11.9 aln_util.h

```

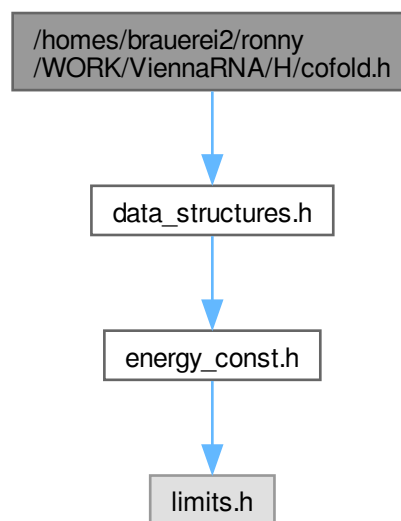
00001 #ifndef __VIENNA_RNA_PACKAGE_ALN_UTIL_H__
00002 #define __VIENNA_RNA_PACKAGE_ALN_UTIL_H__
00003
00004 int read_clustal( FILE *clust,
00005                 char *AlignedSeqs[],
00006                 char *names[]);
00007 /*@only@*/ /*@notnull@*/ char *consensus(const char *AS[]);
00008 /*@only@*/ /*@notnull@*/ char *consens_mis(const char *AS[]);
00009
00010 #endif

```

11.10 /homes/brauerei2/ronny/WORK/ViennaRNA/H/cofold.h File Reference

MFE version of cofolding routines.

Include dependency graph for cofold.h:



Functions

- float [cofold](#) (const char *sequence, char *structure)
Compute the minimum free energy of two interacting RNA molecules.
- float [cofold_par](#) (const char *string, char *structure, [paramT](#) *parameters, int is_constrained)
Compute the minimum free energy of two interacting RNA molecules.
- void [free_co_arrays](#) (void)
Free memory occupied by [cofold\(\)](#)

- void **update_cofold_params** (void)
Recalculate parameters.
- void **export_cofold_arrays_gq** (int **f5_p, int **c_p, int **fML_p, int **fM1_p, int **fc_p, int **ggg_p, int **indx_p, char **ptype_p)
Export the arrays of partition function cofold (with gquadruplex support)
- void **export_cofold_arrays** (int **f5_p, int **c_p, int **fML_p, int **fM1_p, int **fc_p, int **indx_p, char **ptype_p)
Export the arrays of partition function cofold.
- **SOLUTION** * **zukersubopt** (const char *string)
Compute Zuker type suboptimal structures.
- **SOLUTION** * **zukersubopt_par** (const char *string, **paramT** *parameters)
Compute Zuker type suboptimal structures.
- void **get_monomere_mfes** (float *e1, float *e2)
get_monomer_free_energies
- void **initialize_cofold** (int length)

11.10.1 Detailed Description

MFE version of cofolding routines.

This file includes (almost) all function declarations within the **RNAlib** that are related to MFE Cofolding... This also includes the Zuker suboptimals calculations, since they are implemented using the cofold routines.

11.10.2 Function Documentation

11.10.2.1 get_monomere_mfes()

```
void get_monomere_mfes (
    float * e1,
    float * e2 )
```

get_monomer_free_energies

Export monomer free energies out of cofold arrays

Parameters

<i>e1</i>	A pointer to a variable where the energy of molecule A will be written to
<i>e2</i>	A pointer to a variable where the energy of molecule B will be written to

11.10.2.2 initialize_cofold()

```
void initialize_cofold (
    int length )
```

allocate arrays for folding

Deprecated

11.11 cofold.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_COFOLD_H__
00002 #define __VIENNA_RNA_PACKAGE_COFOLD_H__
00003
00004 #include "data_structures.h"
00005
00006 #ifdef __GNUC__
00007 #define DEPRECATED(func) func __attribute__((deprecated))
00008 #else
00009 #define DEPRECATED(func) func
00010 #endif
00011
```

```

00065 float cofold( const char *sequence,
00066                char *structure);
00067
00072 float cofold_par( const char *string,
00073                   char *structure,
00074                   paramT *parameters,
00075                   int is_constrained);
00076
00080 void      free_co_arrays(void);
00081
00085 void      update_cofold_params(void);
00086
00087 void      update_cofold_params_par(paramT *parameters);
00088
00089
00105 void export_cofold_arrays_gg( int **f5_p,
00106                               int **c_p,
00107                               int **fML_p,
00108                               int **fMl_p,
00109                               int **fc_p,
00110                               int **ggg_p,
00111                               int **indx_p,
00112                               char **ptype_p);
00113
00128 void export_cofold_arrays(int **f5_p,
00129                            int **c_p,
00130                            int **fML_p,
00131                            int **fMl_p,
00132                            int **fc_p,
00133                            int **indx_p,
00134                            char **ptype_p);
00135
00136
00153 SOLUTION *zukersubopt(const char *string);
00154
00161 SOLUTION *zukersubopt_par( const char *string,
00162                             paramT *parameters);
00163
00172 void get_monomere_mfes( float *e1,
00173                         float *e2);
00174
00175
00180 DEPRECATED(void initialize_cofold(int length));
00181
00182 #endif

```

11.12 /homes/brauerei2/ronny/WORK/ViennaRNA/H/convert_epars.h File Reference

Functions and definitions for energy parameter file format conversion.

Macros

- #define [VRNA_CONVERT_OUTPUT_ALL](#) 1U
- #define [VRNA_CONVERT_OUTPUT_HP](#) 2U
- #define [VRNA_CONVERT_OUTPUT_STACK](#) 4U
- #define [VRNA_CONVERT_OUTPUT_MM_HP](#) 8U
- #define [VRNA_CONVERT_OUTPUT_MM_INT](#) 16U
- #define [VRNA_CONVERT_OUTPUT_MM_INT_1N](#) 32U
- #define [VRNA_CONVERT_OUTPUT_MM_INT_23](#) 64U
- #define [VRNA_CONVERT_OUTPUT_MM_MULTI](#) 128U
- #define [VRNA_CONVERT_OUTPUT_MM_EXT](#) 256U
- #define [VRNA_CONVERT_OUTPUT_DANGLE5](#) 512U
- #define [VRNA_CONVERT_OUTPUT_DANGLE3](#) 1024U
- #define [VRNA_CONVERT_OUTPUT_INT_11](#) 2048U
- #define [VRNA_CONVERT_OUTPUT_INT_21](#) 4096U
- #define [VRNA_CONVERT_OUTPUT_INT_22](#) 8192U
- #define [VRNA_CONVERT_OUTPUT_BULGE](#) 16384U
- #define [VRNA_CONVERT_OUTPUT_INT](#) 32768U
- #define [VRNA_CONVERT_OUTPUT_ML](#) 65536U
- #define [VRNA_CONVERT_OUTPUT_MISC](#) 131072U

- `#define VRNA_CONVERT_OUTPUT_SPECIAL_HP 262144U`
- `#define VRNA_CONVERT_OUTPUT_VANILLA 524288U`
- `#define VRNA_CONVERT_OUTPUT_NINIO 1048576U`
- `#define VRNA_CONVERT_OUTPUT_DUMP 2097152U`

Functions

- void `convert_parameter_file` (const char *iname, const char *oname, unsigned int options)

11.12.1 Detailed Description

Functions and definitions for energy parameter file format conversion.

11.13 convert_epars.h

[Go to the documentation of this file.](#)

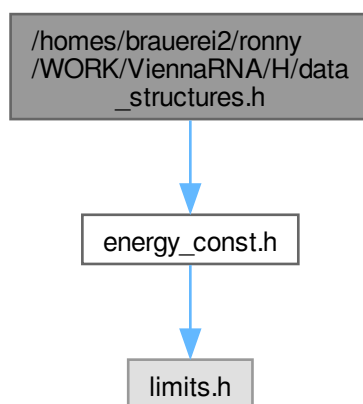
```
00001 #ifndef __VIENNA_RNA_PACKAGE_CONVERT_EPARS_H__
00002 #define __VIENNA_RNA_PACKAGE_CONVERT_EPARS_H__
00003
00018 #define VRNA_CONVERT_OUTPUT_ALL          1U
00020 #define VRNA_CONVERT_OUTPUT_HP           2U
00022 #define VRNA_CONVERT_OUTPUT_STACK        4U
00024 #define VRNA_CONVERT_OUTPUT_MM_HP        8U
00026 #define VRNA_CONVERT_OUTPUT_MM_INT       16U
00028 #define VRNA_CONVERT_OUTPUT_MM_INT_1N    32U
00030 #define VRNA_CONVERT_OUTPUT_MM_INT_23    64U
00032 #define VRNA_CONVERT_OUTPUT_MM_MULT1    128U
00034 #define VRNA_CONVERT_OUTPUT_MM_EXT       256U
00036 #define VRNA_CONVERT_OUTPUT_DANGLE5      512U
00038 #define VRNA_CONVERT_OUTPUT_DANGLE3      1024U
00040 #define VRNA_CONVERT_OUTPUT_INT_11       2048U
00042 #define VRNA_CONVERT_OUTPUT_INT_21       4096U
00044 #define VRNA_CONVERT_OUTPUT_INT_22       8192U
00046 #define VRNA_CONVERT_OUTPUT_BULGE        16384U
00048 #define VRNA_CONVERT_OUTPUT_INT          32768U
00050 #define VRNA_CONVERT_OUTPUT_ML            65536U
00052 #define VRNA_CONVERT_OUTPUT_MISC         131072U
00054 #define VRNA_CONVERT_OUTPUT_SPECIAL_HP    262144U
00056 #define VRNA_CONVERT_OUTPUT_VANILLA      524288U
00058 #define VRNA_CONVERT_OUTPUT_NINIO        1048576U
00060 #define VRNA_CONVERT_OUTPUT_DUMP         2097152U
00061
00085 void convert_parameter_file(const char *iname,
00086                             const char *oname,
00087                             unsigned int options);
00088
00092 #endif
```

11.14 /homes/brauerei2/ronny/WORK/ViennaRNA/H/data_structures.h

File Reference

All datastructures and typedefs shared among the Vienna RNA Package can be found here.

Include dependency graph for data_structures.h:



This graph shows which files directly or indirectly include this file:



Data Structures

- struct [plist](#)
this datastructure is used as input parameter in functions of [PS_dot.h](#) and others
- struct [cpair](#)
this datastructure is used as input parameter in functions of [PS_dot.c](#)
- struct [COORDINATE](#)
this is a workaround for the SWIG Perl Wrapper RNA plot function that returns an array of type [COORDINATE](#)
- struct [sect](#)
Stack of partial structures for backtracking.
- struct [bondT](#)
Base pair.
- struct [bondTEn](#)
Base pair with associated energy.
- struct [model_detailsT](#)
The data structure that contains the complete model details used throughout the calculations.
- struct [paramT](#)
The datastructure that contains temperature scaled energy parameters.
- struct [pf_paramT](#)
The datastructure that contains temperature scaled Boltzmann weights of the energy parameters.
- struct [PAIR](#)
Base pair data structure used in [subopt.c](#).
- struct [INTERVAL](#)
Sequence interval stack element used in [subopt.c](#).
- struct [SOLUTION](#)
Solution element from [subopt.c](#).

- struct [cofoldF](#)
- struct [ConcEnt](#)
- struct [pairpro](#)
- struct [pair_info](#)
A base pair info structure.
- struct [move_t](#)
- struct [intermediate_t](#)
- struct [path_t](#)
- struct [pu_contrib](#)
contributions to p_u
- struct [interact](#)
- struct [pu_out](#)
Collection of all free_energy of beeing unpaired values for output.
- struct [constrain](#)
constraints for cofolding
- struct [duplexT](#)
- struct [folden](#)
- struct [snoopT](#)
- struct [dupVar](#)
- struct [TwoDfold_solution](#)
Solution element returned from TwoDfoldList.
- struct [TwoDfold_vars](#)
Variables compound for 2Dfold MFE folding.
- struct [TwoDpfold_solution](#)
Solution element returned from TwoDpfoldList.
- struct [TwoDpfold_vars](#)
Variables compound for 2Dfold partition function folding.

Macros

- `#define MAXALPHA 20`
Maximal length of alphabet.
- `#define MAXDOS 1000`
Maximum density of states discretization for subopt.

11.14.1 Detailed Description

All datastructures and typedefs shared among the Vienna RNA Package can be found here.

11.15 data_structures.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_DATA_STRUCTURES_H__
00002 #define __VIENNA_RNA_PACKAGE_DATA_STRUCTURES_H__
00003
00004 #include "energy_const.h"
00010 /* to use floats instead of doubles in pf_fold() comment next line */
00011 #define LARGE_PF
00012 #ifdef LARGE_PF
00013 #define FLT_OR_DBL double
00014 #else
00015 #define FLT_OR_DBL float
00016 #endif
00017
00018 #ifndef MAXALPHA
00022 #define MAXALPHA 20
00023 #endif
00024
00028 #define MAXDOS 1000
00029
00030 #define VRNA_GQUAD_MAX_STACK_SIZE 7
00031 #define VRNA_GQUAD_MIN_STACK_SIZE 2
00032 #define VRNA_GQUAD_MAX_LINKER_LENGTH 15
00033 #define VRNA_GQUAD_MIN_LINKER_LENGTH 1
00034 #define VRNA_GQUAD_MIN_BOX_SIZE
00035 #define VRNA_GQUAD_MAX_BOX_SIZE
00036 ((4*VRNA_GQUAD_MIN_STACK_SIZE)+(3*VRNA_GQUAD_MIN_LINKER_LENGTH))
00037 ((4*VRNA_GQUAD_MAX_STACK_SIZE)+(3*VRNA_GQUAD_MAX_LINKER_LENGTH))
00038
00039 /*
00040 * #####
00041 * Here are the type definitions of various datastructures
00042 * shared among the Vienna RNA Package
00043 * #####
00044 */
00048 typedef struct plist {
00049     int i;
00050     int j;
00051     float p;
00052     int type;
00053 } plist;
00054
00058 typedef struct cpair {
00059     int i,j,mfe;
00060     float p, hue, sat;
00061 } cpair;
00062
00067 typedef struct {
00068     float X; /* X coords */
00069     float Y; /* Y coords */
00070 } COORDINATE;
00071
00075 typedef struct sect {
00076     int i;
00077     int j;
00078     int ml;
00079 } sect;
00080
00084 typedef struct bondT {
00085     unsigned int i;
00086     unsigned int j;
00087 } bondT;
00088
00092 typedef struct bondTEn {
00093     int i;
```

```

00094     int j;
00095     int energy;
00096 } bondTEN;
00097
00102 typedef struct{
00103     int     dangles;
00109     int     special_hp;
00110     int     noLP;
00111     int     noGU;
00112     int     noGUclosure;
00113     int     logML;
00114     int     circ;
00115     int     gquad;
00116     int     canonicalBPonly;
00117 } model_detailsT;
00118
00122 typedef struct{
00123     int id;
00124     double temperature;
00125
00126     /* RNA, RNA-DNA, DNA params merged */
00127     int stack[NBPAIRS_HYBRID+1][NBPAIRS_HYBRID+1];
00128     int mismatchExt[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00129     int mismatchI[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00130     int mismatchInI[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00131     int mismatch23I[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00132     int mismatchH[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00133     int mismatchM[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00134     int dangle5[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID];
00135     int dangle3[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID];
00136     int int11[NBPAIRS_HYBRID+1][NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00137     int
int21[NBPAIRS_HYBRID+1][NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00138     int
int22[NBPAIRS_HYBRID+1][NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00139     int MIntern[NBPAIRS_HYBRID+1];
00140     int TerminalAU_t[NBPAIRS_HYBRID+1];
00141
00142     int gquad [VRNA_GQUAD_MAX_STACK_SIZE + 1]
00143             [3*VRNA_GQUAD_MAX_LINKER_LENGTH + 1];
00144
00145     int TripleC;
00146     int MultipleCA;
00147     int MultipleCB;
00148     int TerminalAU;
00149     int DuplexInit;
00150
00151     /* RNA params */
00152     int hairpin[31];
00153     int bulge[MAXLOOP+1];
00154     int internal_loop[MAXLOOP+1];
00155     int ninio[NNUCLEOTIDES_HYBRID];
00156     double lxc;
00157     int MLbase;
00158     int MLclosing;
00159     int Tetraloop_E[200];
00160     char Tetraloops[1401];
00161     int Triloop_E[40];
00162     char Triloops[241];
00163     int Hexaloop_E[40];
00164     char Hexaloops[1801];
00165
00166     /* hybrid params */
00167     int hairpin_RD[31];
00168     int bulge_RD[MAXLOOP+1];
00169     int internal_loop_RD[MAXLOOP+1];
00170     int ninio_RD[5];
00171     double lxc_RD;
00172     int MLbase_RD;
00173     int MLclosing_RD;
00174     int Tetraloop_E_RD[200];
00175     char Tetraloops_RD[1401];
00176     int Triloop_E_RD[40];
00177     char Triloops_RD[241];
00178     int Hexaloop_E_RD[40];
00179     char Hexaloops_RD[1801];
00180
00181     /* DNA params */
00182     int hairpin_D[31];
00183     int bulge_D[MAXLOOP+1];
00184     int internal_loop_D[MAXLOOP+1];
00185     int ninio_D[5];
00186     double lxc_D;
00187     int MLbase_D;
00188     int MLclosing_D;
00189     int Tetraloop_E_D[200];
00190     char Tetraloops_D[1401];

```

```

00191     int Triloop_E_D[40];
00192     char Triloops_D[241];
00193     int Hexaloop_E_D[40];
00194     char Hexaloops_D[1801];
00195
00196     model_detailsT model_details;
00197 } paramT;
00198
00199 typedef struct{
00200     int id;
00201     /* RNA, RNA-DNA, DNA params merged */
00202     double expstack[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID];
00203     double expmismatchExt[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00204     double expmismatchI[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00205     double expmismatch23I[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00206     double expmismatchlnI[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00207     double expmismatchH[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00208     double expmismatchM[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00209     double expdangle5[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID];
00210     double expdangle3[NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID];
00211     double expint11[NBPAIRS_HYBRID+1][NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00212     double expint21[NBPAIRS_HYBRID+1][NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00213     double expint22[NBPAIRS_HYBRID+1][NBPAIRS_HYBRID+1][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID];
00214     double expMLintern[NBPAIRS_HYBRID+1];
00215     double expTermAU_t[NBPAIRS_HYBRID+1];
00216
00217     double expDuplexInit;
00218     double expTermAU;
00219
00220     /* RNA params */
00221     double exphairpin[31];
00222     double expbulge[MAXLOOP+1];
00223     double expinternal[MAXLOOP+1];
00224     double expninio[5][MAXLOOP+1];
00225     double lxc;
00226     double expMLbase;
00227     double expMLclosing;
00228     double exptetra[40];
00229     double exptri[40];
00230     double exphex[40];
00231     char Tetraloops[1401];
00232     char Triloops[241];
00233     char Hexaloops[1801];
00234
00235     /* hybrid params */
00236     double exphairpin_RD[31];
00237     double expbulge_RD[MAXLOOP+1];
00238     double expinternal_RD[MAXLOOP+1];
00239     double expninio_RD[5][MAXLOOP+1];
00240     double lxc_RD;
00241     double expMLbase_RD;
00242     double expMLclosing_RD;
00243     double exptetra_RD[40];
00244     double exptri_RD[40];
00245     double exphex_RD[40];
00246     char Tetraloops_RD[1401];
00247     char Triloops_RD[241];
00248     char Hexaloops_RD[1801];
00249
00250     /* DNA params */
00251     double exphairpin_D[31];
00252     double expbulge_D[MAXLOOP+1];
00253     double expinternal_D[MAXLOOP+1];
00254     double expninio_D[5][MAXLOOP+1];
00255     double lxc_D;
00256     double expMLbase_D;
00257     double expMLclosing_D;
00258     double exptetra_D[40];
00259     double exptri_D[40];
00260     double exphex_D[40];
00261     char Tetraloops_D[1401];
00262     char Triloops_D[241];
00263     char Hexaloops_D[1801];
00264
00265     double expTripleC;
00266     double expMultipleCA;
00267     double expMultipleCB;
00268     double expgquad[VRNA_GQUAD_MAX_STACK_SIZE + 1]
00269         [3*VRNA_GQUAD_MAX_LINKER_LENGTH + 1];
00270
00271     double kT;
00272     double pf_scale;
00273     double temperature;
00274     double alpha;
00275     model_detailsT model_details;
00276 }

```

```

00287 } pf_paramT;
00288
00289
00290
00291 /*
00292 * #####
00293 * SUBOPT data structures
00294 * #####
00295 */
00296
00297
00301 typedef struct {
00302     int i;
00303     int j;
00304 } PAIR;
00305
00309 typedef struct {
00310     int i;
00311     int j;
00312     int array_flag;
00313 } INTERVAL;
00314
00318 typedef struct {
00319     float energy;
00320     char *structure;
00321 } SOLUTION;
00322
00323 /*
00324 * #####
00325 * COFOLD data structures
00326 * #####
00327 */
00328
00332 typedef struct cofoldF {
00333     /* free energies for: */
00334     double F0AB;
00335     double FAB;
00336     double FcAB;
00337     double FA;
00338     double FB;
00339 } cofoldF;
00340
00344 typedef struct ConcEnt {
00345     double A0;
00346     double B0;
00347     double ABc;
00348     double AAc;
00349     double BBc;
00350     double Ac;
00351     double Bc;
00352 } ConcEnt;
00353
00357 typedef struct pairpro{
00358     struct plist *AB;
00359     struct plist *AA;
00360     struct plist *A;
00361     struct plist *B;
00362     struct plist *BB;
00363 }pairpro;
00364
00375 typedef struct {
00376     unsigned i;
00377     unsigned j;
00378     float p;
00379     float ent;
00380     short bp[8];
00381     char comp;
00382 } pair_info;
00383
00384
00385 /*
00386 * #####
00387 * FINDPATH data structures
00388 * #####
00389 */
00390
00394 typedef struct move {
00395     int i; /* i,j>0 insert; i,j<0 delete */
00396     int j;
00397     int when; /* 0 if still available, else resulting distance from start */
00398     int E;
00399 } move_t;
00400
00404 typedef struct intermediate {
00405     short *pt;
00406     int Sen;
00407     int curr_en;

```

```

00408     move_t *moves;
00409 } intermediate_t;
00410
00414 typedef struct path {
00415     double en;
00416     char *s;
00417 } path_t;
00418
00419 /*
00420 * #####
00421 * RNAup data structures
00422 * #####
00423 */
00424
00428 typedef struct pu_contrib {
00429     double **H;
00430     double **I;
00431     double **M;
00432     double **E;
00433     int length;
00434     int w;
00435 } pu_contrib;
00436
00440 typedef struct interact {
00441     double *Pi;
00442     double *Gi;
00443     double Gikjl;
00444     double Gikjl_wo;
00445     int i;
00446     int k;
00447     int j;
00448     int l;
00449     int length;
00450 } interact;
00451
00456 typedef struct pu_out {
00457     int len;
00458     int u_vals;
00459     int contribs;
00460     char **header;
00461     double **u_values;
00462 } pu_out;
00463
00467 typedef struct constrain{
00468     int *indx;
00469     char *ptype;
00470 } constrain;
00471
00472 /*
00473 * #####
00474 * RNAduplex data structures
00475 * #####
00476 */
00477
00481 typedef struct {
00482     int i;
00483     int j;
00484     int end;
00485     char *structure;
00486     double energy;
00487     double energy_backtrack;
00488     double opening_backtrack_x;
00489     double opening_backtrack_y;
00490     int offset;
00491     double dG1;
00492     double dG2;
00493     double ddG;
00494     int tb;
00495     int te;
00496     int qb;
00497     int qe;
00498 } duplexT;
00499
00500 /*
00501 * #####
00502 * RNAsnoop data structures
00503 * #####
00504 */
00505
00509 typedef struct node {
00510     int k;
00511     int energy;
00512     struct node *next;
00513 } folden;
00514
00518 typedef struct {
00519     int i;

```



```

00520     int j;
00521     int u;
00522     char *structure;
00523     float energy;
00524     float Duplex_El;
00525     float Duplex_Er;
00526     float Loop_E;
00527     float Loop_D;
00528     float pscd;
00529     float psct;
00530     float pscg;
00531     float Duplex_Ol;
00532     float Duplex_Or;
00533     float Duplex_Ot;
00534     float fullStemEnergy;
00535 } snoopt;
00536
00537
00538
00539
00540
00541
00542
00543 /*
00544 * #####
00545 * PKplex data structures
00546 * #####
00547 */
00548
00552 typedef struct dupVar{
00553     int i;
00554     int j;
00555     int end;
00556     char *pk_helix;
00557     char *structure;
00558     double energy;
00559     int offset;
00560     double dG1;
00561     double dG2;
00562     double ddG;
00563     int tb;
00564     int te;
00565     int qb;
00566     int qe;
00567     int inactive;
00568     int processed;
00569 } dupVar;
00570
00571
00572
00573 /*
00574 * #####
00575 * 2Dfold data structures
00576 * #####
00577 */
00578
00593 typedef struct{
00594     int k;
00595     int l;
00596     float en;
00597     char *s;
00598 } TwoDfold_solution;
00599
00605 typedef struct{
00606     paramT      *P;
00607     int          do_backtrack;
00608     char         *ptype;
00609     char         *sequence;
00610     short        *S, *S1;
00611     unsigned int  maxD1;
00612     unsigned int  maxD2;
00613     unsigned int  *mm1;
00614     unsigned int  *mm2;
00615     int           *my_iindx;
00616     double        temperature;
00617
00622     unsigned int  *referenceBPs1;
00623     unsigned int  *referenceBPs2;
00624     unsigned int  *bpdist;
00625     short         *reference_pt1;
00626     short         *reference_pt2;
00627     int           circ;
00628     int           dangles;
00629     unsigned int  seq_length;
00630
00631
00632     int           ***E_F5;
00633     int           ***E_F3;

```

```

00634 int      ***E_C;
00635 int      ***E_M;
00636 int      ***E_M1;
00637 int      ***E_M2;
00638
00639 int      **E_Fc;
00640 int      **E_FcH;
00641 int      **E_FcI;
00642 int      **E_FcM;
00643
00644 int      *l_min_values;
00645 int      *l_max_values;
00646 int      *k_min_values;
00647 int      *k_max_values;
00648
00649 int      **l_min_values_m;
00650 int      **l_max_values_m;
00651 int      *k_min_values_m;
00652 int      *k_max_values_m;
00653
00654 int      **l_min_values_m1;
00655 int      **l_max_values_m1;
00656 int      *k_min_values_m1;
00657 int      *k_max_values_m1;
00658
00659 int      **l_min_values_f;
00660 int      **l_max_values_f;
00661 int      *k_min_values_f;
00662 int      *k_max_values_f;
00663
00664 int      **l_min_values_f3;
00665 int      **l_max_values_f3;
00666 int      *k_min_values_f3;
00667 int      *k_max_values_f3;
00668
00669 int      **l_min_values_m2;
00670 int      **l_max_values_m2;
00671 int      *k_min_values_m2;
00672 int      *k_max_values_m2;
00673
00674 int      *l_min_values_fc;
00675 int      *l_max_values_fc;
00676 int      k_min_values_fc;
00677 int      k_max_values_fc;
00678
00679 int      *l_min_values_fcH;
00680 int      *l_max_values_fcH;
00681 int      k_min_values_fcH;
00682 int      k_max_values_fcH;
00683
00684 int      *l_min_values_fcI;
00685 int      *l_max_values_fcI;
00686 int      k_min_values_fcI;
00687 int      k_max_values_fcI;
00688
00689 int      *l_min_values_fcM;
00690 int      *l_max_values_fcM;
00691 int      k_min_values_fcM;
00692 int      k_max_values_fcM;
00693
00694 /* auxiliary arrays for remaining set of coarse graining (k,l) > (k_max, l_max) */
00695 int      *E_F5_rem;
00696 int      *E_F3_rem;
00697 int      *E_C_rem;
00698 int      *E_M_rem;
00699 int      *E_M1_rem;
00700 int      *E_M2_rem;
00701
00702 int      E_Fc_rem;
00703 int      E_FcH_rem;
00704 int      E_FcI_rem;
00705 int      E_FcM_rem;
00706
00707 #ifdef COUNT_STATES
00708 unsigned long      ***N_F5;
00709 unsigned long      ***N_C;
00710 unsigned long      ***N_M;
00711 unsigned long      ***N_M1;
00712 #endif
00713 } TwoDfold_vars;
00714
00727 typedef struct{
00728     int k;
00729     int l;
00730     FLT_OR_DBL q;
00731 } TwoDpfold_solution;
00732

```

```

00739 typedef struct{
00740
00741     unsigned int    alloc;
00742     char            *ptype;
00743     char            *sequence;
00744     short           *S, *S1;
00745     unsigned int    maxD1;
00746     unsigned int    maxD2;
00748     double          temperature; /* temperature in last call to scale_pf_params */
00749     double          init_temp;   /* temperature in last call to scale_pf_params */
00750     FLT_OR_DBL      *scale;
00751     FLT_OR_DBL      pf_scale;
00752     pf_paramT       *pf_params; /* holds all [unscaled] pf parameters */
00753
00754     int             *my_iindx;
00755     int             *jindx;
00757     short           *reference_pt1;
00758     short           *reference_pt2;
00759
00760     unsigned int    *referenceBPs1;
00761     unsigned int    *referenceBPs2;
00762     unsigned int    *bpdist;
00764     unsigned int    *mm1;
00765     unsigned int    *mm2;
00767     int             circ;
00768     int             dangles;
00769     unsigned int    seq_length;
00770
00771     FLT_OR_DBL      ***Q;
00772     FLT_OR_DBL      ***Q_B;
00773     FLT_OR_DBL      ***Q_M;
00774     FLT_OR_DBL      ***Q_M1;
00775     FLT_OR_DBL      ***Q_M2;
00776
00777     FLT_OR_DBL      **Q_c;
00778     FLT_OR_DBL      **Q_cH;
00779     FLT_OR_DBL      **Q_cI;
00780     FLT_OR_DBL      **Q_cM;
00781
00782     int             *l_min_values;
00783     int             *l_max_values;
00784     int             *k_min_values;
00785     int             *k_max_values;
00786
00787     int             *l_min_values_b;
00788     int             *l_max_values_b;
00789     int             *k_min_values_b;
00790     int             *k_max_values_b;
00791
00792     int             *l_min_values_m;
00793     int             *l_max_values_m;
00794     int             *k_min_values_m;
00795     int             *k_max_values_m;
00796
00797     int             *l_min_values_m1;
00798     int             *l_max_values_m1;
00799     int             *k_min_values_m1;
00800     int             *k_max_values_m1;
00801
00802     int             *l_min_values_m2;
00803     int             *l_max_values_m2;
00804     int             *k_min_values_m2;
00805     int             *k_max_values_m2;
00806
00807     int             *l_min_values_qc;
00808     int             *l_max_values_qc;
00809     int             *k_min_values_qc;
00810     int             *k_max_values_qc;
00811
00812     int             *l_min_values_qcH;
00813     int             *l_max_values_qcH;
00814     int             *k_min_values_qcH;
00815     int             *k_max_values_qcH;
00816
00817     int             *l_min_values_qcI;
00818     int             *l_max_values_qcI;
00819     int             *k_min_values_qcI;
00820     int             *k_max_values_qcI;
00821
00822     int             *l_min_values_qcM;
00823     int             *l_max_values_qcM;
00824     int             *k_min_values_qcM;
00825     int             *k_max_values_qcM;
00826
00827     /* auxiliary arrays for remaining set of coarse graining (k,l) > (k_max, l_max) */
00828     FLT_OR_DBL      *Q_rem;
00829     FLT_OR_DBL      *Q_B_rem;

```

```

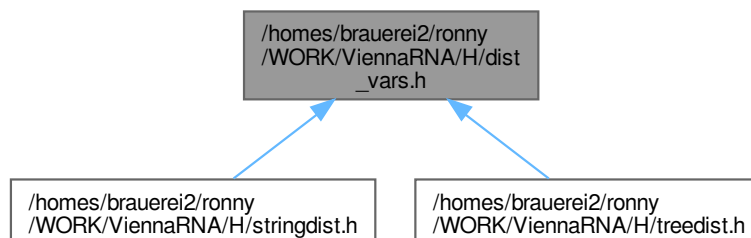
00830 FLT_OR_DBL      *Q_M_rem;
00831 FLT_OR_DBL      *Q_M1_rem;
00832 FLT_OR_DBL      *Q_M2_rem;
00833
00834 FLT_OR_DBL      Q_c_rem;
00835 FLT_OR_DBL      Q_cH_rem;
00836 FLT_OR_DBL      Q_cI_rem;
00837 FLT_OR_DBL      Q_cM_rem;
00838
00839 } TwoDpfold_vars;
00840
00841 #endif

```

11.16 /homes/brauerei2/ronny/WORK/ViennaRNA/H/dist_vars.h File Reference

Global variables for Distance-Package.

This graph shows which files directly or indirectly include this file:



Data Structures

- struct [Postorder_list](#)
- struct [Tree](#)
- struct [swString](#)

Variables

- int [edit_backtrack](#)
Produce an alignment of the two structures being compared by tracing the editing path giving the minimum distance.
- char * [aligned_line](#) [4]
Contains the two aligned structures after a call to one of the distance functions with [edit_backtrack](#) set to 1.
- int [cost_matrix](#)
Specify the cost matrix to be used for distance calculations.

11.16.1 Detailed Description

Global variables for Distance-Package.

11.16.2 Variable Documentation

11.16.2.1 [edit_backtrack](#)

```
int edit_backtrack [extern]
```

Produce an alignment of the two structures being compared by tracing the editing path giving the minimum distance. set to 1 if you want backtracking

11.16.2.2 cost_matrix

```
int cost_matrix [extern]
```

Specify the cost matrix to be used for distance calculations.

if 0, use the default cost matrix (upper matrix in example), otherwise use Shapiro's costs (lower matrix).

11.17 dist_vars.h

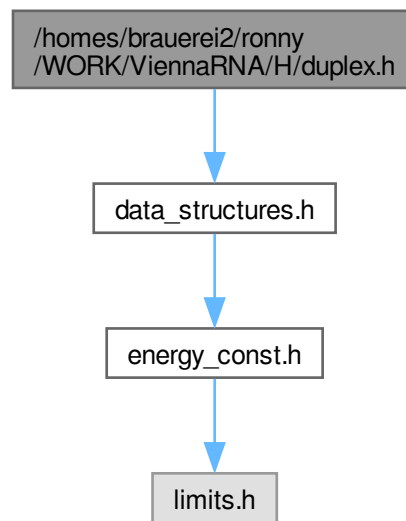
[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_DIST_VARS_H__
00002 #define __VIENNA_RNA_PACKAGE_DIST_VARS_H__
00003
00015 extern int    edit_backtrack;
00016
00021 extern char *aligned_line[4];
00022
00029 extern int    cost_matrix;
00030
00031 /* Global type defs for Distance-Package */
00032
00033 typedef struct {
00034     int    type;
00035     int    weight;
00036     int    father;
00037     int    sons;
00038     int    leftmostleaf;
00039 } Postorder_list;
00040
00041 typedef struct {
00042     Postorder_list *postorder_list;
00043     int             *keyroots;
00044 } Tree;
00045
00046 typedef struct {
00047     int    type;
00048     int    sign;
00049     float  weight;
00050 } swString;
00051 #endif
```

11.18 /homes/brauerei2/ronny/WORK/ViennaRNA/H/duplex.h File Reference

Duplex folding function declarations...

Include dependency graph for duplex.h:



11.18.1 Detailed Description

Duplex folding function declarations...

11.19 duplex.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_DUPLEX_H__
00002 #define __VIENNA_RNA_PACKAGE_DUPLEX_H__
00003
00004 #include "data_structures.h"
00005
00012 duplexT duplexfold( const char *s1,
00013                     const char *s2);
00014
00015 duplexT *duplex_subopt( const char *s1,
00016                       const char *s2,
00017                       int delta,
00018                       int w);
00019
00020 duplexT aliduplexfold(const char *s1[],
00021                     const char *s2[]);
00022
00023 duplexT *aliduplex_subopt(const char *s1[],
00024                          const char *s2[],
00025                          int delta,
00026                          int w);
00027
00028 #endif
  
```

11.20 /homes/brauerei2/ronny/WORK/ViennaRNA/H/edit_cost.h File Reference

global variables for Edit Costs included by treedist.c and stringdist.c

11.20.1 Detailed Description

global variables for Edit Costs included by treedist.c and stringdist.c

11.21 edit_cost.h

[Go to the documentation of this file.](#)

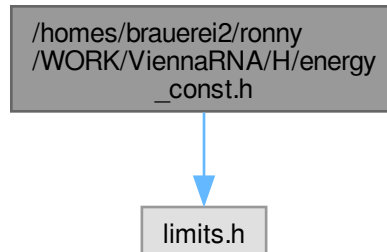
```

00001
00006 #define PRIVATE static
00007
00008 PRIVATE char sep = ':';
00009 PRIVATE char *coding = "Null:U:P:H:B:I:M:S:E:R";
00010
00011 #define INF 10000 /* infinity */
00012
00013 typedef int CostMatrix[10][10];
00014
00015 PRIVATE CostMatrix *EditCost; /* will point to UsualCost or ShapiroCost */
00016
00017 PRIVATE CostMatrix UsualCost =
00018 {
00019
00020 /* Null, U, P, H, B, I, M, S, E, R */
00021
00022 { 0, 1, 2, 2, 2, 2, 2, 1, 1, INF}, /* Null replaced */
00023 { 1, 0, 1, INF, INF, INF, INF, INF, INF, INF}, /* U replaced */
00024 { 2, 1, 0, INF, INF, INF, INF, INF, INF, INF}, /* P replaced */
00025 { 2, INF, INF, 0, 2, 2, 2, INF, INF, INF}, /* H replaced */
00026 { 2, INF, INF, 2, 0, 1, 2, INF, INF, INF}, /* B replaced */
00027 { 2, INF, INF, 2, 1, 0, 2, INF, INF, INF}, /* I replaced */
00028 { 2, INF, INF, 2, 2, 2, 0, INF, INF, INF}, /* M replaced */
00029 { 1, INF, INF, INF, INF, INF, INF, 0, INF, INF}, /* S replaced */
00030 { 1, INF, INF, INF, INF, INF, INF, INF, 0, INF}, /* E replaced */
00031 { INF, INF, INF, INF, INF, INF, INF, INF, INF, 0}, /* R replaced */
00032
00033 };
00034
00035
00036 PRIVATE CostMatrix ShapiroCost =
00037 {
00038
00039 /* Null, U, P, H, B, I, M, S, E, R */
00040
00041 { 0, 1, 2, 100, 5, 5, 75, 5, 5, INF}, /* Null replaced */
00042 { 1, 0, 1, INF, INF, INF, INF, INF, INF, INF}, /* U replaced */
00043 { 2, 1, 0, INF, INF, INF, INF, INF, INF, INF}, /* P replaced */
00044 { 100, INF, INF, 0, 8, 8, 8, INF, INF, INF}, /* H replaced */
00045 { 5, INF, INF, 8, 0, 3, 8, INF, INF, INF}, /* B replaced */
00046 { 5, INF, INF, 8, 3, 0, 8, INF, INF, INF}, /* I replaced */
00047 { 75, INF, INF, 8, 8, 8, 0, INF, INF, INF}, /* M replaced */
00048 { 5, INF, INF, INF, INF, INF, INF, 0, INF, INF}, /* S replaced */
00049 { 5, INF, INF, INF, INF, INF, INF, INF, 0, INF}, /* E replaced */
00050 { INF, INF, INF, INF, INF, INF, INF, INF, INF, 0}, /* R replaced */
00051
00052 };
00053

```

11.22 /homes/brauerei2/ronny/WORK/ViennaRNA/H/energy_const.h File Reference

Include dependency graph for energy_const.h:



This graph shows which files directly or indirectly include this file:



Macros

- `#define GASCONST 1.98717 /* in [cal/K] */`
- `#define K0 273.15`
- `#define INF 10000000 /* (INT_MAX/10) */`
- `#define FORBIDDEN 9999`
- `#define BONUS 10000`
- `#define NBPAIRS 7`
- `#define TURN 3`
- `#define MAXLOOP 30`
- `#define NBPAIRS_HYBRID 32`
- `#define NNUCLEOTIDES_HYBRID 16`

11.22.1 Detailed Description

energy constants

11.22.2 Macro Definition Documentation

11.22.2.1 GASCONST

```
#define GASCONST 1.98717 /* in [cal/K] */
```

The gas constant

11.22.2.2 K0

```
#define K0 273.15
```

0 deg Celsius in Kelvin

11.22.2.3 INF

```
#define INF 10000000 /* (INT_MAX/10) */
```

Infinity as used in minimization routines

11.22.2.4 FORBIDDEN

```
#define FORBIDDEN 9999
```

forbidden

11.22.2.5 BONUS

```
#define BONUS 10000
```

bonus contribution

11.22.2.6 NBPAIRS

```
#define NBPAIRS 7
```

The number of distinguishable base pairs

11.22.2.7 TURN

```
#define TURN 3
```

The minimum loop length

11.22.2.8 MAXLOOP

```
#define MAXLOOP 30
```

The maximum loop length

11.22.2.9 NBPAIRS_HYBRID

```
#define NBPAIRS_HYBRID 32
```

The number of base pairs for the hybrid case

11.22.2.10 NNUCLEOTIDES_HYBRID

```
#define NNUCLEOTIDES_HYBRID 16
```

The number of distinguishable nucleotides in the hybrid case

11.23 energy_const.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_ENERGY_CONST_H__
00002 #define __VIENNA_RNA_PACKAGE_ENERGY_CONST_H__
00003
00004 #include <limits.h>
00005
00012 #define GASCONST 1.98717 /* in [cal/K] */
00014 #define K0 273.15
00016 #define INF 10000000 /* (INT_MAX/10) */
00017
00018 #define EMAX (INF/10)
00020 #define FORBIDDEN 9999
00022 #define BONUS 10000
00024 #define NBPAIRS 7
00026 #define TURN 3
00028 #define MAXLOOP 30
00029
00030 #define VRNA_GQUAD_MISMATCH_PENALTY 300 /* penalty for incompatible nucleotides in an alignment
that destruct a gquad layer */
00031 #define VRNA_GQUAD_MISMATCH_NUM_ALI 1 /* maximum number of mismatching sequences in the alignment
when gquad should be formed */
00032
00034 #define NBPAIRS_HYBRID 32
00036 #define NNUCLEOTIDES_HYBRID 16
00037
```

```
00038
00039 #endif
```

11.24 energy_par.h

```
00001 /*
00002     prototypes for energy_par.c
00003 */
00004
00005 #ifndef __VIENNA_RNA_PACKAGE_ENERGY_PAR_H__
00006 #define __VIENNA_RNA_PACKAGE_ENERGY_PAR_H__
00007
00008 #include "energy_const.h"
00009
00010 #define PUBLIC
00011
00012
00013 extern double lxc37; /* parameter for logarithmic loop
00014     energy extrapolation */
00015
00016 extern int stack37[NBPAIRS+1][NBPAIRS+1];
00017 extern int stackdH[NBPAIRS+1][NBPAIRS+1]; /* stack enthalpies */
00018 extern int entropies[NBPAIRS+1][NBPAIRS+1]; /* not used anymore */
00019
00020 extern int hairpin37[31];
00021 extern int hairpindH[31];
00022 extern int bulge37[31];
00023 extern int bulgedH[31];
00024 extern int internal_loop37[31];
00025 extern int internal_loophH[31];
00026 extern int internal2_energy;
00027 extern int old_mismatch_37[NBPAIRS+1][5][5];
00028 extern int mismatchI37[NBPAIRS+1][5][5]; /* interior loop mismatches */
00029 extern int mismatchIdH[NBPAIRS+1][5][5]; /* interior loop mismatches */
00030 extern int mismatchlnI37[NBPAIRS+1][5][5]; /* interior loop mismatches */
00031 extern int mismatch23I37[NBPAIRS+1][5][5]; /* interior loop mismatches */
00032 extern int mismatchlnIdH[NBPAIRS+1][5][5]; /* interior loop mismatches */
00033 extern int mismatch23IdH[NBPAIRS+1][5][5]; /* interior loop mismatches */
00034 extern int mismatchH37[NBPAIRS+1][5][5]; /* same for hairpins */
00035 extern int mismatchM37[NBPAIRS+1][5][5]; /* same for multiloops */
00036 extern int mismatchHdH[NBPAIRS+1][5][5]; /* same for hairpins */
00037 extern int mismatchMdH[NBPAIRS+1][5][5]; /* same for multiloops */
00038 extern int mismatchExt37[NBPAIRS+1][5][5];
00039 extern int mismatchExtIdH[NBPAIRS+1][5][5];
00040
00041 extern int dangle5_37[NBPAIRS+1][5]; /* 5' dangle exterior of pair */
00042 extern int dangle3_37[NBPAIRS+1][5]; /* 3' dangle */
00043 extern int dangle3_dH[NBPAIRS+1][5]; /* corresponding enthalpies */
00044 extern int dangle5_dH[NBPAIRS+1][5];
00045
00046 extern int int11_37[NBPAIRS+1][NBPAIRS+1][5][5]; /* 1x1 interior loops */
00047 extern int int11_dH[NBPAIRS+1][NBPAIRS+1][5][5];
00048
00049 extern int int21_37[NBPAIRS+1][NBPAIRS+1][5][5][5]; /* 2x1 interior loops */
00050 extern int int21_dH[NBPAIRS+1][NBPAIRS+1][5][5][5];
00051
00052 extern int int22_37[NBPAIRS+1][NBPAIRS+1][5][5][5][5]; /* 2x2 interior loops */
00053 extern int int22_dH[NBPAIRS+1][NBPAIRS+1][5][5][5][5];
00054
00055 /* constants for linearly destabilizing contributions for multi-loops
00056     F = ML_closing + ML_intern*(k-1) + ML_BASE*u */
00057 extern int ML_BASE37;
00058 extern int ML_BASEdH;
00059 extern int ML_closing37;
00060 extern int ML_closingdH;
00061 extern int ML_intern37;
00062 extern int ML_interndH;
00063
00064 extern int TripleC37;
00065 extern int TripleCdH;
00066 extern int MultipleCA37;
00067 extern int MultipleCAdH;
00068 extern int MultipleCB37;
00069 extern int MultipleCBdH;
00070
00071 /* Ninio-correction for asymmetric internal loops with branches n1 and n2 */
00072 /*     ninio_energy = min{max_ninio, |n1-n2|*F_ninio[min{4.0, n1, n2}] } */
00073 extern int MAX_NINIO; /* maximum correction */
00074 extern int ninio37;
00075 extern int niniodH;
00076 /* penalty for helices terminated by AU (actually not GC) */
00077 extern int TerminalAU37;
00078 extern int TerminalAUdH;
00079 /* penalty for forming bi-molecular duplex */
00080 extern int DuplexInit37;
```

```

00081 extern int DuplexInitdH;
00082 /* stabilizing contribution due to special hairpins of size 4 (tetraloops) */
00083 extern char Tetraloops[]; /* string containing the special tetraloops */
00084 extern int Tetraloop37[]; /* Bonus energy for special tetraloops */
00085 extern int TetraloopdH[];
00086 extern char Triloops[]; /* string containing the special triloops */
00087 extern int Triloop37[]; /* Bonus energy for special Triloops */
00088 extern int TriloopdH[]; /* Bonus energy for special Triloops */
00089 extern char Hexaloops[]; /* string containing the special triloops */
00090 extern int Hexaloop37[]; /* Bonus energy for special Triloops */
00091 extern int HexaloopdH[]; /* Bonus energy for special Triloops */
00092
00093 extern int GQuadAlpha37;
00094 extern int GQuadAlphadH;
00095 extern int GQuadBeta37;
00096 extern int GQuadBetadH;
00097
00098 extern double Tmeasure; /* temperature of param measurements */
00099
00100 #include "energy_par_D.h"
00101 #include "energy_par_RD.h"
00102
00103 #endif

```

11.25 energy_par_D.h

```

00001 /*
00002     prototypes for energy_par.c
00003 */
00004
00005 #ifndef __VIENNA_RNA_PACKAGE_ENERGY_PAR_D_H__
00006 #define __VIENNA_RNA_PACKAGE_ENERGY_PAR_D_H__
00007
00008 #include "energy_const.h"
00009
00010 #define PUBLIC
00011
00012
00013 extern double lxc37_D; /* parameter for logarithmic loop
00014     energy extrapolation */
00015
00016 extern int stack37_D[NBPAIRS+1][NBPAIRS+1];
00017 extern int stackdH_D[NBPAIRS+1][NBPAIRS+1]; /* stack enthalpies */
00018 extern int entropies_D[NBPAIRS+1][NBPAIRS+1]; /* not used anymore */
00019
00020 extern int hairpin37_D[31];
00021 extern int hairpindH_D[31];
00022 extern int bulge37_D[31];
00023 extern int bulgedH_D[31];
00024 extern int internal_loop37_D[31];
00025 extern int internal_loophH_D[31];
00026 extern int internal2_energy_D;
00027 extern int old_mismatch_37_D[NBPAIRS+1][5][5];
00028 extern int mismatchI37_D[NBPAIRS+1][5][5]; /* interior loop mismatches */
00029 extern int mismatchIdH_D[NBPAIRS+1][5][5]; /* interior loop mismatches */
00030 extern int mismatchlnI37_D[NBPAIRS+1][5][5]; /* interior loop mismatches */
00031 extern int mismatch23I37_D[NBPAIRS+1][5][5]; /* interior loop mismatches */
00032 extern int mismatchlnIdH_D[NBPAIRS+1][5][5]; /* interior loop mismatches */
00033 extern int mismatch23IdH_D[NBPAIRS+1][5][5]; /* interior loop mismatches */
00034 extern int mismatchH37_D[NBPAIRS+1][5][5]; /* same for hairpins */
00035 extern int mismatchM37_D[NBPAIRS+1][5][5]; /* same for multiloops */
00036 extern int mismatchHdH_D[NBPAIRS+1][5][5]; /* same for hairpins */
00037 extern int mismatchMdH_D[NBPAIRS+1][5][5]; /* same for multiloops */
00038 extern int mismatchExt37_D[NBPAIRS+1][5][5];
00039 extern int mismatchExtIdH_D[NBPAIRS+1][5][5];
00040
00041 extern int dangle5_37_D[NBPAIRS+1][5]; /* 5' dangle exterior of pair */
00042 extern int dangle3_37_D[NBPAIRS+1][5]; /* 3' dangle */
00043 extern int dangle3_dH_D[NBPAIRS+1][5]; /* corresponding enthalpies */
00044 extern int dangle5_dH_D[NBPAIRS+1][5];
00045
00046 extern int int11_37_D[NBPAIRS+1][NBPAIRS+1][5][5]; /* 1x1 interior loops */
00047 extern int int11_dH_D[NBPAIRS+1][NBPAIRS+1][5][5];
00048
00049 extern int int21_37_D[NBPAIRS+1][NBPAIRS+1][5][5][5]; /* 2x1 interior loops */
00050 extern int int21_dH_D[NBPAIRS+1][NBPAIRS+1][5][5][5];
00051
00052 extern int int22_37_D[NBPAIRS+1][NBPAIRS+1][5][5][5][5]; /* 2x2 interior loops */
00053 extern int int22_dH_D[NBPAIRS+1][NBPAIRS+1][5][5][5][5];
00054
00055 /* constants for linearly destabilizing contributions for multi-loops
00056     F = ML_closing + ML_intern*(k-1) + ML_BASE*u */
00057 extern int ML_BASE37_D;
00058 extern int ML_BASEdH_D;
00059 extern int ML_closing37_D;

```

```

00060 extern int ML_closingdH_D;
00061 extern int ML_intern37_D;
00062 extern int ML_interndH_D;
00063
00064 extern int DuplexInit37_D;
00065 extern int DuplexInitdH_D;
00066
00067 extern int TripleC37_D;
00068 extern int TripleCdH_D;
00069 extern int MultipleCA37_D;
00070 extern int MultipleCAcdH_D;
00071 extern int MultipleCB37_D;
00072 extern int MultipleCBdH_D;
00073
00074 /* Ninio-correction for asymmetric internal loops with branches n1 and n2 */
00075 /*   ninio_energy = min{max_ninio, |n1-n2|*F_ninio[min{4.0, n1, n2}] } */
00076 extern int MAX_NINIO_D; /* maximum correction */
00077 extern int ninio37_D;
00078 extern int niniodH_D;
00079 /* penalty for helices terminated by AU (actually not GC) */
00080 extern int TerminalAU37_D;
00081 extern int TerminalAUdH_D;
00082 /* penalty for forming bi-molecular duplex */
00083 extern int DuplexInit37_D;
00084 extern int DuplexInitdH_D;
00085 /* stabilizing contribution due to special hairpins of size 4 (tetraloops) */
00086 extern char Tetraloops_D[]; /* string containing the special tetraloops */
00087 extern int Tetraloop37_D[]; /* Bonus energy for special tetraloops */
00088 extern int TetraloopdH_D[];
00089 extern char Triloops_D[]; /* string containing the special triloops */
00090 extern int Triloop37_D[]; /* Bonus energy for special Triloops */
00091 extern int TriloopdH_D[]; /* Bonus energy for special Triloops */
00092 extern char Hexaloops_D[]; /* string containing the special triloops */
00093 extern int Hexaloop37_D[]; /* Bonus energy for special Triloops */
00094 extern int HexaloopdH_D[]; /* Bonus energy for special Triloops */
00095
00096 #endif

```

11.26 energy_par_RD.h

```

00001 /*
00002   prototypes for energy_par.c
00003 */
00004
00005 #ifndef __VIENNA_RNA_PACKAGE_ENERGY_PAR_RD_H__
00006 #define __VIENNA_RNA_PACKAGE_ENERGY_PAR_RD_H__
00007
00008 #include "energy_const.h"
00009
00010 #define PUBLIC
00011
00012
00013 extern double lxc37_RD; /* parameter for logarithmic loop
00014   energy extrapolation */
00015
00016 extern int stack37_RD[NBPAIRS+1][NBPAIRS+1];
00017 extern int stackdH_RD[NBPAIRS+1][NBPAIRS+1]; /* stack enthalpies */
00018 extern int entropies[NBPAIRS+1][NBPAIRS+1]; /* not used anymore */
00019
00020 extern int hairpin37_RD[31];
00021 extern int hairpindH_RD[31];
00022 extern int bulge37_RD[31];
00023 extern int bulgedH_RD[31];
00024 extern int internal_loop37_RD[31];
00025 extern int internal_loopedH_RD[31];
00026 extern int internal2_energy_RD;
00027 extern int old_mismatch_37_RD[NBPAIRS+1][5][5];
00028 extern int mismatchI37_RD[NBPAIRS+1][5][5]; /* interior loop mismatches */
00029 extern int mismatchIdH_RD[NBPAIRS+1][5][5]; /* interior loop mismatches */
00030 extern int mismatchlnI37_RD[NBPAIRS+1][5][5]; /* interior loop mismatches */
00031 extern int mismatch23I37_RD[NBPAIRS+1][5][5]; /* interior loop mismatches */
00032 extern int mismatchlnIdH_RD[NBPAIRS+1][5][5]; /* interior loop mismatches */
00033 extern int mismatch23IdH_RD[NBPAIRS+1][5][5]; /* interior loop mismatches */
00034 extern int mismatchH37_RD[NBPAIRS+1][5][5]; /* same for hairpins */
00035 extern int mismatchM37_RD[NBPAIRS+1][5][5]; /* same for multiloops */
00036 extern int mismatchHdH_RD[NBPAIRS+1][5][5]; /* same for hairpins */
00037 extern int mismatchMdH_RD[NBPAIRS+1][5][5]; /* same for multiloops */
00038 extern int mismatchExt37_RD[NBPAIRS+1][5][5];
00039 extern int mismatchExtIdH_RD[NBPAIRS+1][5][5];
00040
00041 extern int dangle5_37_RD[NBPAIRS+1][5]; /* 5' dangle exterior of pair */
00042 extern int dangle3_37_RD[NBPAIRS+1][5]; /* 3' dangle */
00043 extern int dangle3_dH_RD[NBPAIRS+1][5]; /* corresponding enthalpies */
00044 extern int dangle5_dH_RD[NBPAIRS+1][5];
00045

```

```

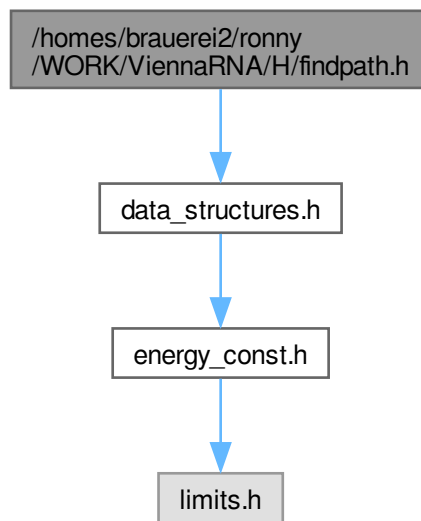
00046 extern int int11_37_RD[NBPAIRS+1][NBPAIRS+1][5][5]; /* 1x1 interior loops */
00047 extern int int11_dH_RD[NBPAIRS+1][NBPAIRS+1][5][5];
00048
00049 extern int int21_37_RD[NBPAIRS+1][NBPAIRS+1][5][5][5]; /* 2x1 interior loops */
00050 extern int int21_dH_RD[NBPAIRS+1][NBPAIRS+1][5][5][5];
00051
00052 extern int int22_37_RD[NBPAIRS+1][NBPAIRS+1][5][5][5][5]; /* 2x2 interior loops */
00053 extern int int22_dH_RD[NBPAIRS+1][NBPAIRS+1][5][5][5][5];
00054
00055 /* constants for linearly destabilizing contributions for multi-loops
00056    F = ML_closing + ML_intern*(k-1) + ML_BASE*u */
00057 extern int ML_BASE37_RD;
00058 extern int ML_BASEdH_RD;
00059 extern int ML_closing37_RD;
00060 extern int ML_closingdH_RD;
00061 extern int ML_intern37_RD;
00062 extern int ML_interndH_RD;
00063
00064 extern int TripleC37_RD;
00065 extern int TripleCdH_RD;
00066 extern int MultipleCA37_RD;
00067 extern int MultipleCAH_RD;
00068 extern int MultipleCB37_RD;
00069 extern int MultipleCBdH_RD;
00070
00071 /* Ninio-correction for asymmetric internal loops with branches n1 and n2 */
00072 /*    ninio_energy = min{max_ninio, |n1-n2|*F_ninio[min{4.0, n1, n2}] } */
00073 extern int MAX_NINIO_RD; /* maximum correction */
00074 extern int ninio37_RD;
00075 extern int niniodH_RD;
00076 /* penalty for helices terminated by AU (actually not GC) */
00077 extern int TerminalAU37_RD;
00078 extern int TerminalAUdH_RD;
00079 /* penalty for forming bi-molecular duplex */
00080 extern int DuplexInit37_RD;
00081 extern int DuplexInitdH_RD;
00082 /* stabilizing contribution due to special hairpins of size 4 (tetraloops) */
00083 extern char Tetraloops_RD[]; /* string containing the special tetraloops */
00084 extern int Tetraloop37_RD[]; /* Bonus energy for special tetraloops */
00085 extern int TetraloopdH_RD[];
00086 extern char Triloops_RD[]; /* string containing the special triloops */
00087 extern int Triloop37_RD[]; /* Bonus energy for special Triloops */
00088 extern int TriloopdH_RD[]; /* Bonus energy for special Triloops */
00089 extern char Hexaloops_RD[]; /* string containing the special triloops */
00090 extern int Hexaloop37_RD[]; /* Bonus energy for special Triloops */
00091 extern int HexaloopdH_RD[]; /* Bonus energy for special Triloops */
00092
00093 #endif

```

11.27 /homes/brauerei2/ronny/WORK/ViennaRNA/H/findpath.h File Reference

Compute direct refolding paths between two secondary structures.

Include dependency graph for findpath.h:



Functions

- `int find_saddle (const char *seq, const char *struc1, const char *struc2, int max)`
Find energy of a saddle point between 2 structures (serch only direct path)
- `path_t * get_path (const char *seq, const char *s1, const char *s2, int maxkeep)`
Find refolding path between 2 structures (serch only direct path)
- `void free_path (path_t *path)`
Free memory allocated by `get_path()` function.

11.27.1 Detailed Description

Compute direct refolding paths between two secondary structures.

11.27.2 Function Documentation

11.27.2.1 find_saddle()

```
int find_saddle (
    const char * seq,
    const char * struc1,
    const char * struc2,
    int max )
```

Find energy of a saddle point between 2 structures (serch only direct path)

Parameters

<i>seq</i>	RNA sequence
<i>struc1</i>	A pointer to the character array where the first secondary structure in dot-bracket notation will be written to
<i>struc2</i>	A pointer to the character array where the second secondary structure in dot-bracket notation will be written to
<i>max</i>	integer how many strutures are being kept during the search

Returns

the saddle energy in 10cal/mol

11.27.2.2 get_path()

```
path_t * get_path (
    const char * seq,
    const char * s1,
    const char * s2,
    int maxkeep )
```

Find refolding path between 2 structures (serch only direct path)

Parameters

<i>seq</i>	RNA sequence
<i>s1</i>	A pointer to the character array where the first secondary structure in dot-bracket notation will be written to
<i>s2</i>	A pointer to the character array where the second secondary structure in dot-bracket notation will be written to
<i>maxkeep</i>	integer how many strutures are being kept during the search

Returns

direct refolding path between two structures

11.27.2.3 free_path()

```
void free_path (
    path_t * path )
```

Free memory allocated by [get_path\(\)](#) function.

Parameters

<i>path</i>	pointer to memory to be freed
-------------	-------------------------------

11.28 findpath.h

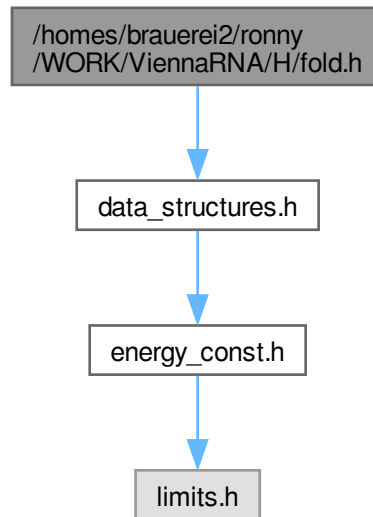
[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_FIND_PATH_H__
00002 #define __VIENNA_RNA_PACKAGE_FIND_PATH_H__
00003
00004 #include "data_structures.h"
00005
00023 int find_saddle(const char *seq,
00024                const char *struc1,
00025                const char *struc2,
00026                int max);
00027
00028
00041 path_t* get_path( const char *seq,
00042                  const char *s1,
00043                  const char* s2,
00044                  int maxkeep);
00045
00051 void free_path(path_t *path);
00052
00053 #endif
```

11.29 /homes/brauerei2/ronny/WORK/ViennaRNA/H/fold.h File Reference

MFE calculations and energy evaluations for single RNA sequences.

Include dependency graph for fold.h:



Functions

- float `fold_par` (const char *sequence, char *structure, `paramT` *parameters, int is_constrained, int is_circular)
Compute minimum free energy and an appropriate secondary structure of an RNA sequence.
- float `fold` (const char *sequence, char *structure)
Compute minimum free energy and an appropriate secondary structure of an RNA sequence.
- float `circfold` (const char *sequence, char *structure)
Compute minimum free energy and an appropriate secondary structure of a circular RNA sequence.
- float `energy_of_structure` (const char *string, const char *structure, int verbosity_level)
Calculate the free energy of an already folded RNA using global model detail settings.
- float `energy_of_struct_par` (const char *string, const char *structure, `paramT` *parameters, int verbosity_level)
Calculate the free energy of an already folded RNA.
- float `energy_of_circ_structure` (const char *string, const char *structure, int verbosity_level)
Calculate the free energy of an already folded circular RNA.
- float `energy_of_circ_struct_par` (const char *string, const char *structure, `paramT` *parameters, int verbosity_level)
Calculate the free energy of an already folded circular RNA.
- int `energy_of_structure_pt` (const char *string, short *ptable, short *s, short *s1, int verbosity_level)
Calculate the free energy of an already folded RNA.
- int `energy_of_struct_pt_par` (const char *string, short *ptable, short *s, short *s1, `paramT` *parameters, int verbosity_level)
Calculate the free energy of an already folded RNA.
- void `free_arrays` (void)
Free arrays for mfe folding.
- void `parenthesis_structure` (char *structure, `bondT` *bp, int length)

- Create a dot-bracket/parenthesis structure from backtracking stack.*

 - void `parenthesis_zuker` (char *structure, `bondT` *bp, int length)

Create a dot-bracket/parenthesis structure from backtracking stack obtained by zucker suboptimal calculation in cofold.c.
- void `update_fold_params` (void)

Recalculate energy parameters.
- float `energy_of_move` (const char *string, const char *structure, int m1, int m2)

Calculate energy of a move (closing or opening of a base pair)
- int `energy_of_move_pt` (short *pt, short *s, short *s1, int m1, int m2)

Calculate energy of a move (closing or opening of a base pair)
- int `loop_energy` (short *ptable, short *s, short *s1, int i)

Calculate energy of a loop.
- void `assign_plist_from_db` (`plist` **pl, const char *struc, float `pr`)

Create a plist from a dot-bracket string.
- int `LoopEnergy` (int n1, int n2, int type, int type_2, int si1, int sj1, int sp1, int sq1)
- int `HairpinE` (int size, int type, int si1, int sj1, const char *string)
- void `initialize_fold` (int length)
- float `energy_of_struct` (const char *string, const char *structure)
- int `energy_of_struct_pt` (const char *string, short *ptable, short *s, short *s1)
- float `energy_of_circ_struct` (const char *string, const char *structure)

Variables

- int `logML`

if nonzero use logarithmic ML energy in energy_of_struct
- int `uniq_ML`

do ML decomposition uniquely (for subopt)
- int `cut_point`

set to first pos of second seq for cofolding
- int `eos_debug`

verbose info from energy_of_struct

11.29.1 Detailed Description

MFE calculations and energy evaluations for single RNA sequences.

This file includes (almost) all function declarations within the RNAlib that are related to MFE folding...

11.29.2 Function Documentation

11.29.2.1 parenthesis_structure()

```
void parenthesis_structure (
    char * structure,
    bondT * bp,
    int length )
```

Create a dot-bracket/parenthesis structure from backtracking stack.

Note

This function is threadsafe

11.29.2.2 parenthesis_zuker()

```
void parenthesis_zuker (
    char * structure,
    bondT * bp,
    int length )
```

Create a dot-bracket/parenthesis structure from backtracking stack obtained by zuker suboptimal calculation in cofold.c.

Note

This function is threadsafe

11.29.2.3 energy_of_move()

```
float energy_of_move (
    const char * string,
    const char * structure,
    int m1,
    int m2 )
```

Calculate energy of a move (closing or opening of a base pair)

If the parameters m1 and m2 are negative, it is deletion (opening) of a base pair, otherwise it is insertion (opening).

See also

[make_pair_table\(\)](#), [energy_of_move\(\)](#)

Parameters

<i>string</i>	RNA sequence
<i>structure</i>	secondary structure in dot-bracket notation
<i>m1</i>	first coordinate of base pair
<i>m2</i>	second coordinate of base pair

Returns

energy change of the move in kcal/mol

11.29.2.4 energy_of_move_pt()

```
int energy_of_move_pt (
    short * pt,
    short * s,
    short * s1,
    int m1,
    int m2 )
```

Calculate energy of a move (closing or opening of a base pair)

If the parameters m1 and m2 are negative, it is deletion (opening) of a base pair, otherwise it is insertion (opening).

See also

[make_pair_table\(\)](#), [energy_of_move\(\)](#)

Parameters

<i>pt</i>	the pair table of the secondary structure
<i>s</i>	encoded RNA sequence
<i>s1</i>	encoded RNA sequence

Parameters

<i>m1</i>	first coordinate of base pair
<i>m2</i>	second coordinate of base pair

Returns

energy change of the move in 10cal/mol

11.29.2.5 loop_energy()

```
int loop_energy (
    short * ptable,
    short * s,
    short * s1,
    int i )
```

Calculate energy of a loop.

Parameters

<i>ptable</i>	the pair table of the secondary structure
<i>s</i>	encoded RNA sequence
<i>s1</i>	encoded RNA sequence
<i>i</i>	position of covering base pair

Returns

free energy of the loop in 10cal/mol

11.29.2.6 assign_plist_from_db()

```
void assign_plist_from_db (
    plist ** pl,
    const char * struc,
    float pr )
```

Create a plist from a dot-bracket string.

The dot-bracket string is parsed and for each base pair an entry in the plist is created. The probability of each pair in the list is set by a function parameter.

The end of the plist is marked by sequence positions *i* as well as *j* equal to 0. This condition should be used to stop looping over its entries

This function is threadsafe

Parameters

<i>pl</i>	A pointer to the plist that is to be created
<i>struc</i>	The secondary structure in dot-bracket notation
<i>pr</i>	The probability for each base pair

11.29.2.7 LoopEnergy()

```
int LoopEnergy (
    int n1,
    int n2,
    int type,
```

```
int type_2,  
int sil,  
int sjl,  
int spl,  
int sql )
```

Deprecated {This function is deprecated and will be removed soon. Use [E_IntLoop\(\)](#) instead!}

11.29.2.8 HairpinE()

```
int HairpinE (  
    int size,  
    int type,  
    int sil,  
    int sjl,  
    const char * string )
```

Deprecated {This function is deprecated and will be removed soon. Use [E_Hairpin\(\)](#) instead!}

11.29.2.9 initialize_fold()

```
void initialize_fold (  
    int length )
```

Allocate arrays for folding

Deprecated {This function is deprecated and will be removed soon!}

11.29.2.10 energy_of_struct()

```
float energy_of_struct (  
    const char * string,  
    const char * structure )
```

Calculate the free energy of an already folded RNA

Note

This function is not entirely threadsafe! Depending on the state of the global variable [eos_debug](#) it prints energy information to stdout or not...

Deprecated This function is deprecated and should not be used in future programs! Use [energy_of_structure\(\)](#) instead!

See also

[energy_of_structure](#), [energy_of_circ_struct\(\)](#), [energy_of_struct_pt\(\)](#)

Parameters

<i>string</i>	RNA sequence
<i>structure</i>	secondary structure in dot-bracket notation

Returns

the free energy of the input structure given the input sequence in kcal/mol

11.29.2.11 energy_of_struct_pt()

```
int energy_of_struct_pt (
    const char * string,
    short * ptable,
    short * s,
    short * s1 )
```

Calculate the free energy of an already folded RNA

Note

This function is not entirely threadsafe! Depending on the state of the global variable `eos_debug` it prints energy information to stdout or not...

Deprecated This function is deprecated and should not be used in future programs! Use `energy_of_structure_pt()` instead!

See also

`make_pair_table()`, `energy_of_structure()`

Parameters

<i>string</i>	RNA sequence
<i>ptable</i>	the pair table of the secondary structure
<i>s</i>	encoded RNA sequence
<i>s1</i>	encoded RNA sequence

Returns

the free energy of the input structure given the input sequence in 10kcal/mol

11.29.2.12 energy_of_circ_struct()

```
float energy_of_circ_struct (
    const char * string,
    const char * structure )
```

Calculate the free energy of an already folded circular RNA

Note

This function is not entirely threadsafe! Depending on the state of the global variable `eos_debug` it prints energy information to stdout or not...

Deprecated This function is deprecated and should not be used in future programs Use `energy_of_circ_structure()` instead!

See also

`energy_of_circ_structure()`, `energy_of_struct()`, `energy_of_struct_pt()`

Parameters

<i>string</i>	RNA sequence
<i>structure</i>	secondary structure in dot-bracket notation

Returns

the free energy of the input structure given the input sequence in kcal/mol

11.30 fold.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_FOLD_H__
00002 #define __VIENNA_RNA_PACKAGE_FOLD_H__
00003
00004 #include "data_structures.h"
00005
00006 #ifdef __GNUC__
00007 #define DEPRECATED(func) func __attribute__((deprecated))
00008 #else
00009 #define DEPRECATED(func) func
00010 #endif
00011
00061 extern int logML;
00062
00064 extern int uniq_ML;
00065
00067 extern int cut_point;
00068
00073 extern int eos_debug;
00074
00075
00119 float fold_par( const char *sequence,
00120                char *structure,
00121                paramT *parameters,
00122                int is_constrained,
00123                int is_circular);
00124
00143 float fold( const char *sequence,
00144            char *structure);
00145
00164 float circfold( const char *sequence,
00165                char *structure);
00166
00167
00195 float energy_of_structure(const char *string,
00196                          const char *structure,
00197                          int verbosity_level);
00198
00214 float energy_of_struct_par( const char *string,
00215                          const char *structure,
00216                          paramT *parameters,
00217                          int verbosity_level);
00218
00237 float energy_of_circ_structure( const char *string,
00238                          const char *structure,
00239                          int verbosity_level);
00240
00256 float energy_of_circ_struct_par(const char *string,
00257                          const char *structure,
00258                          paramT *parameters,
00259                          int verbosity_level);
00260
00261
00262 float energy_of_gquad_structure(const char *string,
00263                          const char *structure,
00264                          int verbosity_level);
00265
00266 float energy_of_gquad_struct_par( const char *string,
00267                          const char *structure,
00268                          paramT *parameters,
00269                          int verbosity_level);
00270
00291 int energy_of_structure_pt( const char *string,
00292                          short *ptable,
00293                          short *s,
00294                          short *sl,
00295                          int verbosity_level);
00296
00314 int energy_of_struct_pt_par(const char *string,
00315                          short *ptable,
00316                          short *s,
00317                          short *sl,
00318                          paramT *parameters,
00319                          int verbosity_level);
00320
00327 void free_arrays(void);
00328
00329

```

```

00335 void parenthesis_structure(char *structure,
00336                             bondT *bp,
00337                             int length);
00338
00345 void parenthesis_zucker( char *structure,
00346                          bondT *bp,
00347                          int length);
00348
00349 void letter_structure(char *structure,
00350                      bondT *bp,
00351                      int length);
00352
00353
00359 void update_fold_params(void);
00360
00366 void update_fold_params_par(paramT *parameters);
00367
00373 char *backtrack_fold_from_pair(char *sequence,
00374                                int i,
00375                                int j);
00376
00390 float energy_of_move( const char *string,
00391                      const char *structure,
00392                      int m1,
00393                      int m2);
00394
00395
00411 int energy_of_move_pt(short *pt,
00412                      short *s,
00413                      short *s1,
00414                      int m1,
00415                      int m2);
00416
00426 int loop_energy(short *ptable,
00427                 short *s,
00428                 short *s1,
00429                 int i);
00430
00436 void export_fold_arrays(int **f5_p,
00437                         int **c_p,
00438                         int **fML_p,
00439                         int **fM1_p,
00440                         int **indx_p,
00441                         char **ptype_p);
00442
00448 void export_fold_arrays_par(int **f5_p,
00449                             int **c_p,
00450                             int **fML_p,
00451                             int **fM1_p,
00452                             int **indx_p,
00453                             char **ptype_p,
00454                             paramT **P_p);
00455
00461 void export_circfold_arrays(int *Fc_p,
00462                             int *FcH_p,
00463                             int *FcI_p,
00464                             int *FcM_p,
00465                             int **fM2_p,
00466                             int **f5_p,
00467                             int **c_p,
00468                             int **fML_p,
00469                             int **fM1_p,
00470                             int **indx_p,
00471                             char **ptype_p);
00472
00478 void export_circfold_arrays_par(int *Fc_p,
00479                                 int *FcH_p,
00480                                 int *FcI_p,
00481                                 int *FcM_p,
00482                                 int **fM2_p,
00483                                 int **f5_p,
00484                                 int **c_p,
00485                                 int **fML_p,
00486                                 int **fM1_p,
00487                                 int **indx_p,
00488                                 char **ptype_p,
00489                                 paramT **P_p);
00490
00491
00509 void assign_plist_from_db(plist **pl,
00510                          const char *struc,
00511                          float pr);
00512
00513 /* finally moved the loop energy function declarations to this header... */
00514 /* BUT: The functions only exist for backward compatibility reasons! */
00515 /* You better include "loop_energies.h" and call the functions: */
00516 /* E_Hairpin() and E_IntLoop() which are (almost) threadsafe as they get */

```

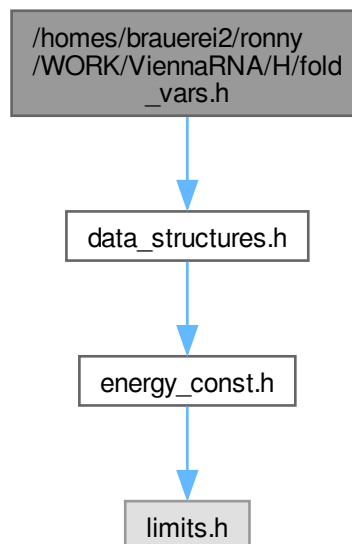
```

00517 /* a pointer to the energy parameter datastructure as additional argument */
00518
00523 DEPRECATED(int LoopEnergy(int n1,
00524                             int n2,
00525                             int type,
00526                             int type_2,
00527                             int sil,
00528                             int sj1,
00529                             int spl,
00530                             int sql));
00531
00536 DEPRECATED(int HairpinE(int size,
00537                          int type,
00538                          int sil,
00539                          int sj1,
00540                          const char *string));
00541
00547 DEPRECATED(void initialize_fold(int length));
00548
00563 DEPRECATED(float energy_of_struct(const char *string,
00564                                   const char *structure));
00565
00582 DEPRECATED(int energy_of_struct_pt(const char *string,
00583                                   short *ptable,
00584                                   short *s,
00585                                   short *sl));
00586
00601 DEPRECATED(float energy_of_circ_struct(const char *string,
00602                                       const char *structure));
00603
00604 #endif

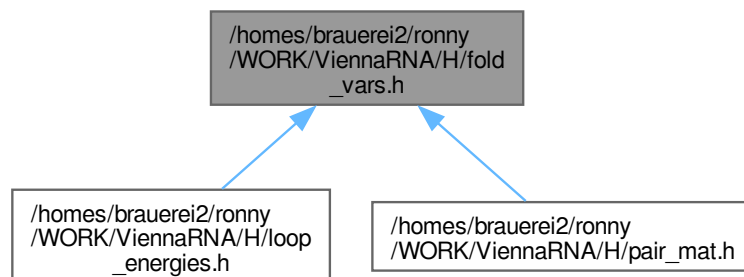
```

11.31 /homes/brauerei2/ronny/WORK/ViennaRNA/H/fold_vars.h File Reference

Here all all declarations of the global variables used throughout RNAlib.
Include dependency graph for fold_vars.h:



This graph shows which files directly or indirectly include this file:



Functions

- void **set_model_details** (**model_detailsT** *md)
Set default model details.

Variables

- int **fold_constrained**
Global switch to activate/deactivate folding with structure constraints.
- int **noLonelyPairs**
Global switch to avoid/allow helices of length 1.
- int **dangles**
Switch the energy model for dangling end contributions (0, 1, 2, 3)
- int **noGU**
Global switch to forbid/allow GU base pairs at all.
- int **no_closingGU**
GU allowed only inside stacks if set to 1.
- int **tetra_loop**
Include special stabilizing energies for some tri-, tetra- and hexa-loops;.
- int **energy_set**
0 = BP; 1=any mit GC; 2=any mit AU-parameter
- int **circ**
backward compatibility variable.. this does not effect anything
- int **csv**
generate comma seperated output
- int **oldAliEn**
- int **ribo**
- char * **RibosumFile**
- char * **nonstandards**
contains allowed non standard base pairs
- double **temperature**
Rescale energy parameters to a temperature in degC.
- int **james_rule**
- int **logML**
- int **cut_point**
Marks the position (starting from 1) of the first nucleotide of the second molecule within the concatenated sequence.

- `bondT * base_pair`
Contains a list of base pairs after a call to `fold()`.
- `double * pr`
A pointer to the base pair probability matrix.
- `int * iindx`
index array to move through `pr`.
- `double pf_scale`
A scaling factor used by `pf_fold()` to avoid overflows.
- `int do_backtrack`
do backtracking, i.e. compute secondary structures or base pair probabilities
- `char backtrack_type`
A backtrack array marker for `inverse_fold()`
- `int gquad`
Allow G-quadruplex formation.
- `int canonicalBPonly`

11.31.1 Detailed Description

Here all all declarations of the global variables used throughout RNAlib.

11.31.2 Function Documentation

11.31.2.1 set_model_details()

```
void set_model_details (
    model_detailsT * md )
```

Set default model details.

Use this function if you wish to initialize a `model_detailsT` data structure with its default values, i.e. the global model settings

See also

Parameters

<code>md</code>	A pointer to the data structure that shall be initialized
-----------------	---

11.31.3 Variable Documentation

11.31.3.1 noLonelyPairs

```
int noLonelyPairs [extern]
```

Global switch to avoid/allow helices of length 1.

Disallow all pairs which can only occur as lonely pairs (i.e. as helix of length 1). This avoids lonely base pairs in the predicted structures in most cases.

11.31.3.2 dangles

```
int dangles [extern]
```

Switch the energy model for dangling end contributions (0, 1, 2, 3)

If set to 0 no stabilizing energies are assigned to bases adjacent to helices in free ends and multiloops (so called dangling ends). Normally (`dangles = 1`) dangling end energies are assigned only to unpaired bases and a base cannot participate simultaneously in two dangling ends. In the partition function algorithm `pf_fold()` these checks are neglected. If `dangles` is set to 2, all folding routines will follow this convention. This treatment of dangling ends gives more favorable energies to helices directly adjacent to one another, which can be beneficial since such helices

often do engage in stabilizing interactions through co-axial stacking.

If dangles = 3 co-axial stacking is explicitly included for adjacent helices in mutli-loops. The option affects only mfe folding and energy evaluation (`fold()` and `energy_of_structure()`), as well as suboptimal folding (`subopt()`) via re-evaluation of energies. Co-axial stacking with one intervening mismatch is not considered so far.

Default is 2 in most algorithms, partition function algorithms can only handle 0 and 2

11.31.3.3 tetra_loop

```
int tetra_loop [extern]
```

Include special stabilizing energies for some tri-, tetra- and hexa-loops;.

default is 1.

11.31.3.4 energy_set

```
int energy_set [extern]
```

0 = BP; 1=any mit GC; 2=any mit AU-parameter

If set to 1 or 2: fold sequences from an artificial alphabet ABCD..., where A pairs B, C pairs D, etc. using either GC (1) or AU parameters (2); default is 0, you probably don't want to change it.

11.31.3.5 oldAliEn

```
int oldAliEn [extern]
```

use old alifold energies (with gaps)

11.31.3.6 ribo

```
int ribo [extern]
```

use ribosum matrices

11.31.3.7 RibosumFile

```
char* RibosumFile [extern]
```

warning this variable will vanish in the future ribosums will be compiled in instead

11.31.3.8 nonstandards

```
char* nonstandards [extern]
```

contains allowed non standard base pairs

Lists additional base pairs that will be allowed to form in addition to GC, CG, AU, UA, GU and UG. Nonstandard base pairs are given a stacking energy of 0.

11.31.3.9 temperature

```
double temperature [extern]
```

Rescale energy parameters to a temperature in degC.

Default is 37C. You have to call the `update_..._params()` functions after changing this parameter.

11.31.3.10 james_rule

```
int james_rule [extern]
```

interior loops of size 2 get energy 0.8Kcal and no mismatches, default 1

11.31.3.11 logML

```
int logML [extern]
```

use logarithmic multiloop energy function

11.31.3.12 cut_point

```
int cut_point [extern]
```

Marks the position (starting from 1) of the first nucleotide of the second molecule within the concatenated sequence. To evaluate the energy of a duplex structure (a structure formed by two strands), concatenate the two sequences and set it to the first base of the second strand in the concatenated sequence. The default value of -1 stands for single molecule folding. The cut_point variable is also used by [PS_rna_plot\(\)](#) and [PS_dot_plot\(\)](#) to mark the chain break in postscript plots.

11.31.3.13 base_pair

```
bondT* base_pair [extern]
```

Contains a list of base pairs after a call to [fold\(\)](#).
base_pair[0].i contains the total number of pairs.

Deprecated Do not use this variable anymore!

11.31.3.14 pr

```
double* pr [extern]
```

A pointer to the base pair probability matrix.

Deprecated Do not use this variable anymore!

11.31.3.15 iindx

```
int* iindx [extern]
```

index array to move through pr.

The probability for base i and j to form a pair is in pr[iindx[i]-j].

Deprecated Do not use this variable anymore!

11.31.3.16 pf_scale

```
double pf_scale [extern]
```

A scaling factor used by [pf_fold\(\)](#) to avoid overflows.

Should be set to approximately $\exp((-F/kT)/length)$, where F is an estimate for the ensemble free energy, for example the minimum free energy. You must call [update_pf_params\(\)](#) after changing this parameter.

If pf_scale is -1 (the default), an estimate will be provided automatically when computing partition functions, e.g. [pf_fold\(\)](#). The automatic estimate is usually insufficient for sequences more than a few hundred bases long.

11.31.3.17 do_backtrack

```
int do_backtrack [extern]
```

do backtracking, i.e. compute secondary structures or base pair probabilities

If 0, do not calculate pair probabilities in [pf_fold\(\)](#); this is about twice as fast. Default is 1.

11.31.3.18 backtrack_type

```
char backtrack_type [extern]
```

A backtrack array marker for [inverse_fold\(\)](#)

If set to 'C': force (1,N) to be paired, 'M' fold as if the sequence were inside a multi-loop. Otherwise ('F') the usual mfe structure is computed.

11.31.3.19 canonicalBPonly

```
int canonicalBPonly [extern]
```

Do not use this variable, it will eventually be removed in one of the next versions

11.32 fold_vars.h

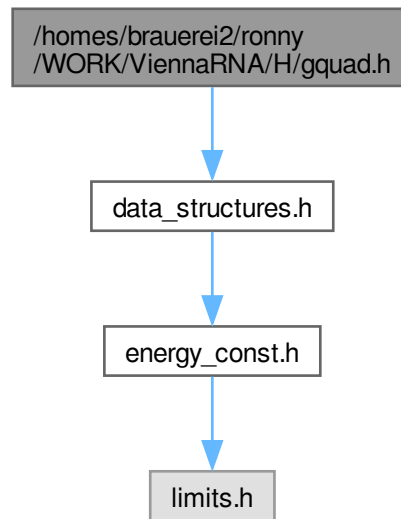
[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_FOLD_VARS_H__
00002 #define __VIENNA_RNA_PACKAGE_FOLD_VARS_H__
00003
00004 #include "data_structures.h"
00005
00012 #define PUBLIC
00013 #define PRIVATE static
00014
00018 extern int fold_constrained;
00019
00027 extern int noLonelyPairs;
00028
00050 extern int dangles;
00051
00055 extern int noGU;
00056
00060 extern int no_closingGU;
00061
00067 extern int tetra_loop;
00068
00076 extern int energy_set;
00077
00081 extern int circ;
00082
00086 extern int csv;
00087
00091 extern int oldAliEn;
00095 extern int ribo;
00096
00101 extern char *RibosumFile;
00102
00110 extern char *nonstandards;
00111
00118 extern double temperature;
00119
00124 extern int james_rule;
00125
00129 extern int logML;
00130
00142 extern int cut_point;
00143
00150 extern bondT *base_pair;
00151
00157 extern FLT_OR_DBL *pr;
00158
00165 extern int *iindx;
00166
00178 extern double pf_scale;
00179
00186 extern int do_backtrack;
00187
00195 extern char backtrack_type;
00196
00200 extern int gquad;
00201
00205 extern int canonicalBPonly;
00206
00207 char * option_string(void);
00208
00219 void set_model_details(model_detailsT *md);
00220
00221 #endif
```

11.33 /homes/brauerei2/ronny/WORK/ViennaRNA/H/gquad.h File Reference

Various functions related to G-quadruplex computations.

Include dependency graph for gquad.h:



Functions

- int * [get_gquad_matrix](#) (short *S, [paramT](#) *P)
Get a triangular matrix prefilled with minimum free energy contributions of G-quadruplexes.
- int [parse_gquad](#) (const char *struc, int *L, int l[3])
- PRIVATE int [backtrack_GQuad_IntLoop](#) (int c, int i, int j, int type, short *S, int *ggg, int *index, int *p, int *q, [paramT](#) *P)
- PRIVATE int [backtrack_GQuad_IntLoop_L](#) (int c, int i, int j, int type, short *S, int **ggg, int maxdist, int *p, int *q, [paramT](#) *P)

11.33.1 Detailed Description

Various functions related to G-quadruplex computations.

11.33.2 Function Documentation

11.33.2.1 [get_gquad_matrix\(\)](#)

```
int * get_gquad_matrix (
    short * S,
    paramT * P )
```

Get a triangular matrix prefilled with minimum free energy contributions of G-quadruplexes.

At each position ij in the matrix, the minimum free energy of any G-quadruplex delimited by i and j is stored. If no G-quadruplex formation is possible, the matrix element is set to INF. Access the elements in the matrix via matrix[indx[j]+i]. To get the integer array indx see [get_jindx\(\)](#).

See also

[get_jindx\(\)](#), [encode_sequence\(\)](#)

Parameters

<i>S</i>	The encoded sequence
<i>P</i>	A pointer to the data structure containing the precomputed energy contributions

Returns

A pointer to the G-quadruplex contribution matrix

11.33.2.2 `parse_gquad()`

```
int parse_gquad (
    const char * struc,
    int * L,
    int l[3] )
```

given a dot-bracket structure (possibly) containing gquads encoded by '+' signs, find first gquad, return end position or 0 if none found Upon return L and l[] contain the number of stacked layers, as well as the lengths of the linker regions.

To parse a string with many gquads, call `parse_gquad` repeatedly e.g. `end1 = parse_gquad(struc, &L, l); ... ; end2 = parse_gquad(struc+end1, &L, l); end2+=end1; ... ; end3 = parse_gquad(struc+end2, &L, l); end3+=end2; ... ;`

11.33.2.3 `backtrack_GQuad_IntLoop()`

```
PRIVATE int backtrack_GQuad_IntLoop (
    int c,
    int i,
    int j,
    int type,
    short * S,
    int * ggg,
    int * index,
    int * p,
    int * q,
    paramT * P )
```

backtrack an interior loop like enclosed g-quadruplex with closing pair (i,j)

Parameters

<i>c</i>	The total contribution the loop should resemble
<i>i</i>	position i of enclosing pair
<i>j</i>	position j of enclosing pair
<i>type</i>	base pair type of enclosing pair (must be reverse type)
<i>S</i>	integer encoded sequence
<i>ggg</i>	triangular matrix containing g-quadruplex contributions
<i>index</i>	the index for accessing the triangular matrix
<i>p</i>	here the 5' position of the gquad is stored
<i>q</i>	here the 3' position of the gquad is stored
<i>P</i>	the datastructure containing the precalculated contributions

Returns

1 on success, 0 if no gquad found

11.33.2.4 backtrack_GQuad_IntLoop_L()

```
PRIVATE int backtrack_GQuad_IntLoop_L (
    int c,
    int i,
    int j,
    int type,
    short * S,
    int ** ggg,
    int maxdist,
    int * p,
    int * q,
    paramT * P )
```

backtrack an interior loop like enclosed g-quadruplex with closing pair (i,j) with underlying Lfold matrix

Parameters

<i>c</i>	The total contribution the loop should resemble
<i>i</i>	position i of enclosing pair
<i>j</i>	position j of enclosing pair
<i>type</i>	base pair type of enclosing pair (must be reverse type)
<i>S</i>	integer encoded sequence
<i>ggg</i>	triangular matrix containing g-quadruplex contributions
<i>p</i>	here the 5' position of the gquad is stored
<i>q</i>	here the 3' position of the gquad is stored
<i>P</i>	the datastructure containing the precalculated contibutions

Returns

1 on success, 0 if no gquad found

11.34 gquad.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_GQUAD_H__
00002 #define __VIENNA_RNA_PACKAGE_GQUAD_H__
00003
00004 #include "data_structures.h"
00005
00006 #ifndef INLINE
00007 #ifdef __GNUC__
00008 # define INLINE inline
00009 #else
00010 # define INLINE
00011 #endif
00012 #endif
00013
00020 int E_gquad(int L,
00021             int l[3],
00022             paramT *P);
00023
00024 FLT_OR_DBL exp_E_gquad( int L,
00025                          int l[3],
00026                          pf_paramT *pf);
00027
00028 int E_gquad_ali(int i,
00029                 int L,
00030                 int l[3],
00031                 const short **S,
00032                 int n_seq,
00033                 paramT *P);
```



```

00034
00035
00036 void      E_gquad_ali_en( int i,
00037                          int L,
00038                          int l[3],
00039                          const short **S,
00040                          int n_seq,
00041                          int en[2],
00042                          paramT *P);
00043
00060 int      *get_gquad_matrix(short *S, paramT *P);
00061
00062 int      *get_gquad_ali_matrix(short *S_cons,
00063                               short **S,
00064                               int n_seq,
00065                               paramT *P);
00066
00067 FLT_OR_DBL *get_gquad_pf_matrix( short *S,
00068                                  FLT_OR_DBL *scale,
00069                                  pf_paramT *pf);
00070
00071 int      **get_gquad_L_matrix( short *S,
00072                               int start,
00073                               int maxdist,
00074                               int n,
00075                               int **g,
00076                               paramT *P);
00077
00078 void      get_gquad_pattern_mfe(short *S,
00079                                int i,
00080                                int j,
00081                                paramT *P,
00082                                int *L,
00083                                int l[3]);
00084
00085 void      get_gquad_pattern_exhaustive( short *S,
00086                                         int i,
00087                                         int j,
00088                                         paramT *P,
00089                                         int *L,
00090                                         int *l,
00091                                         int threshold);
00092
00093
00094 void      get_gquad_pattern_pf( short *S,
00095                                int i,
00096                                int j,
00097                                pf_paramT *pf,
00098                                int *L,
00099                                int l[3]);
00100
00101 plist     *get_plist_gquad_from_pr( short *S,
00102                                    int gi,
00103                                    int gj,
00104                                    FLT_OR_DBL *G,
00105                                    FLT_OR_DBL *probs,
00106                                    FLT_OR_DBL *scale,
00107                                    pf_paramT *pf);
00108 plist     *get_plist_gquad_from_pr_max(short *S,
00109                                       int gi,
00110                                       int gj,
00111                                       FLT_OR_DBL *G,
00112                                       FLT_OR_DBL *probs,
00113                                       FLT_OR_DBL *scale,
00114                                       int *L,
00115                                       int l[3],
00116                                       pf_paramT *pf);
00117
00118 plist     *get_plist_gquad_from_db( const char *structure,
00119                                     float pr);
00120
00121 int      get_gquad_count(short *S,
00122                          int i,
00123                          int j);
00124
00125 int      get_gquad_layer_count(short *S,
00126                                int i,
00127                                int j);
00128
00129
00140 int      parse_gquad(const char *struc, int *L, int l[3]);
00141
00142
00143
00161 INLINE PRIVATE int backtrack_GQuad_IntLoop(int c,
00162                                             int i,
00163                                             int j,

```

```

00164                                     int type,
00165                                     short *S,
00166                                     int *ggg,
00167                                     int *index,
00168                                     int *p,
00169                                     int *q,
00170                                     paramT *P){
00171
00172     int energy, dangles, k, l, maxl, minl, c0, ll;
00173     short si, sj;
00174
00175     dangles = P->model_details.dangles;
00176     si      = S[i + 1];
00177     sj      = S[j - 1];
00178     energy  = 0;
00179
00180     if(dangles == 2)
00181         energy += P->mismatchI[type][si][sj];
00182
00183     if(type > 2)
00184         energy += P->TerminalAU;
00185
00186     k = i + 1;
00187     if(S[k] == 3){
00188         if(k < j - VRNA_GQUAD_MIN_BOX_SIZE){
00189             minl = j - i + k - MAXLOOP - 2;
00190             c0   = k + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00191             minl = MAX2(c0, minl);
00192             c0   = j - 3;
00193             maxl = k + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00194             maxl = MIN2(c0, maxl);
00195             for(l = minl; l < maxl; l++){
00196                 if(S[l] != 3) continue;
00197                 if(c == energy + ggg[index[l] + k] + P->internal_loop[j - 1 - 1]){
00198                     *p = k; *q = l;
00199                     return 1;
00200                 }
00201             }
00202         }
00203     }
00204
00205     for(k = i + 2;
00206         k < j - VRNA_GQUAD_MIN_BOX_SIZE;
00207         k++){
00208         ll = k - i - 1;
00209         if(ll > MAXLOOP) break;
00210         if(S[k] != 3) continue;
00211         minl = j - i + k - MAXLOOP - 2;
00212         c0   = k + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00213         minl = MAX2(c0, minl);
00214         c0   = j - 1;
00215         maxl = k + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00216         maxl = MIN2(c0, maxl);
00217         for(l = minl; l < maxl; l++){
00218             if(S[l] != 3) continue;
00219             if(c == energy + ggg[index[l] + k] + P->internal_loop[ll + j - 1 - 1]){
00220                 *p = k; *q = l;
00221                 return 1;
00222             }
00223         }
00224     }
00225
00226     l = j - 1;
00227     if(S[l] == 3)
00228         for(k = i + 4;
00229             k < j - VRNA_GQUAD_MIN_BOX_SIZE;
00230             k++){
00231             ll = k - i - 1;
00232             if(ll > MAXLOOP) break;
00233             if(S[k] != 3) continue;
00234             if(c == energy + ggg[index[l] + k] + P->internal_loop[ll]){
00235                 *p = k; *q = l;
00236                 return 1;
00237             }
00238         }
00239
00240     return 0;
00241 }
00242
00259 INLINE PRIVATE int backtrack_GQuad_IntLoop_L(int c,
00260                                             int i,
00261                                             int j,
00262                                             int type,
00263                                             short *S,
00264                                             int **ggg,
00265                                             int maxdist,
00266                                             int *p,

```

```

00267                                     int *q,
00268                                     paramT *P){
00269
00270     int energy, dangles, k, l, maxl, minl, c0, l1;
00271     short si, sj;
00272
00273     dangles = P->model_details.dangles;
00274     si      = S[i + 1];
00275     sj      = S[j - 1];
00276     energy  = 0;
00277
00278     if(dangles == 2)
00279         energy += P->mismatchI[type][si][sj];
00280
00281     if(type > 2)
00282         energy += P->TerminalAU;
00283
00284     k = i + 1;
00285     if(S[k] == 3){
00286         if(k < j - VRNA_GQUAD_MIN_BOX_SIZE){
00287             minl = j - i + k - MAXLOOP - 2;
00288             c0   = k + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00289             minl = MAX2(c0, minl);
00290             c0   = j - 3;
00291             maxl = k + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00292             maxl = MIN2(c0, maxl);
00293             for(l = minl; l < maxl; l++){
00294                 if(S[l] != 3) continue;
00295                 if(c == energy + ggg[k][l - k] + P->internal_loop[j - l - 1]){
00296                     *p = k; *q = l;
00297                     return 1;
00298                 }
00299             }
00300         }
00301     }
00302
00303     for(k = i + 2;
00304         k < j - VRNA_GQUAD_MIN_BOX_SIZE;
00305         k++){
00306         l1 = k - i - 1;
00307         if(l1 > MAXLOOP) break;
00308         if(S[k] != 3) continue;
00309         minl = j - i + k - MAXLOOP - 2;
00310         c0   = k + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00311         minl = MAX2(c0, minl);
00312         c0   = j - 1;
00313         maxl = k + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00314         maxl = MIN2(c0, maxl);
00315         for(l = minl; l < maxl; l++){
00316             if(S[l] != 3) continue;
00317             if(c == energy + ggg[k][l - k] + P->internal_loop[l1 + j - l - 1]){
00318                 *p = k; *q = l;
00319                 return 1;
00320             }
00321         }
00322     }
00323
00324     l = j - 1;
00325     if(S[l] == 3)
00326         for(k = i + 4;
00327             k < j - VRNA_GQUAD_MIN_BOX_SIZE;
00328             k++){
00329             l1 = k - i - 1;
00330             if(l1 > MAXLOOP) break;
00331             if(S[k] != 3) continue;
00332             if(c == energy + ggg[k][l - k] + P->internal_loop[l1]){
00333                 *p = k; *q = l;
00334                 return 1;
00335             }
00336         }
00337
00338     return 0;
00339 }
00340
00341 INLINE PRIVATE
00342 int
00343 E_GQuad_IntLoop(int i,
00344                 int j,
00345                 int type,
00346                 short *S,
00347                 int *ggg,
00348                 int *index,
00349                 paramT *P){
00350
00351     int energy, ge, en1, en2, dangles, p, q, l1, minq, maxq;
00352     int c0, c1, c2, c3, up, d53, d5, d3;
00353     short si, sj;

```

```

00354
00355 dangles = P->model_details.dangles;
00356 si      = S[i + 1];
00357 sj      = S[j - 1];
00358 energy  = 0;
00359
00360 if(dangles == 2)
00361     energy += P->mismatchI[type][si][sj];
00362
00363 if(type > 2)
00364     energy += P->TerminalAU;
00365
00366 ge = INF;
00367
00368 p = i + 1;
00369 if(S[p] == 3){
00370     if(p < j - VRNA_GQUAD_MIN_BOX_SIZE){
00371         minq = j - i + p - MAXLOOP - 2;
00372         c0   = p + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00373         minq = MAX2(c0, minq);
00374         c0   = j - 3;
00375         maxq = p + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00376         maxq = MIN2(c0, maxq);
00377         for(q = minq; q < maxq; q++){
00378             if(S[q] != 3) continue;
00379             c0 = energy + ggg[index[q] + p] + P->internal_loop[j - q - 1];
00380             ge = MIN2(ge, c0);
00381         }
00382     }
00383 }
00384
00385 for(p = i + 2;
00386     p < j - VRNA_GQUAD_MIN_BOX_SIZE;
00387     p++){
00388     ll = p - i - 1;
00389     if(ll > MAXLOOP) break;
00390     if(S[p] != 3) continue;
00391     minq = j - i + p - MAXLOOP - 2;
00392     c0   = p + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00393     minq = MAX2(c0, minq);
00394     c0   = j - 1;
00395     maxq = p + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00396     maxq = MIN2(c0, maxq);
00397     for(q = minq; q < maxq; q++){
00398         if(S[q] != 3) continue;
00399         c0 = energy + ggg[index[q] + p] + P->internal_loop[ll + j - q - 1];
00400         ge = MIN2(ge, c0);
00401     }
00402 }
00403
00404 q = j - 1;
00405 if(S[q] == 3)
00406     for(p = i + 4;
00407         p < j - VRNA_GQUAD_MIN_BOX_SIZE;
00408         p++){
00409         ll = p - i - 1;
00410         if(ll > MAXLOOP) break;
00411         if(S[p] != 3) continue;
00412         c0 = energy + ggg[index[q] + p] + P->internal_loop[ll];
00413         ge = MIN2(ge, c0);
00414     }
00415
00416 #if 0
00417 /* here comes the additional stuff for the odd dangle models */
00418 if(dangles % 1){
00419     en1 = energy + P->dangle5[type][si];
00420     en2 = energy + P->dangle5[type][sj];
00421     en3 = energy + P->mismatchI[type][si][sj];
00422
00423     /* first case with 5' dangle (i.e. j-1) onto enclosing pair */
00424     p = i + 1;
00425     if(S[p] == 3){
00426         if(p < j - VRNA_GQUAD_MIN_BOX_SIZE){
00427             minq = j - i + p - MAXLOOP - 2;
00428             c0   = p + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00429             minq = MAX2(c0, minq);
00430             c0   = j - 4;
00431             maxq = p + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00432             maxq = MIN2(c0, maxq);
00433             for(q = minq; q < maxq; q++){
00434                 if(S[q] != 3) continue;
00435                 c0 = en1 + ggg[index[q] + p] + P->internal_loop[j - q - 1];
00436                 ge = MIN2(ge, c0);
00437             }
00438         }
00439     }
00440

```

```

00441     for(p = i + 2; p < j - VRNA_GQUAD_MIN_BOX_SIZE; p++){
00442         ll = p - i - 1;
00443         if(ll>MAXLOOP) break;
00444         if(S[p] != 3) continue;
00445         minq = j - i + p - MAXLOOP - 2;
00446         c0 = p + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00447         minq = MAX2(c0, minq);
00448         c0 = j - 2;
00449         maxq = p + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00450         maxq = MIN2(c0, maxq);
00451         for(q = minq; q < maxq; q++){
00452             if(S[q] != 3) continue;
00453             c0 = en1 + ggg[index[q] + p] + P->internal_loop[ll + j - q - 1];
00454             ge = MIN2(ge, c0);
00455         }
00456     }
00457
00458     q = j - 2;
00459     if(S[q] == 3)
00460         for(p = i + 4; p < j - VRNA_GQUAD_MIN_BOX_SIZE; p++){
00461             ll = p - i - 1;
00462             if(ll>MAXLOOP) break;
00463             if(S[p] != 3) continue;
00464             c0 = en1 + ggg[index[q] + p] + P->internal_loop[ll + 1];
00465             ge = MIN2(ge, c0);
00466         }
00467
00468     /* second case with 3' dangle (i.e. i+1) onto enclosing pair */
00469 }
00471 #endif
00472 return ge;
00473 }
00474
00475 INLINE PRIVATE
00476 int *
00477 E_GQuad_IntLoop_exhaustive( int i,
00478                             int j,
00479                             int **p_p,
00480                             int **q_p,
00481                             int type,
00482                             short *S,
00483                             int *ggg,
00484                             int threshold,
00485                             int *index,
00486                             paramT *P){
00487
00488     int energy, *ge, en1, en2, dangles, p, q, ll, minq, maxq;
00489     int c0, c1, c2, c3, up, d53, d5, d3;
00490     short si, sj;
00491     int cnt = 0;
00492
00493     dangles = P->model_details.dangles;
00494     si = S[i + 1];
00495     sj = S[j - 1];
00496     energy = 0;
00497
00498     if(dangles == 2)
00499         energy += P->mismatchI[type][si][sj];
00500
00501     if(type > 2)
00502         energy += P->TerminalAU;
00503
00504     /* guess how many gquads are possible in interval [i+1,j-1] */
00505     *p_p = (int *)space(sizeof(int) * 256);
00506     *q_p = (int *)space(sizeof(int) * 256);
00507     ge = (int *)space(sizeof(int) * 256);
00508
00509     p = i + 1;
00510     if(S[p] == 3){
00511         if(p < j - VRNA_GQUAD_MIN_BOX_SIZE){
00512             minq = j - i + p - MAXLOOP - 2;
00513             c0 = p + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00514             minq = MAX2(c0, minq);
00515             c0 = j - 3;
00516             maxq = p + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00517             maxq = MIN2(c0, maxq);
00518             for(q = minq; q < maxq; q++){
00519                 if(S[q] != 3) continue;
00520                 c0 = energy + ggg[index[q] + p] + P->internal_loop[j - q - 1];
00521                 if(c0 <= threshold){
00522                     ge[cnt] = energy + P->internal_loop[j - q - 1];
00523                     (*p_p)[cnt] = p;
00524                     (*q_p)[cnt++] = q;
00525                 }
00526             }
00527         }

```

```

00528     }
00529
00530     for(p = i + 2;
00531         p < j - VRNA_GQUAD_MIN_BOX_SIZE;
00532         p++){
00533         ll = p - i - 1;
00534         if(ll>MAXLOOP) break;
00535         if(S[p] != 3) continue;
00536         minq = j - i + p - MAXLOOP - 2;
00537         c0 = p + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00538         minq = MAX2(c0, minq);
00539         c0 = j - 1;
00540         maxq = p + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00541         maxq = MIN2(c0, maxq);
00542         for(q = minq; q < maxq; q++){
00543             if(S[q] != 3) continue;
00544             c0 = energy + ggg[index[q] + p] + P->internal_loop[ll + j - q - 1];
00545             if(c0 <= threshold){
00546                 ge[cnt] = energy + P->internal_loop[ll + j - q - 1];
00547                 (*p_p)[cnt] = p;
00548                 (*q_q)[cnt++] = q;
00549             }
00550         }
00551     }
00552
00553     q = j - 1;
00554     if(S[q] == 3)
00555         for(p = i + 4;
00556             p < j - VRNA_GQUAD_MIN_BOX_SIZE;
00557             p++){
00558             ll = p - i - 1;
00559             if(ll>MAXLOOP) break;
00560             if(S[p] != 3) continue;
00561             c0 = energy + ggg[index[q] + p] + P->internal_loop[ll];
00562             if(c0 <= threshold){
00563                 ge[cnt] = energy + P->internal_loop[ll];
00564                 (*p_p)[cnt] = p;
00565                 (*q_q)[cnt++] = q;
00566             }
00567         }
00568
00569     (*p_p)[cnt] = -1;
00570
00571     return ge;
00572 }
00573
00574
00575 INLINE PRIVATE
00576 int
00577 E_GQuad_IntLoop_L(int i,
00578                   int j,
00579                   int type,
00580                   short *S,
00581                   int **ggg,
00582                   int maxdist,
00583                   paramT *P){
00584
00585     int energy, ge, en1, en2, dangles, p, q, ll, minq, maxq;
00586     int c0, c1, c2, c3, up, d53, d5, d3;
00587     short si, sj;
00588
00589     dangles = P->model_details.dangles;
00590     si = S[i + 1];
00591     sj = S[j - 1];
00592     energy = 0;
00593
00594     if(dangles == 2)
00595         energy += P->mismatchI[type][si][sj];
00596
00597     if(type > 2)
00598         energy += P->TerminalAU;
00599
00600     ge = INF;
00601
00602     p = i + 1;
00603     if(S[p] == 3){
00604         if(p < j - VRNA_GQUAD_MIN_BOX_SIZE){
00605             minq = j - i + p - MAXLOOP - 2;
00606             c0 = p + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00607             minq = MAX2(c0, minq);
00608             c0 = j - 3;
00609             maxq = p + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00610             maxq = MIN2(c0, maxq);
00611             for(q = minq; q < maxq; q++){
00612                 if(S[q] != 3) continue;
00613                 c0 = energy + ggg[p][q-p] + P->internal_loop[j - q - 1];
00614                 ge = MIN2(ge, c0);

```

```

00615     }
00616     }
00617 }
00618
00619 for(p = i + 2;
00620     p < j - VRNA_GQUAD_MIN_BOX_SIZE;
00621     p++){
00622     l1 = p - i - 1;
00623     if(l1>MAXLOOP) break;
00624     if(S[p] != 3) continue;
00625     minq = j - i + p - MAXLOOP - 2;
00626     c0 = p + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00627     minq = MAX2(c0, minq);
00628     c0 = j - 1;
00629     maxq = p + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00630     maxq = MIN2(c0, maxq);
00631     for(q = minq; q < maxq; q++){
00632         if(S[q] != 3) continue;
00633         c0 = energy + ggg[p][q - p] + P->internal_loop[l1 + j - q - 1];
00634         ge = MIN2(ge, c0);
00635     }
00636 }
00637
00638 q = j - 1;
00639 if(S[q] == 3)
00640     for(p = i + 4;
00641         p < j - VRNA_GQUAD_MIN_BOX_SIZE;
00642         p++){
00643         l1 = p - i - 1;
00644         if(l1>MAXLOOP) break;
00645         if(S[p] != 3) continue;
00646         c0 = energy + ggg[p][q - p] + P->internal_loop[l1];
00647         ge = MIN2(ge, c0);
00648     }
00649
00650 return ge;
00651 }
00652
00653 INLINE PRIVATE
00654 FLT_OR_DBL
00655 exp_E_GQuad_IntLoop(int i,
00656                     int j,
00657                     int type,
00658                     short *S,
00659                     FLT_OR_DBL *G,
00660                     int *index,
00661                     pf_paramT *pf){
00662
00663     int k, l, minl, maxl, u, r;
00664     FLT_OR_DBL q, qe, *expintern;
00665     short si, sj;
00666
00667     q = 0;
00668     si = S[i + 1];
00669     sj = S[j - 1];
00670     qe = pf->expmismatchI[type][si][sj];
00671     expintern = pf->expinternal;
00672
00673     if(type > 2)
00674         qe *= pf->expTermAU;
00675
00676     k = i + 1;
00677     if(S[k] == 3){
00678         if(k < j - VRNA_GQUAD_MIN_BOX_SIZE){
00679             minl = j - i + k - MAXLOOP - 2;
00680             u = k + VRNA_GQUAD_MIN_BOX_SIZE - 1;
00681             minl = MAX2(u, minl);
00682             u = j - 3;
00683             maxl = k + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00684             maxl = MIN2(u, maxl);
00685             for(l = minl; l < maxl; l++){
00686                 if(S[l] != 3) continue;
00687                 if(G[index[k]-1] == 0.) continue;
00688                 q += qe * G[index[k]-1] * expintern[j - l - 1];
00689             }
00690         }
00691     }
00692
00693
00694     for(k = i + 2;
00695         k <= j - VRNA_GQUAD_MIN_BOX_SIZE;
00696         k++){
00697         u = k - i - 1;
00698         if(u > MAXLOOP) break;
00699         if(S[k] != 3) continue;
00700         minl = j - i + k - MAXLOOP - 2;
00701         r = k + VRNA_GQUAD_MIN_BOX_SIZE - 1;

```

```

00702     minl  = MAX2(r, minl);
00703     maxl  = k + VRNA_GQUAD_MAX_BOX_SIZE + 1;
00704     r     = j - 1;
00705     maxl  = MIN2(r, maxl);
00706     for(l = minl; l < maxl; l++){
00707         if(S[l] != 3) continue;
00708         if(G[index[k]-1] == 0.) continue;
00709         q += qe * G[index[k]-1] * expintern[u + j - l - 1];
00710     }
00711 }
00712
00713 l = j - 1;
00714 if(S[l] == 3)
00715     for(k = i + 4; k < j - VRNA_GQUAD_MIN_BOX_SIZE; k++){
00716         u = k - i - 1;
00717         if(u > MAXLOOP) break;
00718         if(S[k] != 3) continue;
00719         if(G[index[k]-1] == 0.) continue;
00720         q += qe * G[index[k]-1] * expintern[u];
00721     }
00722
00723 return q;
00724 }
00725
00726 #endif

```

11.35 /homes/brauerei2/ronny/WORK/ViennaRNA/H/inverse.h File Reference

Inverse folding routines.

Functions

- float [inverse_fold](#) (char *start, const char *target)
Find sequences with predefined structure.
- float [inverse_pf_fold](#) (char *start, const char *target)
Find sequence that maximizes probability of a predefined structure.

Variables

- char * **symbolset**
This global variable points to the allowed bases, initially "AUGC". It can be used to design sequences from reduced alphabets.
- float [final_cost](#)
- int [give_up](#)
- int [inv_verbose](#)

11.35.1 Detailed Description

Inverse folding routines.

11.36 inverse.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_INVERSE_H__
00002 #define __VIENNA_RNA_PACKAGE_INVERSE_H__
00003
00021 extern char *symbolset;
00023 extern float final_cost;
00025 extern int give_up;
00027 extern int inv_verbose;
00028
00045 float inverse_fold( char *start,
00046                     const char *target);
00047
00061 float inverse_pf_fold(char *start,
00062                       const char *target);
00063
00067 #endif

```


11.37 /homes/brauerei2/ronny/WORK/ViennaRNA/H/Lfold.h File Reference

Predicting local MFE structures of large sequences.

Functions

- float [Lfold](#) (const char *string, char *structure, int maxdist)
The local analog to [fold\(\)](#).
- float [Lfoldz](#) (const char *string, char *structure, int maxdist, int zsc, double min_z)
- float [aliLfold](#) (const char **strings, char *structure, int maxdist)

11.37.1 Detailed Description

Predicting local MFE structures of large sequences.

11.38 Lfold.h

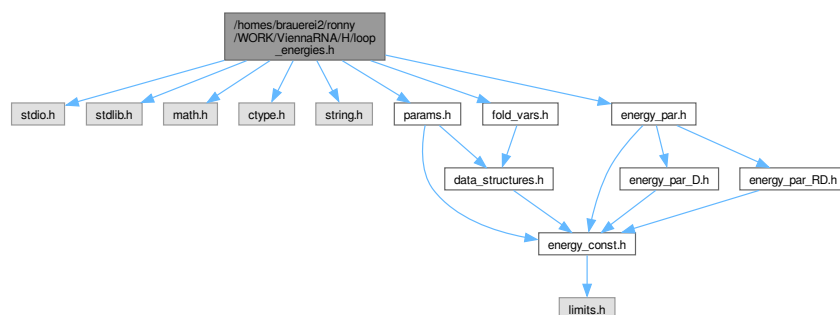
[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_LFOLD_H__
00002 #define __VIENNA_RNA_PACKAGE_LFOLD_H__
00003
00038 float Lfold(const char *string,
00039             char *structure,
00040             int maxdist);
00041
00053 float Lfoldz( const char *string,
00054              char *structure,
00055              int maxdist,
00056              int zsc,
00057              double min_z);
00058
00059
00077 float aliLfold( const char **strings,
00078                char *structure,
00079                int maxdist);
00080
00081 #endif
```

11.39 /homes/brauerei2/ronny/WORK/ViennaRNA/H/loop_energies.h File Reference

Energy evaluation for MFE and partition function calculations.

Include dependency graph for loop_energies.h:



Functions

- PRIVATE int [E_IntLoop](#) (int n1, int n2, int type, int type_2, int si1, int sj1, int sp1, int sq1, [paramT](#) *P)

- PRIVATE int [E_Hairpin](#) (int size, int type, int si1, int sj1, const char *string, [paramT](#) *P)
- PRIVATE int [E_Stem](#) (int type, int si1, int sj1, int extLoop, [paramT](#) *P)
- PRIVATE double [exp_E_Stem](#) (int type, int si1, int sj1, int extLoop, [pf_paramT](#) *P)
- PRIVATE double [exp_E_Hairpin](#) (int u, int type, short si1, short sj1, const char *string, [pf_paramT](#) *P)
- PRIVATE double [exp_E_IntLoop](#) (int u1, int u2, int type, int type2, short si1, short sj1, short sp1, short sq1, [pf_paramT](#) *P)

11.39.1 Detailed Description

Energy evaluation for MFE and partition function calculations.

This file contains functions for the calculation of the free energy ΔG of a hairpin- [[E_Hairpin\(\)](#)] or interior-loop [[E_IntLoop\(\)](#)].

The unit of the free energy returned is $10^{-2} * \text{kcal/mol}$

In case of computing the partition function, this file also supplies functions which return the Boltzmann weights $e^{-\Delta G/kT}$ for a hairpin- [[exp_E_Hairpin\(\)](#)] or interior-loop [[exp_E_IntLoop\(\)](#)].

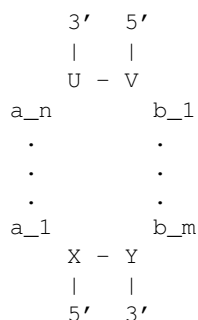
11.39.2 Function Documentation

11.39.2.1 E_IntLoop()

```
PRIVATE int E_IntLoop (
    int n1,
    int n2,
    int type,
    int type_2,
    int si1,
    int sj1,
    int sp1,
    int sq1,
    paramT * P )
```

Compute the Energy of an interior-loop

This function computes the free energy ΔG of an interior-loop with the following structure:



This general structure depicts an interior-loop that is closed by the base pair (X,Y). The enclosed base pair is (V,U) which leaves the unpaired bases a_1-a_n and b_1-b_n that constitute the loop. In this example, the length of the interior-loop is $(n + m)$ where n or m may be 0 resulting in a bulge-loop or base pair stack. The mismatching nucleotides for the closing pair (X,Y) are:

5'-mismatch: a_1

3'-mismatch: b_m

and for the enclosed base pair (V,U):

5'-mismatch: b_1

3'-mismatch: a_n

Note

Base pairs are always denoted in 5'->3' direction. Thus the enclosed base pair must be 'turned around' when evaluating the free energy of the interior-loop

See also

[scale_parameters\(\)](#)

[paramT](#)

Note

This function is threadsafe

Parameters

<i>n1</i>	The size of the 'left'-loop (number of unpaired nucleotides)
<i>n2</i>	The size of the 'right'-loop (number of unpaired nucleotides)
<i>type</i>	The pair type of the base pair closing the interior loop
<i>type</i> _↔ <i>_2</i>	The pair type of the enclosed base pair
<i>si1</i>	The 5'-mismatching nucleotide of the closing pair
<i>sj1</i>	The 3'-mismatching nucleotide of the closing pair
<i>sp1</i>	The 3'-mismatching nucleotide of the enclosed pair
<i>sq1</i>	The 5'-mismatching nucleotide of the enclosed pair
<i>P</i>	The datastructure containing scaled energy parameters

Returns

The Free energy of the Interior-loop in dcal/mol

11.39.2.2 E_Hairpin()

```
PRIVATE int E_Hairpin (
    int size,
    int type,
    int si1,
    int sj1,
    const char * string,
    paramT * P )
```

Compute the Energy of a hairpin-loop

To evaluate the free energy of a hairpin-loop, several parameters have to be known. A general hairpin-loop has this structure:

```

      a3 a4
a2      a5
a1      a6
  X - Y
  |   |
  5'  3'
```

where X-Y marks the closing pair [e.g. a (**G,C**) pair]. The length of this loop is 6 as there are six unpaired nucleotides (a1-a6) enclosed by (X,Y). The 5' mismatching nucleotide is a1 while the 3' mismatch is a6. The nucleotide sequence of this loop is "a1.a2.a3.a4.a5.a6"

Note

The parameter sequence should contain the sequence of the loop in capital letters of the nucleic acid alphabet if the loop size is below 7. This is useful for unusually stable tri-, tetra- and hexa-loops which are treated differently (based on experimental data) if they are tabulated.

See also

[scale_parameters\(\)](#)
[paramT](#)

Warning

Not (really) thread safe! A threadsafe implementation will replace this function in a future release!
 Energy evaluation may change due to updates in global variable "tetra_loop"

Parameters

<i>size</i>	The size of the loop (number of unpaired nucleotides)
<i>type</i>	The pair type of the base pair closing the hairpin
<i>si1</i>	The 5'-mismatching nucleotide
<i>sj1</i>	The 3'-mismatching nucleotide
<i>string</i>	The sequence of the loop
<i>P</i>	The datastructure containing scaled energy parameters

Returns

The Free energy of the Hairpin-loop in dcal/mol

11.39.2.3 E_Stem()

```
PRIVATE int E_Stem (
    int type,
    int si1,
    int sj1,
    int extLoop,
    paramT * P )
```

Compute the energy contribution of a stem branching off a loop-region

This function computes the energy contribution of a stem that branches off a loop region. This can be the case in multiloops, when a stem branching off increases the degree of the loop but also *immediately interior base pairs* of an exterior loop contribute free energy. To switch the behavior of the function according to the evaluation of a multiloop- or exterior-loop-stem, you pass the flag 'extLoop'. The returned energy contribution consists of a TerminalAU penalty if the pair type is greater than 2, dangling end contributions of mismatching nucleotides adjacent to the stem if only one of the si1, sj1 parameters is greater than 0 and mismatch energies if both mismatching nucleotides are positive values. Thus, to avoid incooperating dangling end or mismatch energies just pass a negative number, e.g. -1 to the mismatch argument.

This is an illustration of how the energy contribution is assembled:

```

      3'   5'
      |   |
      X - Y
5'-si1      sj1-3'
```

Here, (X,Y) is the base pair that closes the stem that branches off a loop region. The nucleotides si1 and sj1 are the 5'- and 3'- mismatches, respectively. If the base pair type of (X,Y) is greater than 2 (i.e. an A-U or G-U pair,

the TerminalAU penalty will be included in the energy contribution returned. If *si1* and *sj1* are both nonnegative numbers, mismatch energies will also be included. If one of *si1* or *sj1* is a negative value, only 5' or 3' dangling end contributions are taken into account. To prohibit any of these mismatch contributions to be incorporated, just pass a negative number to both, *si1* and *sj1*. In case the argument *extLoop* is 0, the returned energy contribution also includes the *internal-loop-penalty* of a multiloop stem with closing pair type.

See also

`E_MLstem()`
`E_ExtLoop()`

Note

This function is threadsafe

Parameters

<i>type</i>	The pair type of the first base pair un the stem
<i>si1</i>	The 5'-mismatching nucleotide
<i>sj1</i>	The 3'-mismatching nucleotide
<i>extLoop</i>	A flag that indicates whether the contribution reflects the one of an exterior loop or not
<i>P</i>	The datastructure containing scaled energy parameters

Returns

The Free energy of the branch off the loop in dcal/mol

11.39.2.4 `exp_E_Stem()`

```
PRIVATE double exp_E_Stem (  
    int type,  
    int si1,  
    int sj1,  
    int extLoop,  
    pf_paramT * P )
```

Compute the Boltzmann weighted energy contribution of a stem branching off a loop-region

This is the partition function variant of [E_Stem\(\)](#)

See also

[E_Stem\(\)](#)

Note

This function is threadsafe

Returns

The Boltzmann weighted energy contribution of the branch off the loop

11.39.2.5 `exp_E_Hairpin()`

```
PRIVATE double exp_E_Hairpin (  
    int u,  
    int type,  
    short si1,  
    short sj1,  
    const char * string,  
    pf_paramT * P )
```

Compute Boltzmann weight $e^{-\Delta G/kT}$ of a hairpin loop

multiply by scale[u+2]

See also

[get_scaled_pf_parameters\(\)](#)
[pf_paramT](#)
[E_Hairpin\(\)](#)

Warning

Not (really) thread safe! A threadsafe implementation will replace this function in a future release!
 Energy evaluation may change due to updates in global variable "tetra_loop"

Parameters

<i>u</i>	The size of the loop (number of unpaired nucleotides)
<i>type</i>	The pair type of the base pair closing the hairpin
<i>si1</i>	The 5'-mismatching nucleotide
<i>sj1</i>	The 3'-mismatching nucleotide
<i>string</i>	The sequence of the loop
<i>P</i>	The datastructure containing scaled Boltzmann weights of the energy parameters

Returns

The Boltzmann weight of the Hairpin-loop

11.39.2.6 exp_E_IntLoop()

```
PRIVATE double exp_E_IntLoop (
    int u1,
    int u2,
    int type,
    int type2,
    short si1,
    short sj1,
    short spl,
    short sq1,
    pf_paramT * P )
```

Compute Boltzmann weight $e^{-\Delta G/kT}$ of interior loop

multiply by scale[u1+u2+2] for scaling

See also

[get_scaled_pf_parameters\(\)](#)
[pf_paramT](#)
[E_IntLoop\(\)](#)

Note

This function is threadsafe

Parameters

<i>u1</i>	The size of the 'left'-loop (number of unpaired nucleotides)
<i>u2</i>	The size of the 'right'-loop (number of unpaired nucleotides)
<i>type</i>	The pair type of the base pair closing the interior loop
<i>type2</i>	The pair type of the enclosed base pair
<i>si1</i>	The 5'-mismatching nucleotide of the closing pair
<i>sj1</i>	The 3'-mismatching nucleotide of the closing pair
<i>sp1</i>	The 3'-mismatching nucleotide of the enclosed pair
<i>sq1</i>	The 5'-mismatching nucleotide of the enclosed pair
<i>P</i>	The datastructure containing scaled Boltzmann weights of the energy parameters

Returns

The Boltzmann weight of the Interior-loop

11.40 loop_energies.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_LOOP_ENERGIES_H__
00002 #define __VIENNA_RNA_PACKAGE_LOOP_ENERGIES_H__
00003
00004 #include <stdio.h>
00005 #include <stdlib.h>
00006 #include <math.h>
00007 #include <ctype.h>
00008 #include <string.h>
00009 #include "params.h"
00010 #include "fold_vars.h"
00011 #include "energy_par.h"
00012
00013 #ifdef __GNUC__
00014 # define INLINE inline
00015 #else
00016 # define INLINE
00017 #endif
00018
00054 INLINE PRIVATE int E_MLstem( int type,
00055                               int sil,
00056                               int sj1,
00057                               paramT *P);
00058
00065 INLINE PRIVATE double exp_E_MLstem(int type,
00066                                     int sil,
00067                                     int sj1,
00068                                     pf_paramT *P);
00069
00089 INLINE PRIVATE int E_ExtLoop(int type,
00090                               int sil,
00091                               int sj1,
00092                               paramT *P);
00093
00100 INLINE PRIVATE double exp_E_ExtLoop( int type,
00101                                       int sil,
00102                                       int sj1,
00103                                       pf_paramT *P);
00104
00149 INLINE PRIVATE int E_IntLoop(int n1,
00150                                int n2,
00151                                int type,
00152                                int type_2,
00153                                int sil,
00154                                int sj1,
00155                                int sp1,
00156                                int sq1,
00157                                paramT *P);
00158
00159
00191 INLINE PRIVATE int E_Hairpin(int size,
00192                               int type,
00193                               int sil,
00194                               int sj1,
00195                               const char *string,
00196                               paramT *P);

```

```

00197
00243 INLINE PRIVATE int E_Stem( int type,
00244                             int sil,
00245                             int sj1,
00246                             int extLoop,
00247                             paramT *P);
00248
00257 INLINE PRIVATE double exp_E_Stem(int type,
00258                                   int sil,
00259                                   int sj1,
00260                                   int extLoop,
00261                                   pf_paramT *P);
00262
00280 INLINE PRIVATE double exp_E_Hairpin( int u,
00281                                       int type,
00282                                       short sil,
00283                                       short sj1,
00284                                       const char *string,
00285                                       pf_paramT *P);
00286
00306 INLINE PRIVATE double exp_E_IntLoop(int u1,
00307                                       int u2,
00308                                       int type,
00309                                       int type2,
00310                                       short sil,
00311                                       short sj1,
00312                                       short spl,
00313                                       short sql,
00314                                       pf_paramT *P);
00315
00316
00317 /*
00318 #####
00319 # BEGIN OF FUNCTION DEFINITIONS #
00320 #####
00321 */
00322 INLINE PRIVATE int E_Hairpin(int size, int type, int sil, int sj1, const char *string, paramT *P){
00323     int energy;
00324
00325     if(type < 8){
00326         energy = (size <= 30) ? P->hairpin[size] : P->hairpin[30]+(int) (P->lxc*log((size)/30.));
00327         if (P->model_details.special_hp){
00328             if (size == 4) { /* check for tetraloop bonus */
00329                 char tl[7]={0}, *ts;
00330                 strncpy(tl, string, 6);
00331                 if ((ts=strstr(P->Tetraloops, tl)))
00332                     return (P->Tetraloop_E[(ts - P->Tetraloops)/7]);
00333             }
00334             if (size == 6) {
00335                 char tl[9]={0}, *ts;
00336                 strncpy(tl, string, 8);
00337                 if ((ts=strstr(P->Hexaloops, tl)))
00338                     return (energy = P->Hexaloop_E[(ts - P->Hexaloops)/9]);
00339             }
00340             if (size == 3) {
00341                 char tl[6]={0,0,0,0,0,0}, *ts;
00342                 strncpy(tl, string, 5);
00343                 if ((ts=strstr(P->Triloops, tl))) {
00344                     return (P->Triloop_E[(ts - P->Triloops)/6]);
00345                 }
00346                 return (energy + P->TerminalAU_t[type]);
00347             }
00348         }
00349     } else if (type > 16){
00350         energy = (size <= 30) ? P->hairpin_D[size] : P->hairpin_D[30]+(int) (P->lxc_D*log((size)/30.));
00351         if (P->model_details.special_hp){
00352             if (size == 4) { /* check for tetraloop bonus */
00353                 char tl[7]={0}, *ts;
00354                 strncpy(tl, string, 6);
00355                 if ((ts=strstr(P->Tetraloops_D, tl)))
00356                     return (P->Tetraloop_E_D[(ts - P->Tetraloops_D)/7]);
00357             }
00358             if (size == 6) {
00359                 char tl[9]={0}, *ts;
00360                 strncpy(tl, string, 8);
00361                 if ((ts=strstr(P->Hexaloops_D, tl)))
00362                     return (energy = P->Hexaloop_E_D[(ts - P->Hexaloops_D)/9]);
00363             }
00364             if (size == 3) {
00365                 char tl[6]={0,0,0,0,0,0}, *ts;
00366                 strncpy(tl, string, 5);
00367                 if ((ts=strstr(P->Triloops_D, tl))) {
00368                     return (P->Triloop_E_D[(ts - P->Triloops_D)/6]);
00369                 }
00370                 return (energy + P->TerminalAU_t[type]);
00371             }
00372         }
00373     }

```



```

00373     } else {;}
00374
00375     energy += P->mismatchH[type][sil][sjl];
00376
00377     return energy;
00378 }
00379
00380 INLINE PRIVATE int E_IntLoop(int n1, int n2, int type, int type_2, int sil, int sjl, int spl, int
    sql, paramT *P){
00381     /* compute energy of degree 2 loop (stack bulge or interior) */
00382     int nl, ns, energy;
00383     energy = INF;
00384
00385     if (n1>n2) { nl=n1; ns=n2;}
00386     else {nl=n2; ns=n1;}
00387
00388
00389
00390     if (nl == 0)
00391         return P->stack[type][type_2]; /* stack */
00392
00393     if (ns==0) { /* bulge */
00394         if (type < 8){
00395             energy = (nl<=MAXLOOP) ? P->bulge[nl] : (P->bulge[30]+(int) (P->lxc*log(nl/30.)));
00396         } else if (type < 16) {
00397             energy = (nl<=MAXLOOP) ? P->bulge_RD[nl] : (P->bulge_RD[30]+(int) (P->lxc_RD*log(nl/30.)));
00398         } else {
00399             energy = (nl<=MAXLOOP) ? P->bulge_D[nl] : (P->bulge_D[30]+(int) (P->lxc_D*log(nl/30.)));
00400         }
00401         if (nl==1) energy += P->stack[type][type_2];
00402         else {
00403             energy += P->TerminalAU_t[type];
00404             energy += P->TerminalAU_t[type_2];
00405         }
00406         return energy;
00407     }
00408     else { /* interior loop */
00409         if (ns==1) {
00410             if (nl==1) /* 1x1 loop */
00411                 return P->int1l[type][type_2][sil][sjl];
00412             if (nl==2) /* 2x1 loop */
00413                 if (nl==1)
00414                     energy = P->int2l[type][type_2][sil][sql][sjl];
00415                 else
00416                     energy = P->int2l[type_2][type][sql][sil][spl];
00417                 return energy;
00418             }
00419             else { /* 1xn loop */
00420                 if (type < 8){
00421                     energy = (nl+1<=MAXLOOP)?(P->internal_loop[nl+1]) :
(P->internal_loop[30]+(int) (P->lxc*log((nl+1)/30.)));
00422                     energy += MIN2(MAX_NINIO, (nl-ns)*P->ninio[2]);
00423                 } else if (type < 16){
00424                     energy = (nl+1<=MAXLOOP)?(P->internal_loop_RD[nl+1]) :
(P->internal_loop_RD[30]+(int) (P->lxc_RD*log((nl+1)/30.)));
00425                     energy += MIN2(MAX_NINIO_RD, (nl-ns)*P->ninio_RD[2]);
00426                 } else {
00427                     energy = (nl+1<=MAXLOOP)?(P->internal_loop_D[nl+1]) :
(P->internal_loop_D[30]+(int) (P->lxc_D*log((nl+1)/30.)));
00428                     energy += MIN2(MAX_NINIO_D, (nl-ns)*P->ninio_D[2]);
00429                 }
00430                 energy += P->mismatchlnI[type][sil][sjl] + P->mismatchlnI[type_2][sql][spl];
00431                 return energy;
00432             }
00433         }
00434         else if (ns==2) {
00435             if (nl==2) { /* 2x2 loop */
00436                 return P->int22[type][type_2][sil][spl][sql][sjl];
00437             } else if (nl==3) { /* 2x3 loop */
00438                 if (type < 8){
00439                     energy = P->internal_loop[5]+P->ninio[2];
00440                 } else if (type < 16){
00441                     energy = P->internal_loop_RD[5]+P->ninio_RD[2];
00442                 } else {
00443                     energy = P->internal_loop_D[5]+P->ninio_D[2];
00444                 }
00445                 energy += P->mismatch23I[type][sil][sjl] + P->mismatch23I[type_2][sql][spl];
00446                 return energy;
00447             }
00448         }
00449     }
00450     { /* generic interior loop (no else here!)*/
00451         if (type < 8){
00452             energy = (nl+n2<=MAXLOOP)?(P->internal_loop[nl+n2]) :
(P->internal_loop[30]+(int) (P->lxc*log((nl+n2)/30.)));
00453             energy += MIN2(MAX_NINIO, (nl-ns)*P->ninio[2]);
00454         } else if (type < 16){

```

```

00455     energy = (n1+n2<=MAXLOOP)?(P->internal_loop_RD[n1+n2]) :
(P->internal_loop_RD[30]+(int) (P->lxc_RD*log((n1+n2)/30.)));
00456     energy += MIN2(MAX_NINIO_RD, (n1-ns)*P->ninio_RD[2]);
00457     } else {
00458     energy = (n1+n2<=MAXLOOP)?(P->internal_loop_D[n1+n2]) :
(P->internal_loop_D[30]+(int) (P->lxc_D*log((n1+n2)/30.)));
00459     energy += MIN2(MAX_NINIO_D, (n1-ns)*P->ninio_D[2]);
00460     }
00461     energy += P->mismatchI[type][sil][sjl] + P->mismatchI[type_2][sql][spl];
00462     }
00463     }
00464     return energy;
00465 }
00466
00467 INLINE PRIVATE int E_Stem(int type, int sil, int sjl, int extLoop, paramT *P){
00468     int energy = 0;
00469     int d5 = (sil >= 0) ? P->dangle5[type][sil] : 0;
00470     int d3 = (sjl >= 0) ? P->dangle3[type][sjl] : 0;
00471
00472     energy += P->TerminalAU_t[type];
00473
00474     if(sil >= 0 && sjl >= 0)
00475         energy += (extLoop) ? P->mismatchExt[type][sil][sjl] : P->mismatchM[type][sil][sjl];
00476     else
00477         energy += d5 + d3;
00478
00479     if(!extLoop) energy += P->MLintern[type];
00480     return energy;
00481 }
00482
00483 INLINE PRIVATE int E_ExtLoop(int type, int sil, int sjl, paramT *P){
00484     int energy = 0;
00485     if(sil >= 0 && sjl >= 0){
00486         energy += P->mismatchExt[type][sil][sjl];
00487     }
00488     else if (sil >= 0){
00489         energy += P->dangle5[type][sil];
00490     }
00491     else if (sjl >= 0){
00492         energy += P->dangle3[type][sjl];
00493     }
00494
00495     energy += P->TerminalAU_t[type];
00496
00497     return energy;
00498 }
00499
00500 INLINE PRIVATE int E_MLstem(int type, int sil, int sjl, paramT *P){
00501     int energy = 0;
00502     if(sil >= 0 && sjl >= 0){
00503         energy += P->mismatchM[type][sil][sjl];
00504     }
00505     else if (sil >= 0){
00506         energy += P->dangle5[type][sil];
00507     }
00508     else if (sjl >= 0){
00509         energy += P->dangle3[type][sjl];
00510     }
00511
00512     energy += P->TerminalAU_t[type];
00513
00514     energy += P->MLintern[type];
00515
00516     return energy;
00517 }
00518
00519 INLINE PRIVATE double exp_E_Hairpin(int u, int type, short sil, short sjl, const char *string,
pf_paramT *P){
00520     double q, kT;
00521     kT = P->kT; /* kT in cal/mol */
00522
00523     if(type < 8){
00524         q = (u <= 30) ? P->expairpin[u] : P->expairpin[30] * exp(-(P->lxc*log(u/30.))*10./kT);
00525
00526         if(u < 3) return q; /* should only be the case when folding alignments */
00527
00528         if(P->model_details.special_hp){
00529             if(u==4){
00530                 char tl[7]={0,0,0,0,0,0,0}, *ts;
00531                 strncpy(tl, string, 6);
00532                 if ((ts=strstr(P->TetraLoops, tl))){
00533                     if (type != 7)
00534                         return (P->exptetra[(ts-P->TetraLoops)/7]);
00535                     else
00536                         q *= P->exptetra[(ts-P->TetraLoops)/7];
00537                 }
00538             }

```

```

00539     if(u==6){
00540         char tl[9]={0,0,0,0,0,0,0,0,0}, *ts;
00541         strncpy(tl, string, 8);
00542         if ((ts=strstr(P->Hexaloops, tl)))
00543             return (P->expheh[ (ts-P->Hexaloops)/9]);
00544     }
00545     if (u==3) {
00546         char tl[6]={0,0,0,0,0,0}, *ts;
00547         strncpy(tl, string, 5);
00548         if ((ts=strstr(P->Triloops, tl)))
00549             return (P->exptri[ (ts-P->Triloops)/6]);
00550         if (type>2)
00551             return q * P->expTermAU_t[type];
00552         return q;
00553     }
00554 }
00555 } else if (type > 16){
00556     q = (u <= 30) ? P->exphairpin_D[u] : P->exphairpin_D[30] * exp( -(P->lxh_D*log( u/30.))*10./kT);
00557
00558     if(u < 3) return q; /* should only be the case when folding alignments */
00559
00560     if(P->model_details.special_hp){
00561         if(u==4){
00562             char tl[7]={0,0,0,0,0,0,0}, *ts;
00563             strncpy(tl, string, 6);
00564             if ((ts=strstr(P->Tetraloops_D, tl)))
00565                 if(type != 7)
00566                     return (P->exptetra_D[ (ts-P->Tetraloops_D)/7]);
00567             else
00568                 q *= P->exptetra_D[ (ts-P->Tetraloops_D)/7];
00569         }
00570     }
00571     if(u==6){
00572         char tl[9]={0,0,0,0,0,0,0,0,0}, *ts;
00573         strncpy(tl, string, 8);
00574         if ((ts=strstr(P->Hexaloops_D, tl)))
00575             return (P->expheh_D[ (ts-P->Hexaloops_D)/9]);
00576     }
00577     if (u==3) {
00578         char tl[6]={0,0,0,0,0,0}, *ts;
00579         strncpy(tl, string, 5);
00580         if ((ts=strstr(P->Triloops_D, tl)))
00581             return (P->exptri_D[ (ts-P->Triloops_D)/6]);
00582         return (q * P->expTermAU_t[type]);
00583     }
00584 }
00585 } else {};
00586
00587 q *= P->expmismatchH[type][sil][sjl];
00588
00589 return q;
00590 }
00591
00592 INLINE PRIVATE double exp_E_IntLoop(int u1, int u2, int type, int type2, short sil, short sjl, short
spl, short sql, pf_paramT *P){
00593     int ul, us, no_close = 0;
00594     double z = 0.;
00595
00596     if ((no_closingGU) && ((type2==3)|| (type2==4)|| (type==3)|| (type==4)))
00597         no_close = 1;
00598
00599     if (u1>u2) { ul=u1; us=u2;}
00600     else {ul=u2; us=u1;}
00601
00602     if (ul==0) /* stack */
00603         z = P->expstack[type][type2];
00604     else if(!no_close){
00605         if (us==0) { /* bulge */
00606             if(type < 8){
00607                 z = P->expbulge[ul];
00608             } else if (type < 16){
00609                 z = P->expbulge_RD[ul];
00610             } else {
00611                 z = P->expbulge_D[ul];
00612             }
00613             if (ul==1) z *= P->expstack[type][type2];
00614             else {
00615                 if (type>2) z *= P->expTermAU_t[type];
00616                 if (type2>2) z *= P->expTermAU_t[type2];
00617             }
00618             return z;
00619         }
00620         else if (us==1) {
00621             if (ul==1){ /* 1x1 loop */
00622                 return P->expint11[type][type2][sil][sjl];
00623             }
00624             if (ul==2) { /* 2x1 loop */

```

```

00625         if (ul==1)
00626             return P->expint21[type][type2][sil][sql][sj1];
00627         else
00628             return P->expint21[type2][type][sql][sil][sp1];
00629     }
00630     else { /* 1xn loop */
00631         if(type < 8){
00632             z = P->expinternal[ul+us] * P->expmismatchlnI[type][sil][sj1] *
P->expmismatchlnI[type2][sql][sp1];
00633             return z * P->expninio[2][ul-us];
00634         } else if (type < 16){
00635             z = P->expinternal_RD[ul+us] * P->expmismatchlnI[type][sil][sj1] *
P->expmismatchlnI[type2][sql][sp1];
00636             return z * P->expninio_RD[2][ul-us];
00637         } else {
00638             z = P->expinternal_D[ul+us] * P->expmismatchlnI[type][sil][sj1] *
P->expmismatchlnI[type2][sql][sp1];
00639             return z * P->expninio_D[2][ul-us];
00640         }
00641     }
00642 }
00643 else if (us==2) {
00644     if(ul==2) /* 2x2 loop */
00645         return P->expint22[type][type2][sil][sp1][sql][sj1];
00646     else if(ul==3){ /* 2x3 loop */
00647         if(type < 8){
00648             z = P->expinternal[5]*P->expmismatch23I[type][sil][sj1]*P->expmismatch23I[type2][sql][sp1];
00649             return z * P->expninio[2][1];
00650         } else if (type < 16){
00651             z =
P->expinternal_RD[5]*P->expmismatch23I[type][sil][sj1]*P->expmismatch23I[type2][sql][sp1];
00652             return z * P->expninio_RD[2][1];
00653         } else {
00654             z =
P->expinternal_D[5]*P->expmismatch23I[type][sil][sj1]*P->expmismatch23I[type2][sql][sp1];
00655             return z * P->expninio_D[2][1];
00656         }
00657     }
00658 }
00659 /* generic interior loop (no else here!)*
00660 if(type < 8){
00661     z = P->expinternal[ul+us] * P->expmismatchI[type][sil][sj1] * P->expmismatchI[type2][sql][sp1];
00662     return z * P->expninio[2][ul-us];
00663 } else if (type < 16){
00664     z = P->expinternal_RD[ul+us] * P->expmismatchI[type][sil][sj1] *
P->expmismatchI[type2][sql][sp1];
00665     return z * P->expninio_RD[2][ul-us];
00666 } else {
00667     z = P->expinternal_D[ul+us] * P->expmismatchI[type][sil][sj1] *
P->expmismatchI[type2][sql][sp1];
00668     return z * P->expninio_D[2][ul-us];
00669 }
00670 }
00671 return z;
00672 }
00673
00674 INLINE PRIVATE double exp_E_Stem(int type, int sil, int sj1, int extLoop, pf_paramT *P){
00675     double energy = 1.0;
00676     double d5 = (sil >= 0) ? P->expdangle5[type][sil] : 1.;
00677     double d3 = (sj1 >= 0) ? P->expdangle3[type][sj1] : 1.;
00678
00679     if(type > 2)
00680         energy *= P->expTermAU_t[type];
00681
00682     if(sil >= 0 && sj1 >= 0)
00683         energy *= (extLoop) ? P->expmismatchExt[type][sil][sj1] : P->expmismatchM[type][sil][sj1];
00684     else
00685         energy *= d5 * d3;
00686
00687     if(!extLoop) energy *= P->expMLintern[type];
00688     return energy;
00689 }
00690
00691 INLINE PRIVATE double exp_E_MLstem(int type, int sil, int sj1, pf_paramT *P){
00692     double energy = 1.0;
00693     if(sil >= 0 && sj1 >= 0){
00694         energy *= P->expmismatchM[type][sil][sj1];
00695     }
00696     else if(sil >= 0){
00697         energy *= P->expdangle5[type][sil];
00698     }
00699     else if(sj1 >= 0){
00700         energy *= P->expdangle3[type][sj1];
00701     }
00702
00703     if(type > 2)
00704         energy *= P->expTermAU_t[type];

```

```

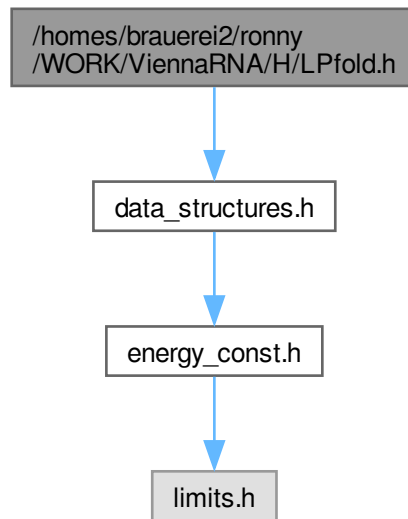
00705
00706     energy *= P->expMLintern[type];
00707     return energy;
00708 }
00709
00710 INLINE PRIVATE double exp_E_ExtLoop(int type, int sil, int sj1, pf_paramT *P){
00711     double energy = 1.0;
00712     if(sil >= 0 && sj1 >= 0){
00713         energy *= P->expmismatchExt[type][sil][sj1];
00714     }
00715     else if(sil >= 0){
00716         energy *= P->expdangle5[type][sil];
00717     }
00718     else if(sj1 >= 0){
00719         energy *= P->expdangle3[type][sj1];
00720     }
00721
00722     if(type > 2)
00723         energy *= P->expTermAU_t[type];
00724
00725     return energy;
00726 }
00727
00728 INLINE PRIVATE int      E_IntLoop_Co(int type, int type_2, int i, int j, int p, int q, int cutpoint,
short sil, short sj1, short spl, short sql, int dangles, paramT *P){
00729     int energy = 0;
00730     energy += P->TerminalAU_t[type];
00731     energy += P->TerminalAU_t[type_2];
00732
00733     if(!dangles) return energy;
00734
00735     int ci = (i>=cutpoint)||((i+1)<cutpoint);
00736     int cj = ((j-1)>=cutpoint)||((j)<cutpoint);
00737     int cp = ((p-1)>=cutpoint)||((p)<cutpoint);
00738     int cq = (q>=cutpoint)||((q+1)<cutpoint);
00739
00740     int d3    = ci ? P->dangle3[type][sil] : 0;
00741     int d5    = cj ? P->dangle5[type][sj1] : 0;
00742     int d5_2  = cp ? P->dangle5[type_2][spl] : 0;
00743     int d3_2  = cq ? P->dangle3[type_2][sql] : 0;
00744
00745     int tmm    = (cj && ci) ? P->mismatchExt[type][sj1][sil] : d5 + d3;
00746     int tmm_2  = (cp && cq) ? P->mismatchExt[type_2][spl][sql] : d5_2 + d3_2;
00747
00748     if(dangles == 2) return energy + tmm + tmm_2;
00749
00750     /* now we may have non-double dangles only */
00751     if(i+2 < p){
00752         if(q+2 < j){ energy += tmm + tmm_2;}
00753         else if(q+2 == j){ energy += (cj && cq) ? MIN2(tmm + d5_2, tmm_2 + d3) : tmm + tmm_2;}
00754         else energy += d3 + d5_2;
00755     }
00756     else if(i+2 == p){
00757         if(q+2 < j){ energy += (ci && cp) ? MIN2(tmm + d3_2, tmm_2 + d5) : tmm + tmm_2;}
00758         else if(q+2 == j){
00759             energy += MIN2(tmm, MIN2(tmm_2, MIN2(d5 + d5_2, d3 + d3_2)));
00760         }
00761         else energy += MIN2(d3, d5_2);
00762     }
00763     else{
00764         if(q+2 < j){ energy += d5 + d3_2;}
00765         else if(q+2 == j){ energy += MIN2(d5, d3_2);}
00766     }
00767     return energy;
00768 }
00769
00770 #endif

```

11.41 /homes/brauerei2/ronny/WORK/ViennaRNA/H/LPfold.h File Reference

Function declarations of partition function variants of the Lfold algorithm.

Include dependency graph for LPfold.h:



Functions

- void `update_pf_paramsLP` (int length)
- `plist` * `pfl_fold` (char *sequence, int winSize, int pairSize, float cutoffb, double **pU, struct `plist` **dpp2, FILE *pUfp, FILE *spup)
Compute partition functions for locally stable secondary structures.
- `plist` * `pfl_fold_par` (char *sequence, int winSize, int pairSize, float cutoffb, double **pU, struct `plist` **dpp2, FILE *pUfp, FILE *spup, `pf_paramT` *parameters)
Compute partition functions for locally stable secondary structures.
- void `putoutpU_prob` (double **pU, int length, int ulength, FILE *fp, int energies)
Writes the unpaired probabilities (pU) or opening energies into a file.
- void `putoutpU_prob_bin` (double **pU, int length, int ulength, FILE *fp, int energies)
Writes the unpaired probabilities (pU) or opening energies into a binary file.
- void `init_pf_foldLP` (int length)

11.41.1 Detailed Description

Function declarations of partition function variants of the Lfold algorithm.

11.41.2 Function Documentation

11.41.2.1 `init_pf_foldLP()`

```
void init_pf_foldLP (
    int length )
```

Dunno if this function was ever used by external programs linking to RNALib, but it was declared PUBLIC before. Anyway, never use this function as it will be removed soon and does nothing at all

11.42 LPfold.h

[Go to the documentation of this file.](#)

```

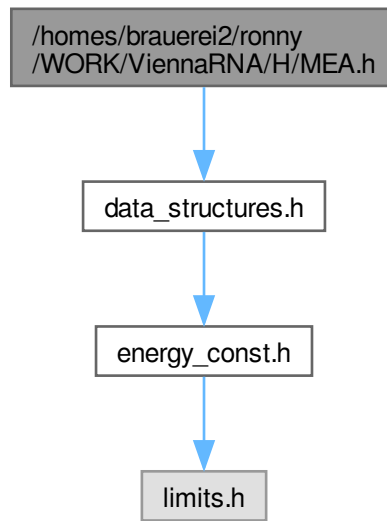
00001 #ifndef __VIENNA_RNA_PACKAGE_LPFOLD_H__
00002 #define __VIENNA_RNA_PACKAGE_LPFOLD_H__
00003
00004 #include "data_structures.h"
00005
00006 #ifdef __GNUC__
00007 #define DEPRECATED(func) func __attribute__((deprecated))
00008 #else
00009 #define DEPRECATED(func) func
00010 #endif
00011
00029 void update_pf_paramsLP(int length);
00030
00037 void update_pf_paramsLP_par(int length, pf_paramT *parameters);
00038
00076 plist *pfl_fold(char *sequence,
00077                 int winSize,
00078                 int pairSize,
00079                 float cutoffb,
00080                 double **pU,
00081                 struct plist **dpp2,
00082                 FILE *pUfp,
00083                 FILE *spup);
00084
00091 plist *pfl_fold_par(char *sequence,
00092                     int winSize,
00093                     int pairSize,
00094                     float cutoffb,
00095                     double **pU,
00096                     struct plist **dpp2,
00097                     FILE *pUfp,
00098                     FILE *spup,
00099                     pf_paramT *parameters);
00100
00101
00102 void putoutpU_prob_par( double **pU,
00103                       int length,
00104                       int ulength,
00105                       FILE *fp,
00106                       int energies,
00107                       pf_paramT *parameters);
00108
00109
00124 void putoutpU_prob(double **pU,
00125                   int length,
00126                   int ulength,
00127                   FILE *fp,
00128                   int energies);
00129
00130 void putoutpU_prob_bin_par( double **pU,
00131                           int length,
00132                           int ulength,
00133                           FILE *fp,
00134                           int energies,
00135                           pf_paramT *parameters);
00136
00151 void putoutpU_prob_bin(double **pU,
00152                      int length,
00153                      int ulength,
00154                      FILE *fp,
00155                      int energies);
00156
00162 DEPRECATED(void init_pf_foldLP(int length));
00163
00164 #endif

```

11.43 /homes/brauerei2/ronny/WORK/ViennaRNA/H/MEA.h File Reference

Computes a MEA (maximum expected accuracy) structure.

Include dependency graph for MEA.h:



Functions

- float **MEA** (plist *p, char *structure, double gamma)
Computes a MEA (maximum expected accuracy) structure.

11.43.1 Detailed Description

Computes a MEA (maximum expected accuracy) structure.

11.43.2 Function Documentation

11.43.2.1 MEA()

```
float MEA (
    plist * p,
    char * structure,
    double gamma )
```

Computes a MEA (maximum expected accuracy) structure.
The algorithm maximizes the expected accuracy

$$A(S) = \sum_{(i,j) \in S} 2\gamma p_{ij} + \sum_{i \notin S} p_i^u$$

Higher values of γ result in more base pairs of lower probability and thus higher sensitivity. Low values of γ result in structures containing only highly likely pairs (high specificity). The code of the MEA function also demonstrates the use of sparse dynamic programming scheme to reduce the time and memory complexity of folding.

11.44 MEA.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_MEA_H__
00002 #define __VIENNA_RNA_PACKAGE_MEA_H__
```



```

00003
00004 #include "data_structures.h"
00005
00022 float MEA(plist *p,
00023           char *structure,
00024           double gamma);
00025
00026 float MEA_seq(plist *p,
00027               const char *sequence,
00028               char *structure,
00029               double gamma,
00030               pf_paramT *pf);
00031
00032 #endif

```

11.45 /homes/brauerei2/ronny/WORK/ViennaRNA/H/mm.h File Reference

Several Maximum Matching implementations.

11.45.1 Detailed Description

Several Maximum Matching implementations.

This file contains the declarations for several maximum matching implementations

11.46 mm.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_MM_H__
00002 #define __VIENNA_RNA_PACKAGE_MM_H__
00003
00012 unsigned int maximumMatching(const char *string);
00013
00014 unsigned int *maximumMatchingConstraint(const char *string,
00015                                       short *ptable);
00016
00017 unsigned int *maximumMatching2Constraint(const char *string,
00018                                       short *ptable,
00019                                       short *ptable2);
00020
00021 #endif

```

11.47 move_set.h

```

00001 #ifndef __MOVE_SET_H
00002 #define __MOVE_SET_H
00003
00004 /* used data structure*/
00005 typedef struct _struct_en{
00006     int energy; /* energy in 10kcal/mol*/
00007     short *structure; /* structure in energy_of_move format*/
00008 } struct_en;
00009
00010 /* prints structure*/
00011 void print_stren(FILE *out, struct_en *str);
00012 void print_str(FILE *out, short *str);
00013
00014 /* copying functions*/
00015 void copy_arr(short *dest, short *src); /*just copy*/
00016 short *allocopy(short *src); /*copy and make space*/
00017
00018 enum MOVE_TYPE {GRADIENT, FIRST, ADAPTIVE};
00019
00020 /* walking methods (verbose_lvl 0-2, shifts = use shift moves? noLP = no lone pairs? (not compatible
    with shifts))
00021     input:    seq - sequence
00022              ptable - structure encoded with make_pair_table() from pair_mat.h
00023              s, sl - sequence encoded with encode_sequence from pair_mat.h
00024     methods:  deepest - lowest energy structure is used
00025              first - first found lower energy structure is used
00026              rand - random lower energy structure is used
00027     returns local minima structure in ptable and its energy in 10kcal/mol as output */
00028
00029 int move_gradient(char *seq,
00030                 short *ptable,
00031                 short *s,
00032                 short *sl,

```

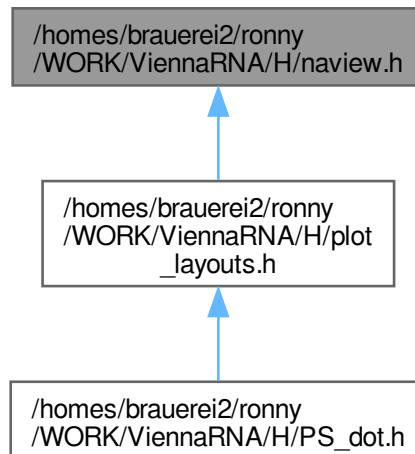
```

00033         int verbosity_level,
00034         int shifts,
00035         int noLP);
00036 int move_first( char *seq,
00037               short *ptable,
00038               short *s,
00039               short *sl,
00040               int verbosity_level,
00041               int shifts,
00042               int noLP);
00043 int move_adaptive( char *seq,
00044                 short *ptable,
00045                 short *s,
00046                 short *sl,
00047                 int verbosity_level);
00048
00049 /* standardized method that encapsulates above "_pt" methods
00050    input:  seq - sequence
00051           struc - structure in dot-bracket notation
00052           type - type of move selection according to MOVE_TYPE enum
00053    return: energy of LM
00054           structure of LM in struc in bracket-dot notation
00055 */
00056 int move_standard(char *seq,
00057                 char *struc,
00058                 enum MOVE_TYPE type,
00059                 int verbosity_level,
00060                 int shifts,
00061                 int noLP);
00062
00063
00064 /* browse_neighbours and perform funct function on each of them (used mainly for user specified
    flooding)
00065    input:  seq - sequence
00066           ptable - structure encoded with make_pair_table() from pair_mat.h
00067           s, sl - sequence encoded with encode_sequence from pair_mat.h
00068           funct - function (structure from neighbourhood, structure from input) toperform on every
    structure in neighbourhood (if the function returns non-zero, the iteration through neighbourhood
    stops.)
00069    returns energy of the structure funct sets as second argument*/
00070 int browse_neighs_pt( char *seq,
00071                   short *ptable,
00072                   short *s,
00073                   short *sl,
00074                   int verbosity_level,
00075                   int shifts,
00076                   int noLP,
00077                   int (*funct) (struct_en*, struct_en*));
00078
00079 int browse_neighs( char *seq,
00080                  char *struc,
00081                  int verbosity_level,
00082                  int shifts,
00083                  int noLP,
00084                  int (*funct) (struct_en*, struct_en*));
00085
00086 #endif
00087
00088
00089

```

11.48 /homes/brauerei2/ronny/WORK/ViennaRNA/H/naview.h File Reference

This graph shows which files directly or indirectly include this file:



11.49 naview.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_NAVIEW_H__
00002 #define __VIENNA_RNA_PACKAGE_NAVIEW_H__
00003
00012 int naview_xy_coordinates(short *pair_table,
00013                          float *X,
00014                          float *Y);
00015
00016 #endif

```

11.50 pair_mat.h

```

00001 #include <ctype.h>
00002
00003 #include "energy_const.h"
00004 #include "utils.h"
00005 #include "fold_vars.h"
00006
00007 #define NBASES 16
00008
00009 /*@nonnull@*/
00010
00011 static const char Law_and_Order[] = "_ACGUTXKI";
00012 /*
00013 static int BP_pair[NBASES][NBASES]=
00014 */
00015 /* _ A C G U X K I */
00016 /*
00017 {{ 0, 0, 0, 0, 0, 0, 0, 0, 0},
00018 { 0, 0, 0, 0, 5, 0, 0, 0, 5},
00019 { 0, 0, 0, 1, 0, 0, 0, 0, 0},
00020 { 0, 0, 2, 0, 3, 0, 0, 0, 0},
00021 { 0, 6, 0, 4, 0, 0, 0, 0, 6},
00022 { 0, 0, 0, 0, 0, 0, 2, 0, 0},
00023 { 0, 0, 0, 0, 0, 0, 1, 0, 0},
00024 { 0, 6, 0, 0, 5, 0, 0, 0, 0}};
00025 */
00026

```

```

00027 /*
00028     in the block below, uppercase letters ACGU... are
00029     used for RNA nucleotides whereas lowercase letters
00030     are used for DNA nucleotides
00031 */
00032 static int BP_pair[NNUCLEOTIDES_HYBRID][NNUCLEOTIDES_HYBRID]=
00033 /*      _  A  C  G  U  X  K  I  _  a  c  g  t  x  k  i */
00034 /*_*/{ { 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0},
00035 /*A*/ { 0, 0, 0, 0, 0, 5, 0, 0, 5, 0, 0, 0, 0, 0, 13, 0}, /*Ai?*/
00036 /*C*/ { 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 9, 0, 0, 0, 0},
00037 /*G*/ { 0, 0, 2, 0, 3, 0, 0, 0, 0, 0, 10, 0, 11, 0, 0, 0},
00038 /*U*/ { 0, 6, 0, 4, 0, 0, 0, 6, 0, 14, 0, 12, 0, 0, 0, 14},
00039 /*X*/ { 0, 0, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 0, 0, 10, 0},
00040 /*K*/ { 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 9, 0, 0, 0},
00041 /*I*/ { 0, 6, 0, 0, 5, 0, 0, 0, 0, 14, 0, 0, 13, 0, 0, 0},
00042 /*_*/ { 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0},
00043 /*a*/ { 0, 0, 0, 0, 21, 0, 0, 21, 0, 0, 0, 0, 29, 0, 0, 29}, /*ai?*/
00044 /*c*/ { 0, 0, 0, 17, 0, 0, 0, 0, 0, 0, 0, 25, 0, 0, 0, 0},
00045 /*g*/ { 0, 0, 18, 0, 19, 0, 0, 0, 0, 0, 26, 0, 27, 0, 0, 0},
00046 /*u*/ { 0, 22, 0, 20, 0, 0, 0, 22, 0, 30, 0, 28, 0, 0, 0, 30},
00047 /*x*/ { 0, 0, 0, 0, 0, 0, 18, 0, 0, 0, 0, 0, 0, 0, 26, 0},
00048 /*k*/ { 0, 0, 0, 0, 0, 17, 0, 0, 0, 0, 0, 0, 0, 25, 0, 0},
00049 /*i*/ { 0, 22, 0, 0, 21, 0, 0, 0, 0, 30, 0, 0, 29, 0, 0, 0};
00050
00051 /* define the above as possibly right */
00052
00053 #define MAXALPHA 20          /* maximal length of alphabet */
00054
00055 static short alias[MAXALPHA+1];
00056 static int pair[MAXALPHA+1][MAXALPHA+1];
00057 /* rtype[pair[i][j]]:=pair[j][i] */
00058 /*
00059 static int rtype[8] = {0, 2, 1, 4, 3, 6, 5, 7};
00060 */
00061 static int rtype[NBPAIRS_HYBRID] = {
00062     0, 2, 1, 4, 3, 6, 5, 7,
00063     0, 18, 17, 20, 19, 22, 21, 7,
00064     0, 10, 9, 12, 11, 14, 13, 7,
00065     0, 26, 25, 28, 27, 30, 29, 7};
00066
00067 #ifdef _OPENMP
00068 #pragma omp threadprivate(Law_and_Order, BP_pair, alias, pair, rtype)
00069 #endif
00070
00071 /* for backward compatibility */
00072 #define ENCODE(c) encode_char(c)
00073
00074 static int encode_char(char c) {
00075     /* return numerical representation of base used e.g. in pair[][] */
00076     int code;
00077     if (energy_set>0) code = (int) (c-'A')+1;
00078     else {
00079         const char *pos;
00080         pos = strchr(Law_and_Order, c);
00081         if (pos==NULL) code=0;
00082         else code = (int) (pos-Law_and_Order);
00083         if (code>5) code = 0;
00084         if (code>4) code--; /* make T and U equivalent */
00085     }
00086     return code;
00087 }
00088
00089 /*@+boolint +charint@*/
00090 /*@null@*/
00091 extern char *nonstandards;
00092 extern void nerror(const char message[]);
00093 static void make_pair_matrix(void)
00094 {
00095     int i,j;
00096
00097     if (energy_set==0) {
00098         /* RNA encoding */
00099         for (i=0; i<5; i++) alias[i] = (short) i;
00100         alias[5] = 3; /* X <-> G */
00101         alias[6] = 2; /* K <-> C */
00102         alias[7] = 0; /* I <-> default base '@' */
00103         /* DNA encoding */
00104         for (i=8; i<13; i++) alias[i] = (short) i;
00105         alias[13] = 11; /* x <-> g */
00106         alias[14] = 10; /* k <-> c */
00107         alias[15] = 8; /* i <-> default base '@' */
00108
00109         for (i=0; i<NBASES; i++) {
00110             for (j=0; j<NBASES; j++)
00111                 pair[i][j] = BP_pair[i][j];
00112         }
00113         if (noGU) {

```

```

00114     pair[3][4] = pair[4][3] = 0; /* RNA */
00115     pair[11][4] = pair[4][11] = 0; /* RNA-DNA hybrid */
00116     pair[3][12] = pair[12][3] = 0;
00117     pair[11][12] = pair[12][11] = 0; /* DNA */
00118 }
00119
00120 /* extend this in the near future for hybrids if necessary !!! */
00121 if (nonstandards!=NULL) { /* allow nonstandard bp's */
00122     for (i=0; i<(int)strlen(nonstandards); i+=2)
00123         pair[encode_char(nonstandards[i])]
00124             [encode_char(nonstandards[i+1])]=7;
00125 }
00126 for (i=0; i<NBASES; i++) {
00127     for (j=0; j<NBASES; j++)
00128         rtype[pair[i][j]] = pair[j][i];
00129 }
00130
00131 /* we dont modify this for the hybrid case */
00132 } else {
00133     for (i=0; i<=MAXALPHA; i++) {
00134         for (j=0; j<=MAXALPHA; j++)
00135             pair[i][j] = 0;
00136     }
00137     if (energy_set==1) {
00138         for (i=1; i<MAXALPHA; i++) {
00139             alias[i++] = 3; /* A <-> G */
00140             alias[i++] = 2; /* B <-> C */
00141         }
00142         for (i=1; i<MAXALPHA; i++) {
00143             pair[i][i+1] = 2; /* AB <-> GC */
00144             i++;
00145             pair[i][i-1] = 1; /* BA <-> CG */
00146         }
00147     }
00148     else if (energy_set==2) {
00149         for (i=1; i<MAXALPHA; i++) {
00150             alias[i++] = 1; /* A <-> A */
00151             alias[i++] = 4; /* B <-> U */
00152         }
00153         for (i=1; i<MAXALPHA; i++) {
00154             pair[i][i+1] = 5; /* AB <-> AU */
00155             i++;
00156             pair[i][i-1] = 6; /* BA <-> UA */
00157         }
00158     }
00159     else if (energy_set==3) {
00160         for (i=1; i<MAXALPHA-2; i++) {
00161             alias[i++] = 3; /* A <-> G */
00162             alias[i++] = 2; /* B <-> C */
00163             alias[i++] = 1; /* C <-> A */
00164             alias[i++] = 4; /* D <-> U */
00165         }
00166         for (i=1; i<MAXALPHA-2; i++) {
00167             pair[i][i+1] = 2; /* AB <-> GC */
00168             i++;
00169             pair[i][i-1] = 1; /* BA <-> CG */
00170             i++;
00171             pair[i][i+1] = 5; /* CD <-> AU */
00172             i++;
00173             pair[i][i-1] = 6; /* DC <-> UA */
00174         }
00175     }
00176     else nrerror("What energy_set are YOU using??");
00177     for (i=0; i<=MAXALPHA; i++) {
00178         for (j=0; j<=MAXALPHA; j++)
00179             rtype[pair[i][j]] = pair[j][i];
00180     }
00181 }
00182 }
00183
00184 static short *encode_sequence(const char *sequence, short how) {
00185     unsigned int i,l = (unsigned int)strlen(sequence);
00186     short *S = (short *) space(sizeof(short)*(l+2));
00187
00188     switch(how) {
00189         /* standard encoding as always used for S */
00190         case 0: for(i=1; i<=l; i++) /* make numerical encoding of sequence */
00191                 S[i]= (short) encode_char(toupper(sequence[i-1]));
00192                 S[l+1] = S[1];
00193                 S[0] = (short) 1;
00194                 break;
00195         /* encoding for mismatches of nostandard bases (normally used for S1) */
00196         case -1:
00197         case 1: for(i=1; i<=l; i++)
00198                 S[i] = alias[(short) encode_char(toupper(sequence[i-1]))];
00199                 S[l+1] = S[1];
00200                 S[0] = S[1];

```

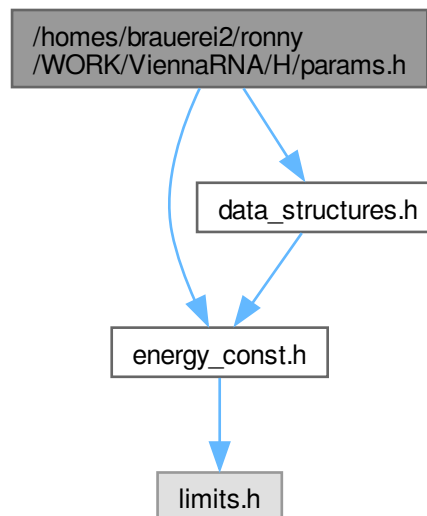
```

00201         break;
00202     /* encode DNA */
00203     case -2: for(i=1; i<=l; i++)
00204             S[i] = ((short) encode_char(toupper(sequence[i-1])))+8;
00205             S[l+1] = S[l];
00206             S[0] = (short) l;
00207         break;
00208     case -3: for(i=1; i<=l; i++)
00209             S[i] = alias[(short) encode_char(toupper(sequence[i-1]))]+8;
00210             S[l+1] = S[l];
00211             S[0] = S[l];
00212         break;
00213     /*encoding dna for rna-dna hybrids */
00214     default: for(i=1; i<how; i++)
00215             S[i] = alias[(short) encode_char(toupper(sequence[i-1]))];
00216             for(; i<=l; i++)
00217                 S[i] = alias[(short) encode_char(toupper(sequence[i-1]))]+8;
00218             S[l+1] = S[l];
00219             S[0] = (short) l;
00220         break;
00221     }
00222
00223     return S;
00224 }

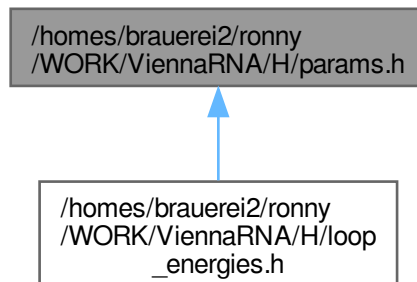
```

11.51 /homes/brauerei2/ronny/WORK/ViennaRNA/H/params.h File Reference

Include dependency graph for params.h:



This graph shows which files directly or indirectly include this file:



Functions

- `paramT * scale_parameters (void)`
Get precomputed energy contributions for all the known loop types.
- `paramT * get_scaled_parameters (double temperature, model_detailsT md)`
Get precomputed energy contributions for all the known loop types.
- `pf_paramT * get_scaled_pf_parameters (void)`
- `pf_paramT * get_boltzmann_factors (double temperature, double betaScale, model_detailsT md, double pf_scale)`
Get precomputed Boltzmann factors of the loop type dependent energy contributions with independent thermodynamic temperature.
- `pf_paramT * get_boltzmann_factor_copy (pf_paramT *parameters)`
Get a copy of already precomputed Boltzmann factors.
- `pf_paramT * get_scaled_pf_parameters_hybrid (void)`
Get precomputed Boltzmann factors of the loop type dependent energy contributions (alifold variant)
- `PUBLIC pf_paramT * get_boltzmann_factors_alifold (unsigned int n_seq, double temperature, double betaScale, model_detailsT md, double pf_scale)`
Get precomputed Boltzmann factors of the loop type dependent energy contributions (alifold variant) with independent thermodynamic temperature.

11.52 params.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_PARAMS_H__
00002 #define __VIENNA_RNA_PACKAGE_PARAMS_H__
00003
00004 #include "energy_const.h"
00005 #include "data_structures.h"
00006
00007 #ifdef __GNUC__
00008 #define DEPRECATED(func) func __attribute__((deprecated))
00009 #else
00010 #define DEPRECATED(func) func
00011 #endif
00012
00036 paramT *scale_parameters(void);
00037
00052 paramT *get_scaled_parameters(double temperature,
00053                               model_detailsT md);
00054
00055 paramT *scale_parameters_hybrid(void);
00056
00057 paramT *get_scaled_parameters_hybrid( double temperature,
  
```

```

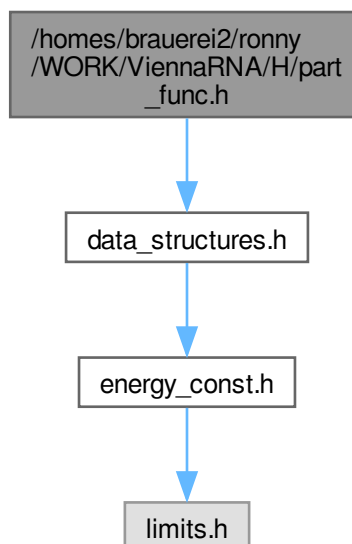
00058                                     model_detailsT md);
00059
00060 paramT *get_parameter_copy(paramT *par);
00061
00062 pf_paramT *get_scaled_pf_parameters(void);
00063
00064 pf_paramT *get_boltzmann_factors( double temperature,
00065                                   double betaScale,
00066                                   model_detailsT md,
00067                                   double pf_scale);
00068
00069 pf_paramT *get_boltzmann_factor_copy(pf_paramT *parameters);
00070
00071 pf_paramT *get_scaled_pf_parameters_hybrid(void);
00072
00073 pf_paramT *get_boltzmann_factors_hybrid(double temperature,
00074                                         double betaScale,
00075                                         model_detailsT md,
00076                                         double pf_scale);
00077
00078 pf_paramT *get_scaled_alipf_parameters(unsigned int n_seq);
00079
00080 PUBLIC pf_paramT *get_boltzmann_factors_alipf(unsigned int n_seq,
00081                                               double temperature,
00082                                               double betaScale,
00083                                               model_detailsT md,
00084                                               double pf_scale);
00085
00086 DEPRECATED(paramT      *copy_parameters(void));
00087 DEPRECATED(paramT      *set_parameters(paramT *dest));
00088 DEPRECATED(pf_paramT   *scale_pf_parameters(void));
00089 DEPRECATED(pf_paramT   *copy_pf_param(void));
00090 DEPRECATED(pf_paramT   *set_pf_param(paramT *dest));
00091
00092 #endif

```

11.53 /homes/brauerei2/ronny/WORK/ViennaRNA/H/part_func.h File Reference

Partition function of single RNA sequences.

Include dependency graph for part_func.h:



Functions

- float [pf_fold_par](#) (const char *sequence, char *structure, [pf_paramT](#) *parameters, int calculate_bppm, int is_constrained, int is_circular)
Compute the partition function Q for a given RNA sequence.
- float [pf_fold](#) (const char *sequence, char *structure)
Compute the partition function Q of an RNA sequence.
- float [pf_circ_fold](#) (const char *sequence, char *structure)
Compute the partition function of a circular RNA sequence.
- char * [pbacktrack](#) (char *sequence)
Sample a secondary structure from the Boltzmann ensemble according its probability
- char * [pbacktrack_circ](#) (char *sequence)
Sample a secondary structure of a circular RNA from the Boltzmann ensemble according its probability.
- void [free_pf_arrays](#) (void)
Free arrays for the partition function recursions.
- void [update_pf_params](#) (int length)
Recalculate energy parameters.
- void [update_pf_params_par](#) (int length, [pf_paramT](#) *parameters)
Recalculate energy parameters.
- double * [export_bppm](#) (void)
Get a pointer to the base pair probability array.
- void [assign_plist_from_pr](#) ([plist](#) **pl, double *probs, int length, double cutoff)
Create a plist from a probability matrix.
- int [get_pf_arrays](#) (short **S_p, short **S1_p, char **ptype_p, double **qb_p, double **qm_p, double **q1k_p, double **qln_p)
Get the pointers to (almost) all relevant computation arrays used in partition function computation.
- double [get_subseq_F](#) (int i, int j)
Get the free energy of a subsequence from the $q[]$ array.
- char * [get_centroid_struct_pl](#) (int length, double *dist, [plist](#) *pl)
Get the centroid structure of the ensemble.
- char * [get_centroid_struct_pr](#) (int length, double *dist, double *pr)
Get the centroid structure of the ensemble.
- double [mean_bp_distance](#) (int length)
Get the mean base pair distance of the last partition function computation.
- double [mean_bp_distance_pr](#) (int length, double *pr)
Get the mean base pair distance in the thermodynamic ensemble.
- void [bppm_to_structure](#) (char *structure, double *pr, unsigned int length)
Create a dot-bracket like structure string from base pair probability matrix.
- char [bppm_symbol](#) (const float *x)
Get a pseudo dot bracket notation for a given probability information.
- void [init_pf_fold](#) (int length)
Allocate space for [pf_fold\(\)](#)
- char * [centroid](#) (int length, double *dist)
- double [mean_bp_dist](#) (int length)
- double [expLoopEnergy](#) (int u1, int u2, int type, int type2, short si1, short sj1, short sp1, short sq1)
- double [expHairpinEnergy](#) (int u, int type, short si1, short sj1, const char *string)

Variables

- int [st_back](#)
Flag indicating that auxiliary arrays are needed throughout the computations. This is essential for stochastic backtracking.

11.53.1 Detailed Description

Partition function of single RNA sequences.

This file includes (almost) all function declarations within the **RNAlib** that are related to Partition function folding...

11.53.2 Function Documentation

11.53.2.1 `init_pf_fold()`

```
void init_pf_fold (
    int length )
```

Allocate space for `pf_fold()`

Deprecated This function is obsolete and will be removed soon!

11.53.2.2 `centroid()`

```
char * centroid (
    int length,
    double * dist )
```

Deprecated This function is deprecated and should not be used anymore as it is not threadsafe!

See also

[get_centroid_struct_pl\(\)](#), [get_centroid_struct_pr\(\)](#)

11.53.2.3 `mean_bp_dist()`

```
double mean_bp_dist (
    int length )
```

get the mean pair distance of ensemble

Deprecated This function is not threadsafe and should not be used anymore. Use [mean_bp_distance\(\)](#) instead!

11.53.2.4 `expLoopEnergy()`

```
double expLoopEnergy (
    int u1,
    int u2,
    int type,
    int type2,
    short sil,
    short sj1,
    short spl,
    short sql )
```

Deprecated Use [exp_E_IntLoop\(\)](#) from [loop_energies.h](#) instead

11.53.2.5 `expHairpinEnergy()`

```
double expHairpinEnergy (
    int u,
    int type,
    short sil,
    short sj1,
    const char * string )
```

Deprecated Use [exp_E_Hairpin\(\)](#) from [loop_energies.h](#) instead

11.54 part_func.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_PART_FUNC_H__
00002 #define __VIENNA_RNA_PACKAGE_PART_FUNC_H__
00003
00004 #include "data_structures.h"
00005
00006 #ifdef __GNUC__
00007 #define DEPRECATED(func) func __attribute__((deprecated))
00008 #else
00009 #define DEPRECATED(func) func
00010 #endif
00011
00012
00041 extern int st_back;
00042
00043 /*
00044 #####
00045 # PARTITION FUNCTION COMPUTATION #
00046 #####
00047 */
00048
00087 float pf_fold_par( const char *sequence,
00088                   char *structure,
00089                   pf_paramT *parameters,
00090                   int calculate_bppm,
00091                   int is_constrained,
00092                   int is_circular);
00093
00133 float pf_fold(const char *sequence,
00134              char *structure);
00135
00161 float pf_circ_fold( const char *sequence,
00162                   char *structure);
00163
00173 char *pbacktrack(char *sequence);
00174
00187 char *pbacktrack_circ(char *sequence);
00188
00204 void free_pf_arrays(void);
00205
00215 void update_pf_params(int length);
00216
00223 void update_pf_params_par(int length, pf_paramT *parameters);
00224
00241 FLT_OR_DBL *export_bppm(void);
00242
00243 /*
00244 #####
00245 # OTHER PARTITION FUNCTION RELATED DECLARATIONS #
00246 #####
00247 */
00248
00266 void assign_plist_from_pr( plist **pl,
00267                          FLT_OR_DBL *probs,
00268                          int length,
00269                          double cutoff);
00270
00271 /* this doesn't work if free_pf_arrays() is called before */
00272 void assign_plist_gquad_from_pr(plist **pl,
00273                                int length,
00274                                double cut_off);
00275
00276 char *get_centroid_struct_gquad_pr(int length,
00277                                   double *dist);
00278
00294 int get_pf_arrays(short **S_p,
00295                  short **Sl_p,
00296                  char **ptype_p,
00297                  FLT_OR_DBL **qb_p,
00298                  FLT_OR_DBL **qm_p,
00299                  FLT_OR_DBL **qlk_p,
00300                  FLT_OR_DBL **qln_p);
00301
00305 double get_subseq_F(int i, int j);
00306
00323 char *get_centroid_struct_pl(int length,
00324                             double *dist,
00325                             plist *pl);
00326
00343 char *get_centroid_struct_pr(int length,
00344                             double *dist,
00345                             FLT_OR_DBL *pr);
00346
00359 double mean_bp_distance(int length);

```

```

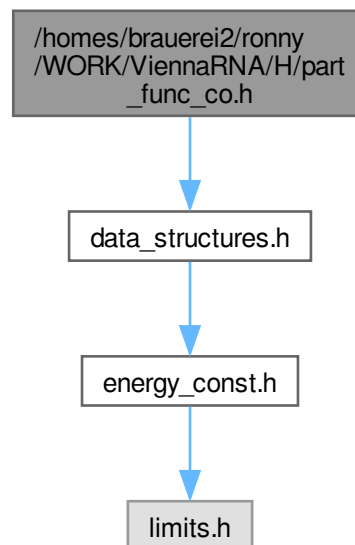
00360
00378 double  mean_bp_distance_pr(int length,
00379                               FLT_OR_DBL *pr);
00380
00384 void  bppm_to_structure(char *structure,
00385                          FLT_OR_DBL *pr,
00386                          unsigned int length);
00387
00388 plist *stackProb(double cutoff);
00389
00393 char  bppm_symbol(const float *x);
00394
00395
00396 /*
00397 #####
00398 # DEPRECATED FUNCTIONS #
00399 #####
00400 */
00401
00407 DEPRECATED(void init_pf_fold(int length));
00408
00413 DEPRECATED(char *centroid(int length,
00414                             double *dist)); /* mean pair distance of ensemble */
00415
00421 DEPRECATED(double mean_bp_dist(int length));
00422
00426 DEPRECATED(double expLoopEnergy(int u1,
00427                                   int u2,
00428                                   int type,
00429                                   int type2,
00430                                   short sil,
00431                                   short sjl,
00432                                   short spl,
00433                                   short sql));
00434
00438 DEPRECATED(double expHairpinEnergy( int u,
00439                                       int type,
00440                                       short sil,
00441                                       short sjl,
00442                                       const char *string));
00443
00444 #endif

```

11.55 /homes/brauerei2/ronny/WORK/ViennaRNA/H/part_func_co.h File Reference

Partition function for two RNA sequences.

Include dependency graph for part_func_co.h:



Functions

- `cofoldF co_pf_fold` (char *sequence, char *structure)
Calculate partition function and base pair probabilities.
- `cofoldF co_pf_fold_par` (char *sequence, char *structure, `pf_paramT` *parameters, int calculate_bppm, int is_constrained)
Calculate partition function and base pair probabilities.
- `double * export_co_bppm` (void)
Get a pointer to the base pair probability array.
- `void free_co_pf_arrays` (void)
Free the memory occupied by `co_pf_fold()`
- `void update_co_pf_params` (int length)
Recalculate energy parameters.
- `void update_co_pf_params_par` (int length, `pf_paramT` *parameters)
Recalculate energy parameters.
- `void compute_probabilities` (double FAB, double FEA, double FEB, struct `plist` *prAB, struct `plist` *prA, struct `plist` *prB, int Alength)
Compute Boltzmann probabilities of dimerization without homodimers.
- `ConcEnt * get_concentrations` (double FEAB, double FEAA, double FEBB, double FEA, double FEB, double *startconc)
Given two start monomer concentrations a and b, compute the concentrations in thermodynamic equilibrium of all dimers and the monomers.
- `plist * get_plist` (struct `plist` *pl, int length, double cut_off)
- `void init_co_pf_fold` (int length)

Variables

- int **mirnatog**
Toggles no intrabp in 2nd mol.
- double **F_monomer** [2]
Free energies of the two monomers.

11.55.1 Detailed Description

Partition function for two RNA sequences.

As for folding one RNA molecule, this computes the partition function of all possible structures and the base pair probabilities. Uses the same global [pf_scale](#) variable to avoid overflows.

To simplify the implementation the partition function computation is done internally in a null model that does not include the duplex initiation energy, i.e. the entropic penalty for producing a dimer from two monomers). The resulting free energies and pair probabilities are initially relative to that null model. In a second step the free energies can be corrected to include the dimerization penalty, and the pair probabilities can be divided into the conditional pair probabilities given that a re dimer is formed or not formed.

After computing the partition functions of all possible dimers one can compute the probabilities of base pairs, the concentrations out of start concentrations and sofar and soaway.

Dimer formation is inherently concentration dependent. Given the free energies of the monomers A and B and dimers AB, AA, and BB one can compute the equilibrium concentrations, given input concentrations of A and B, see e.g. Dimitrov & Zuker (2004)

11.55.2 Function Documentation

11.55.2.1 `get_plist()`

```
plist * get_plist (
    struct plist * pl,
    int length,
    double cut_off )
```

DO NOT USE THIS FUNCTION ANYMORE

Deprecated use `assign_plist_from_pr()` instead!

11.55.2.2 `init_co_pf_fold()`

```
void init_co_pf_fold (
    int length )
```

DO NOT USE THIS FUNCTION ANYMORE

Deprecated

11.56 `part_func_co.h`

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_PART_FUNC_CO_H__
00002 #define __VIENNA_RNA_PACKAGE_PART_FUNC_CO_H__
00003
00004 #include "data_structures.h"
00005
00006 #ifdef __GNUC__
00007 #define DEPRECATED(func) func __attribute__((deprecated))
00008 #else
00009 #define DEPRECATED(func) func
00010 #endif
00011
00055 extern int    mirnatog;
00056
00060 extern double F_monomer[2];
00061
00080 cofoldF co_pf_fold( char *sequence,
00081                    char *structure);
00082
```

```

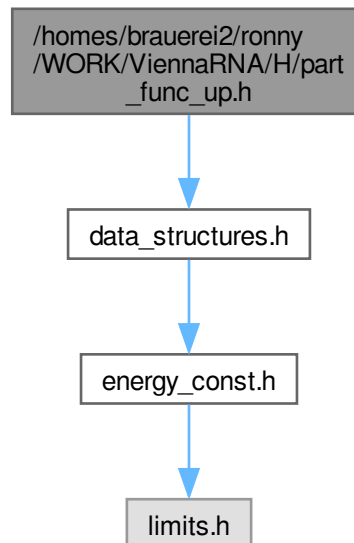
00100 cofoldF co_pf_fold_par( char *sequence,
00101                        char *structure,
00102                        pf_paramT *parameters,
00103                        int calculate_bppm,
00104                        int is_constrained);
00105
00115 FLT_OR_DBL *export_co_bppm(void);
00116
00120 void      free_co_pf_arrays(void);
00121
00136 void      update_co_pf_params(int length);
00137
00157 void      update_co_pf_params_par(int length,
00158                                pf_paramT *parameters);
00159
00177 void      compute_probabilities(double FAB,
00178                                double FEA,
00179                                double FEB,
00180                                struct plist *prAB,
00181                                struct plist *prA,
00182                                struct plist *prB,
00183                                int Alength);
00184
00203 ConcEnt *get_concentrations(double FEAB,
00204                             double FEAA,
00205                             double FEBB,
00206                             double FEA,
00207                             double FEB,
00208                             double *startconc);
00209
00210
00215 /*
00216 #####
00217 # DEPRECATED FUNCTIONS                                     #
00218 #####
00219 */
00220
00226 DEPRECATED(plist *get_plist( struct plist *pl,
00227                             int length,
00228                             double cut_off));
00233 DEPRECATED(void      init_co_pf_fold(int length));
00234
00235 #endif

```

11.57 /homes/brauerei2/ronny/WORK/ViennaRNA/H/part_func_up.h File Reference

Partition Function Cofolding as stepwise process.

Include dependency graph for `part_func_up.h`:



Functions

- `pu_contrib * pf_unstru` (char *sequence, int max_w)
Calculate the partition function over all unpaired regions of a maximal length.
- `interact * pf_interact` (const char *s1, const char *s2, `pu_contrib *p_c`, `pu_contrib *p_c2`, int max_w, char *cstruc, int incr3, int incr5)
Calculates the probability of a local interaction between two sequences.
- void `free_interact` (`interact *pin`)
Frees the output of function `pf_interact()`.
- void `free_pu_contrib_struct` (`pu_contrib *pu`)
Frees the output of function `pf_unstru()`.

11.57.1 Detailed Description

Partition Function Cofolding as stepwise process.

In this approach to cofolding the interaction between two RNA molecules is seen as a stepwise process. In a first step, the target molecule has to adopt a structure in which a binding site is accessible. In a second step, the ligand molecule will hybridize with a region accessible to an interaction. Consequently the algorithm is designed as a two step process: The first step is the calculation of the probability that a region within the target is unpaired, or equivalently, the calculation of the free energy needed to expose a region. In the second step we compute the free energy of an interaction for every possible binding site.

11.58 part_func_up.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_PART_FUNC_UP_H__
00002 #define __VIENNA_RNA_PACKAGE_PART_FUNC_UP_H__
00003
00004 #include "data_structures.h"
00005
00006 #define RNA_UP_MODE_1 1U
  
```



```

00007 #define RNA_UP_MODE_2 2U
00008 #define RNA_UP_MODE_3 4U
00009
00055 pu_contrib *pf_unstru(char *sequence,
00056                        int max_w);
00057
00100 interact *pf_interact(const char *s1,
00101                      const char *s2,
00102                      pu_contrib *p_c,
00103                      pu_contrib *p_c2,
00104                      int max_w,
00105                      char *cstruc,
00106                      int incr3,
00107                      int incr5);
00108
00112 void free_interact(interact *pin);
00113
00117 int Up_plot(pu_contrib *p_c,
00118            pu_contrib *p_c_sh,
00119            interact *pint,
00120            char *ofile,
00121            int **unpaired_values,
00122            char *select_contrib,
00123            char *head,
00124            unsigned int mode);
00125
00129 pu_contrib *get_pu_contrib_struct( unsigned int n,
00130                                   unsigned int w);
00131
00135 void free_pu_contrib_struct(pu_contrib *pu);
00136
00141 #endif

```

11.59 PKplex.h

```

00001 #ifndef PKPLEX_H
00002 #define PKPLEX_H
00003
00004 #include "data_structures.h"
00005
00006 extern dupVar *PlexHits;
00007 extern int PlexHitsArrayLength;
00008 extern int NumberOfHits;
00009 extern int verbose;
00010
00011
00015 dupVar **PKLduplexfold_XS( const char *s1,
00016                          int **access_s1,
00017                          const int threshold,
00018                          const int alignment_length,
00019                          const int delta);
00020
00021 int arraySize(duplexT **array);
00022
00023 void freeDuplexT(duplexT **array);
00024
00025 #endif

```

11.60 plex.h

```

00001 #ifndef __VIENNA_RNA_PACKAGE_PLEX_H__
00002 #define __VIENNA_RNA_PACKAGE_PLEX_H__
00003
00004 #include "data_structures.h"
00005
00006
00007 extern int subopt_sorted;
00008
00012 duplexT** Lduplexfold(const char *s1,
00013                     const char *s2,
00014                     const int threshold,
00015                     const int extension_cost,
00016                     const int alignment_length,
00017                     const int delta,
00018                     const int fast,
00019                     const int il_a,
00020                     const int il_b,
00021                     const int b_a,
00022                     const int b_b);
00023
00027 duplexT** Lduplexfold_XS( const char*s1,
00028                          const char* s2,

```

```

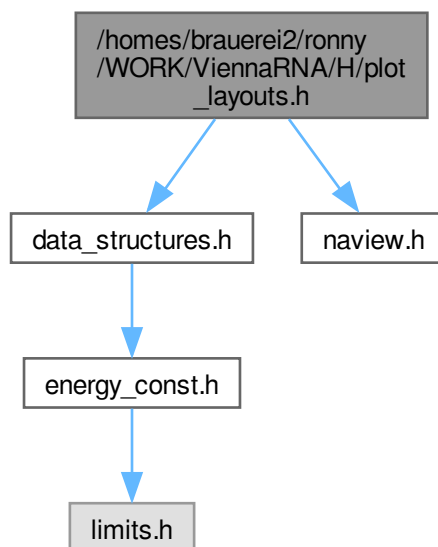
00029         const int **access_s1,
00030         const int **access_s2,
00031         const int threshold,
00032         const int delta,
00033         const int alignment_length,
00034         const int fast,
00035         const int il_a,
00036         const int il_b,
00037         const int b_a,
00038         const int b_b); /* , const int target_dead, const int query_dead); */
00039
00043 duplexT** Lduplexfold_C(const char *s1,
00044                       const char *s2,
00045                       const int threshold,
00046                       const int extension_cost,
00047                       const int alignment_length,
00048                       const int delta,
00049                       const int fast,
00050                       const char* structure,
00051                       const int il_a,
00052                       const int il_b,
00053                       const int b_a,
00054                       const int b_b);
00055
00060 duplexT** Lduplexfold_CXS(const char*s1,
00061                          const char* s2,
00062                          const int **access_s1,
00063                          const int **access_s2,
00064                          const int threshold,
00065                          const int delta,
00066                          const int alignment_length,
00067                          const int fast,
00068                          const char* structure,
00069                          const int il_a,
00070                          const int il_b,
00071                          const int b_a,
00072                          const int b_b); /* , const int target_dead, const int query_dead); */
00073
00074
00075
00076
00077 int      arraySize(duplexT** array);
00078 void     freeDuplexT(duplexT** array);
00079
00080 #endif

```

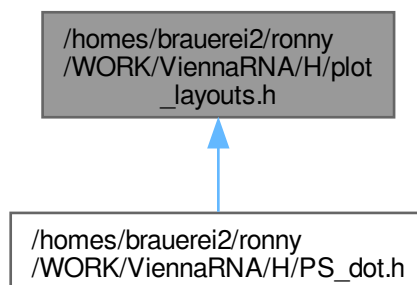
11.61 /homes/brauerei2/ronny/WORK/ViennaRNA/H/plot_layouts.h File Reference

Secondary structure plot layout algorithms.

Include dependency graph for plot_layouts.h:



This graph shows which files directly or indirectly include this file:



Macros

- `#define VRNA_PLOT_TYPE_SIMPLE 0`
Definition of Plot type simple
- `#define VRNA_PLOT_TYPE_NAVIEW 1`
Definition of Plot type Naview
- `#define VRNA_PLOT_TYPE_CIRCULAR 2`
Definition of Plot type Circular

Functions

- int [simple_xy_coordinates](#) (short *pair_table, float *X, float *Y)
Calculate nucleotide coordinates for secondary structure plot the Simple way
- int [simple_circplot_coordinates](#) (short *pair_table, float *x, float *y)
Calculate nucleotide coordinates for Circular Plot

Variables

- int [rna_plot_type](#)
Switch for changing the secondary structure layout algorithm.

11.61.1 Detailed Description

Secondary structure plot layout algorithms.
c Ronny Lorenz The ViennaRNA Package

11.61.2 Macro Definition Documentation

11.61.2.1 VRNA_PLOT_TYPE_SIMPLE

```
#define VRNA_PLOT_TYPE_SIMPLE 0
```

Definition of Plot type *simple*

This is the plot type definition for several RNA structure plotting functions telling them to use **Simple** plotting algorithm

See also

[rna_plot_type](#), [PS_rna_plot_a\(\)](#), [PS_rna_plot\(\)](#), [svg_rna_plot\(\)](#), [gmlRNA\(\)](#), [ssv_rna_plot\(\)](#), [xrna_plot\(\)](#)

11.61.2.2 VRNA_PLOT_TYPE_NAVIEW

```
#define VRNA_PLOT_TYPE_NAVIEW 1
```

Definition of Plot type *Naview*

This is the plot type definition for several RNA structure plotting functions telling them to use **Naview** plotting algorithm

See also

[rna_plot_type](#), [PS_rna_plot_a\(\)](#), [PS_rna_plot\(\)](#), [svg_rna_plot\(\)](#), [gmlRNA\(\)](#), [ssv_rna_plot\(\)](#), [xrna_plot\(\)](#)

11.61.2.3 VRNA_PLOT_TYPE_CIRCULAR

```
#define VRNA_PLOT_TYPE_CIRCULAR 2
```

Definition of Plot type *Circular*

This is the plot type definition for several RNA structure plotting functions telling them to produce a **Circular plot**

See also

[rna_plot_type](#), [PS_rna_plot_a\(\)](#), [PS_rna_plot\(\)](#), [svg_rna_plot\(\)](#), [gmlRNA\(\)](#), [ssv_rna_plot\(\)](#), [xrna_plot\(\)](#)

11.61.3 Function Documentation

11.61.3.1 simple_xy_coordinates()

```
int simple_xy_coordinates (
    short * pair_table,
    float * X,
    float * Y )
```

Calculate nucleotide coordinates for secondary structure plot the *Simple way*

See also

[make_pair_table\(\)](#), [rna_plot_type](#), [simple_circplot_coordinates\(\)](#), [naview_xy_coordinates\(\)](#), [PS_rna_plot_a\(\)](#), [PS_rna_plot](#), [svg_rna_plot\(\)](#)

Parameters

<i>pair_table</i>	The pair table of the secondary structure
<i>X</i>	a pointer to an array with enough allocated space to hold the x coordinates
<i>Y</i>	a pointer to an array with enough allocated space to hold the y coordinates

Returns

length of sequence on success, 0 otherwise

11.61.3.2 simple_circplot_coordinates()

```
int simple_circplot_coordinates (
    short * pair_table,
    float * x,
    float * y )
```

Calculate nucleotide coordinates for *Circular Plot*

This function calculates the coordinates of nucleotides mapped in equal distances onto a unit circle.

Note

In order to draw nice arcs using quadratic bezier curves that connect base pairs one may calculate a second tangential point P^t in addition to the actual \mathbb{R}^2 coordinates. the simplest way to do so may be to compute a radius scaling factor rs in the interval $[0, 1]$ that weights the proportion of base pair span to the actual length of the sequence. This scaling factor can then be used to calculate the coordinates for P^t , i.e. $P_x^t[i] = X[i] * rs$ and $P_y^t[i] = Y[i] * rs$.

See also

[make_pair_table\(\)](#), [rna_plot_type](#), [simple_xy_coordinates\(\)](#), [naview_xy_coordinates\(\)](#), [PS_rna_plot_a\(\)](#), [PS_rna_plot](#), [svg_rna_plot\(\)](#)

Parameters

<i>pair_table</i>	The pair table of the secondary structure
<i>x</i>	a pointer to an array with enough allocated space to hold the x coordinates
<i>y</i>	a pointer to an array with enough allocated space to hold the y coordinates

Returns

length of sequence on success, 0 otherwise

11.61.4 Variable Documentation

11.61.4.1 rna_plot_type

```
int rna_plot_type [extern]
```

Switch for changing the secondary structure layout algorithm.

Current possibilities are 0 for a simple radial drawing or 1 for the modified radial drawing taken from the *naview* program of Brucoleri & Heinrich (1988).

Note

To provide thread safety please do not rely on this global variable in future implementations but pass a plot type flag directly to the function that decides which layout algorithm it may use!

See also

[VRNA_PLOT_TYPE_SIMPLE](#), [VRNA_PLOT_TYPE_NAVIEW](#), [VRNA_PLOT_TYPE_CIRCULAR](#)

11.62 plot_layouts.h

[Go to the documentation of this file.](#)

```

00001
00009 #ifndef __VIENNA_RNA_PACKAGE_PLOT_LAYOUTS_H__
00010 #define __VIENNA_RNA_PACKAGE_PLOT_LAYOUTS_H__
00011
00012 #include "data_structures.h"
00013 #include "naview.h"
00014
00015 #ifndef PI
00016 #define PI 3.141592654
00017 #endif
00018 #define PIHALF PI/2.
00019
00020
00029 #define VRNA_PLOT_TYPE_SIMPLE 0
00030
00039 #define VRNA_PLOT_TYPE_NAVIEW 1
00040
00049 #define VRNA_PLOT_TYPE_CIRCULAR 2
00050
00051
00064 extern int rna_plot_type;
00065
00077 int simple_xy_coordinates(short *pair_table,
00078                          float *X,
00079                          float *Y);
00080
00101 int simple_circplot_coordinates(short *pair_table,
00102                                float *x,
00103                                float *y);
00104
00105
00106 #endif

```

11.63 ProfileAln.h

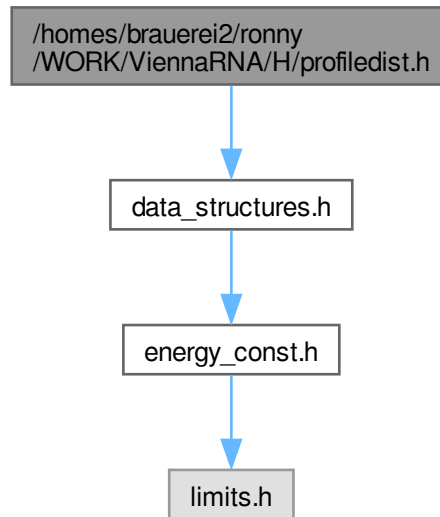
```

00001 #ifndef __VIENNA_RNA_PACKAGE_PROFILEALN_H__
00002 #define __VIENNA_RNA_PACKAGE_PROFILEALN_H__
00003
00004 float profile_aln(const float *T1,
00005                  const char *seq1,
00006                  const float *T2,
00007                  const char *seq2);
00008
00009 int set_paln_params(double gap_open,
00010                    double gap_ext,
00011                    double seqweight,
00012                    int free_ends);
00013
00014 #endif

```

11.64 /homes/brauerei2/ronny/WORK/ViennaRNA/H/profiledist.h File Reference

Include dependency graph for profiledist.h:



Functions

- float [profile_edit_distance](#) (const float *T1, const float *T2)
Align the 2 probability profiles T1, T2
- float * [Make_bp_profile_bppm](#) (double *bppm, int length)
condense pair probability matrix into a vector containing probabilities for unpaired, upstream paired and downstream paired.
- void [print_bppm](#) (const float *T)
print string representation of probability profile
- void [free_profile](#) (float *T)
free space allocated in Make_bp_profile
- float * [Make_bp_profile](#) (int length)

11.64.1 Detailed Description

11.64.2 Function Documentation

11.64.2.1 profile_edit_distance()

```
float profile_edit_distance (
    const float * T1,
    const float * T2 )
```

Align the 2 probability profiles T1, T2

This is like a Needleman-Wunsch alignment, we should really use affine gap-costs ala Gotoh

11.64.2.2 Make_bp_profile_bppm()

```
float * Make_bp_profile_bppm (
    double * bppm,
    int length )
```

condense pair probability matrix into a vector containing probabilities for unpaired, upstream paired and downstream paired.

This resulting probability profile is used as input for profile_edit_distance

Parameters

<i>bppm</i>	A pointer to the base pair probability matrix
<i>length</i>	The length of the sequence

Returns

The bp profile

11.64.2.3 free_profile()

```
void free_profile (
    float * T )
```

free space allocated in Make_bp_profile

Backward compatibility only. You can just use plain free()

11.64.2.4 Make_bp_profile()

```
float * Make_bp_profile (
    int length )
```

Note

This function is NOT threadsafe

See also

[Make_bp_profile_bppm\(\)](#)

Deprecated This function is deprecated and will be removed soon! See [Make_bp_profile_bppm\(\)](#) for a replacement

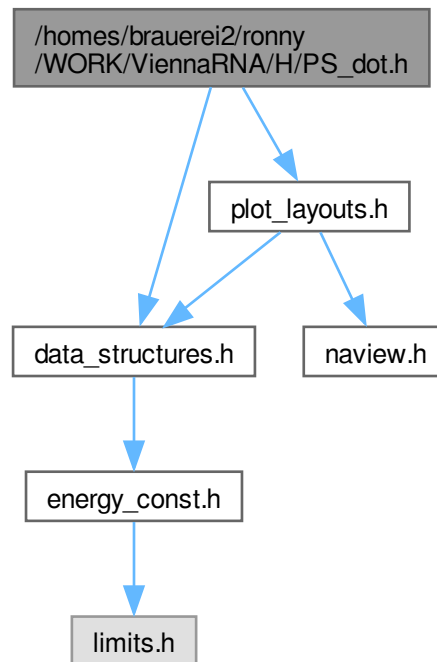
11.65 profiledist.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_PROFILEDIST_H__
00002 #define __VIENNA_RNA_PACKAGE_PROFILEDIST_H__
00003
00004 #ifdef __GNUC__
00005 #define DEPRECATED(func) func __attribute__((deprecated))
00006 #else
00007 #define DEPRECATED(func) func
00008 #endif
00009
00010 #include "data_structures.h"
00011
00020 float profile_edit_distance(const float *T1,
00021                             const float *T2);
00022
00033 float *Make_bp_profile_bppm(FLT_OR_DBL *bppm,
00034                             int length);
00035
00039 void print_bppm(const float *T);
00040
00046 void free_profile(float *T);
00047
00056 DEPRECATED(float *Make_bp_profile(int length));
00057
00058 #endif
```


11.66 /homes/brauerei2/ronny/WORK/ViennaRNA/H/PS_dot.h File Reference

Various functions for plotting RNA secondary structures, dot-plots and other visualizations.
Include dependency graph for PS_dot.h:



Functions

- `int PS_rna_plot (char *string, char *structure, char *file)`
Produce a secondary structure graph in PostScript and write it to 'filename'.
- `int PS_rna_plot_a (char *string, char *structure, char *file, char *pre, char *post)`
Produce a secondary structure graph in PostScript including additional annotation macros and write it to 'filename'.
- `int gmlRNA (char *string, char *structure, char *ssfile, char option)`
Produce a secondary structure graph in Graph Meta Language (gml) and write it to a file.
- `int ssv_rna_plot (char *string, char *structure, char *ssfile)`
Produce a secondary structure graph in SStructView format.
- `int svg_rna_plot (char *string, char *structure, char *ssfile)`
Produce a secondary structure plot in SVG format and write it to a file.
- `int xrna_plot (char *string, char *structure, char *ssfile)`
Produce a secondary structure plot for further editing in XRNA.
- `int PS_dot_plot_list (char *seq, char *filename, plist *pl, plist *mf, char *comment)`
Produce a postscript dot-plot from two pair lists.
- `int aliPS_color_aln (const char *structure, const char *filename, const char *seqs[], const char *names[])`
- `int PS_dot_plot (char *string, char *file)`
Produce postscript dot-plot.

11.66.1 Detailed Description

Various functions for plotting RNA secondary structures, dot-plots and other visualizations.

11.66.2 Function Documentation

11.66.2.1 PS_rna_plot()

```
int PS_rna_plot (
    char * string,
    char * structure,
    char * file )
```

Produce a secondary structure graph in PostScript and write it to 'filename'.

Note that this function has changed from previous versions and now expects the structure to be plotted in dot-bracket notation as an argument. It does not make use of the global [base_pair](#) array anymore.

Parameters

<i>string</i>	The RNA sequence
<i>structure</i>	The secondary structure in dot-bracket notation
<i>file</i>	The filename of the postscript output

Returns

1 on success, 0 otherwise

11.66.2.2 PS_rna_plot_a()

```
int PS_rna_plot_a (
    char * string,
    char * structure,
    char * file,
    char * pre,
    char * post )
```

Produce a secondary structure graph in PostScript including additional annotation macros and write it to 'filename'. Same as [PS_rna_plot\(\)](#) but adds extra PostScript macros for various annotations (see generated PS code). The 'pre' and 'post' variables contain PostScript code that is verbatim copied in the resulting PS file just before and after the structure plot. If both arguments ('pre' and 'post') are NULL, no additional macros will be printed into the PostScript.

Parameters

<i>string</i>	The RNA sequence
<i>structure</i>	The secondary structure in dot-bracket notation
<i>file</i>	The filename of the postscript output
<i>pre</i>	PostScript code to appear before the secondary structure plot
<i>post</i>	PostScript code to appear after the secondary structure plot

Returns

1 on success, 0 otherwise

11.66.2.3 gmlRNA()

```
int gmlRNA (
    char * string,
```

```
char * structure,  
char * ssfile,  
char option )
```

Produce a secondary structure graph in Graph Meta Language (gml) and write it to a file.

If 'option' is an uppercase letter the RNA sequence is used to label nodes, if 'option' equals 'X' or 'x' the resulting file will contain coordinates for an initial layout of the graph.

Parameters

<i>string</i>	The RNA sequence
<i>structure</i>	The secondary structure in dot-bracket notation
<i>ssfile</i>	The filename of the gml output
<i>option</i>	The option flag

Returns

1 on success, 0 otherwise

11.66.2.4 ssv_rna_plot()

```
int ssv_rna_plot (  
    char * string,  
    char * structure,  
    char * ssfile )
```

Produce a secondary structure graph in SStructView format.

Write coord file for SStructView

Parameters

<i>string</i>	The RNA sequence
<i>structure</i>	The secondary structure in dot-bracket notation
<i>ssfile</i>	The filename of the ssv output

Returns

1 on success, 0 otherwise

11.66.2.5 svg_rna_plot()

```
int svg_rna_plot (  
    char * string,  
    char * structure,  
    char * ssfile )
```

Produce a secondary structure plot in SVG format and write it to a file.

Parameters

<i>string</i>	The RNA sequence
<i>structure</i>	The secondary structure in dot-bracket notation
<i>ssfile</i>	The filename of the svg output

Returns

1 on success, 0 otherwise

11.66.2.6 xrna_plot()

```
int xrna_plot (
    char * string,
    char * structure,
    char * ssfile )
```

Produce a secondary structure plot for further editing in XRNA.

Parameters

<i>string</i>	The RNA sequence
<i>structure</i>	The secondary structure in dot-bracket notation
<i>ssfile</i>	The filename of the xrna output

Returns

1 on success, 0 otherwise

11.66.2.7 PS_dot_plot_list()

```
int PS_dot_plot_list (
    char * seq,
    char * filename,
    plist * pl,
    plist * mf,
    char * comment )
```

Produce a postscript dot-plot from two pair lists.

This function reads two plist structures (e.g. base pair probabilities and a secondary structure) as produced by [assign_plist_from_pr\(\)](#) and [assign_plist_from_db\(\)](#) and produces a postscript "dot plot" that is written to 'filename'. Using base pair probabilities in the first and mfe structure in the second plist, the resulting "dot plot" represents each base pairing probability by a square of corresponding area in a upper triangle matrix. The lower part of the matrix contains the minimum free energy structure.

See also

[assign_plist_from_pr\(\)](#), [assign_plist_from_db\(\)](#)

Parameters

<i>seq</i>	The RNA sequence
<i>filename</i>	A filename for the postscript output
<i>pl</i>	The base pair probability pairlist
<i>mf</i>	The mfe secondary structure pairlist
<i>comment</i>	A comment

Returns

1 if postscript was successfully written, 0 otherwise

11.66.2.8 aliPS_color_aln()

```
int aliPS_color_aln (
    const char * structure,
    const char * filename,
    const char * seqs[],
    const char * names[] )
```

PS_color_aln for duplexes

11.66.2.9 PS_dot_plot()

```
int PS_dot_plot (
    char * string,
    char * file )
```

Produce postscript dot-plot.

Wrapper to PS_dot_plot_list

Reads base pair probabilities produced by [pf_fold\(\)](#) from the global array [pr](#) and the pair list [base_pair](#) produced by [fold\(\)](#) and produces a postscript "dot plot" that is written to 'filename'. The "dot plot" represents each base pairing probability by a square of corresponding area in a upper triangle matrix. The lower part of the matrix contains the minimum free energy

Note

DO NOT USE THIS FUNCTION ANYMORE SINCE IT IS NOT THREADSAFE

Deprecated This function is deprecated and will be removed soon! Use [PS_dot_plot_list\(\)](#) instead!

11.67 PS_dot.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_PS_DOT_H__
00002 #define __VIENNA_RNA_PACKAGE_PS_DOT_H__
00003
00004 #include "data_structures.h"
00005 #include "plot_layouts.h"
00006
00007 #ifdef __GNUC__
00008 #define DEPRECATED(func) func __attribute__((deprecated))
00009 #else
00010 #define DEPRECATED(func) func
00011 #endif
00012
00019 /* write PostScript drawing of structure to file with annotation */
00020 int PS_rna_plot_snoop_a(char *string,
00021     char *structure,
00022     char *ssfile,
00023     int *relative_access,
00024     const char *seqs[]);
00025
00038 int PS_rna_plot(char *string,
00039     char *structure,
00040     char *file);
00041
00060 int PS_rna_plot_a(char *string,
00061     char *structure,
00062     char *file,
00063     char *pre,
00064     char *post);
00065
00066 int PS_rna_plot_a_gquad(char *string,
00067     char *structure,
00068     char *ssfile,
00069     char *pre,
00070     char *post);
00071
00084 int gmlRNA( char *string,
00085     char *structure,
00086     char *ssfile,
00087     char option);
00088
00099 int ssv_rna_plot( char *string,
00100     char *structure,
00101     char *ssfile);
00102
00111 int svg_rna_plot( char *string,
00112     char *structure,
00113     char *ssfile);
00114
00123 int xrna_plot(char *string,
00124     char *structure,
00125     char *ssfile);
00126
00127 int PS_color_dot_plot(char *string,
00128     cpair *pi,
00129     char *filename);
00130
00131 int PS_color_dot_plot_turn( char *seq,
00132     cpair *pi,
```

```

00133             char *filename,
00134             int winSize);
00135
00155 int PS_dot_plot_list( char *seq,
00156                     char *filename,
00157                     plist *pl,
00158                     plist *mf,
00159                     char *comment);
00160
00161 int PS_dot_plot_turn( char *seq,
00162                     struct plist *pl,
00163                     char *filename,
00164                     int winSize);
00165
00166 int PS_color_aln( const char *structure,
00167                 const char *filename,
00168                 const char *seqs[],
00169                 const char *names[]);
00170
00174 int aliPS_color_aln(const char *structure,
00175                   const char *filename,
00176                   const char *seqs[],
00177                   const char *names[]);
00178
00179
00195 DEPRECATED(int PS_dot_plot( char *string,
00196                             char *file));
00197 #endif

```

11.68 /homes/brauerei2/ronny/WORK/ViennaRNA/H/read_epars.h File Reference

Enumerations

- enum [parset](#)

Identifiers for energy contribution parameters in parameter files.

Functions

- void [read_parameter_file](#) (const char fname[])
Read energy parameters from a file.
- void [write_parameter_file](#) (const char fname[])
Write energy parameters to a file.

11.69 read_epars.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_READ_EPARS_H__
00002 #define __VIENNA_RNA_PACKAGE_READ_EPARS_H__
00003
00022 enum parset {
00023     /* misc identifiers */
00024     UNKNOWN = -1,
00025     QUIT = 0, /* end of parameter file */
00026
00027     /*
00028      The following enumeration identifiers are used throughout the library
00029      to indicate read/write from/to the regular energy contribution arrays,
00030      i.e. the ones used in all folding recursions for base pair types <= 7.
00031      For simplicity and to keep things clear we associate these arrays with
00032      RNA contributions although they can be filled with contributions for
00033      any kind of interaction via the read_parameter_file() function
00034     */
00035
00036     /* RNA loop type specific identifiers */
00037     S, S_H,
00038     HP, HP_H,
00039     B, B_H,
00040     IL, IL_H,
00041     INT11, INT11_H, INT21, INT21_H, INT22, INT22_H,
00042     ML,
00043     /* RNA mismatch identifiers */
00044     MMH, MMH_H,
00045     MMI, MMI_H,

```

```

00046 MMI1N, MMI1N_H, MMI23, MMI23_H,
00047 MMM, MMM_H,
00048 MME, MME_H,
00049 /* RNA dangling end identifiers */
00050 D5, D5_H,
00051 D3, D3_H,
00052 /* RNA special hairpin identifiers */
00053 TRI, TL, HEX,
00054 /* RNA other identifiers */
00055 NIN, MISC,
00056
00057 /*
00058  Below are the identifiers used for DNA parameters in all the hybridisation
00059  routines. Note that they will be used only if RNA/DNA hybridisation is
00060  activated (base pair types >= 7 are occurring)
00061  */
00062
00063 /* DNA loop type specific identifiers */
00064 S_DNA, S_H_DNA,
00065 HP_DNA, HP_H_DNA,
00066 B_DNA, B_H_DNA,
00067 IL_DNA, IL_H_DNA,
00068 INT11_DNA, INT11_H_DNA, INT21_DNA, INT21_H_DNA, INT22_DNA, INT22_H_DNA,
00069 ML_DNA,
00070 /* RNA mismatch identifiers */
00071 MMH_DNA, MMH_H_DNA,
00072 MMI_DNA, MMI_H_DNA,
00073 MMI1N_DNA, MMI1N_H_DNA, MMI23_DNA, MMI23_H_DNA,
00074 MMM_DNA, MMM_H_DNA,
00075 MME_DNA, MME_H_DNA,
00076 /* DNA dangling end identifiers */
00077 D5_DNA, D5_H_DNA,
00078 D3_DNA, D3_H_DNA,
00079 /* DNA special hairpin identifiers */
00080 TRI_DNA, TL_DNA, HEX_DNA,
00081 /* DNA other identifiers */
00082 NIN_DNA, MISC_DNA,
00083
00084 /* Finally, the RNA/DNA hybrid identifiers */
00085
00086 /* RNA/DNA hybrid loop type specific identifiers */
00087 S_HYBRID, S_H_HYBRID,
00088 HP_HYBRID, HP_H_HYBRID,
00089 B_HYBRID, B_H_HYBRID,
00090 IL_HYBRID, IL_H_HYBRID,
00091 INT11_HYBRID, INT11_H_HYBRID, INT21_HYBRID, INT21_H_HYBRID, INT22_HYBRID, INT22_H_HYBRID,
00092 ML_HYBRID,
00093 /* RNA/DNA hybrid mismatch identifiers */
00094 MMH_HYBRID, MMH_H_HYBRID,
00095 MMI_HYBRID, MMI_H_HYBRID,
00096 MMI1N_HYBRID, MMI1N_H_HYBRID, MMI23_HYBRID, MMI23_H_HYBRID,
00097 MMM_HYBRID, MMM_H_HYBRID,
00098 MME_HYBRID, MME_H_HYBRID,
00099 /* RNA/DNA hybrid dangling end identifiers */
00100 D5_HYBRID, D5_H_HYBRID,
00101 D3_HYBRID, D3_H_HYBRID,
00102 /* RNA/DNA hybrid special hairpin identifiers */
00103 TRI_HYBRID, TL_HYBRID, HEX_HYBRID,
00104 /* RNA/DNA hybrid other identifiers */
00105 NIN_HYBRID, MISC_HYBRID,
00106
00107 /* This dummy must be the last entry in this enum! */
00108 DUMMY
00109 };
00110
00111 #define VRNA_PARAMETER_FILE_RNA      1
00112 #define VRNA_PARAMETER_FILE_DNA      2
00113 #define VRNA_PARAMETER_FILE_HYBRID   4
00114
00115
00121 void read_parameter_file(const char fname[]);
00122
00128 void write_parameter_file(const char fname[]);
00129
00130 void write_parameter_file_full(const char fname[], int options);
00131
00136 enum parset gettype(const char *ident);
00137
00142 const char *settype(enum parset s);
00143
00148 #endif

```

11.70 ribo.h

```
00001 #ifndef __VIENNA_RNA_PACKAGE_RIBOSUM_H__
```

```

00002 #define __VIENNA_RNA_PACKAGE_RIBOSUM_H__
00003
00004 float **get_ribosum(const char **Aseq,
00005                    int n_seq,
00006                    int length);
00007
00008 #endif

```

11.71 /homes/brauerei2/ronny/WORK/ViennaRNA/H/RNAstruct.h File Reference

Parsing and Coarse Graining of Structures.

Functions

- char * [b2HIT](#) (const char *structure)
Converts the full structure from bracket notation to the HIT notation including root.
- char * [b2C](#) (const char *structure)
Converts the full structure from bracket notation to the a coarse grained notation using the 'H' 'B' 'I' 'M' and 'R' identifiers.
- char * [b2Shapiro](#) (const char *structure)
Converts the full structure from bracket notation to the weighted coarse grained notation using the 'H' 'B' 'I' 'M' 'S' 'E' and 'R' identifiers.
- char * [add_root](#) (const char *structure)
Adds a root to an un-rooted tree in any except bracket notation.
- char * [expand_Shapiro](#) (const char *coarse)
Inserts missing 'S' identifiers in unweighted coarse grained structures as obtained from [b2C\(\)](#).
- char * [expand_Full](#) (const char *structure)
Convert the full structure from bracket notation to the expanded notation including root.
- char * [unexpand_Full](#) (const char *ffull)
Restores the bracket notation from an expanded full or HIT tree, that is any tree using only identifiers 'U' 'P' and 'R'.
- char * [unweight](#) (const char *wcoarse)
Strip weights from any weighted tree.
- void [unexpand_aligned_F](#) (char *align[2])
Converts two aligned structures in expanded notation.
- void [parse_structure](#) (const char *structure)
Collects a statistic of structure elements of the full structure in bracket notation.

Variables

- int **loop_size** [STRUC]
contains a list of all loop sizes. loop_size[0] contains the number of external bases.
- int **helix_size** [STRUC]
contains a list of all stack sizes.
- int **loop_degree** [STRUC]
contains the corresponding list of loop degrees.
- int **loops**
contains the number of loops (and therefore of stacks).
- int **unpaired**
contains the number of unpaired bases.
- int **pairs**
contains the number of base pairs in the last parsed structure.

11.71.1 Detailed Description

Parsing and Coarse Graining of Structures.

Example:

```
*  .((..(((...)))..((...))).  is the bracket or full tree
*  becomes expanded:  - expand_Full() -
*  ( (U) ( ( (U) (U) ( ( (U) (U) (U) P) P) P) (U) (U) ( ( (U) (U) P) P) P) (U) R)
*  HIT:  - b2HIT() -
*  ( (U1) ( (U2) ( (U3) P3) (U2) ( (U2) P2) P2) (U1) R)
*  Coarse:  - b2C() -
*  ( (H) ( (H) M) R)
*  becomes expanded:  - expand_Shapiro() -
*  ( ( ( ( (H) S) ( (H) S) M) S) R)
*  weighted Shapiro:  - b2Shapiro() -
*  ( ( ( ( (H3) S3) ( (H2) S2) M4) S2) E2) R)
*
```

11.71.2 Function Documentation

11.71.2.1 b2HIT()

```
char * b2HIT (
    const char * structure )
```

Converts the full structure from bracket notation to the HIT notation including root.

Parameters

<i>structure</i>	
------------------	--

Returns

11.71.2.2 b2C()

```
char * b2C (
    const char * structure )
```

Converts the full structure from bracket notation to the a coarse grained notation using the 'H' 'B' 'I' 'M' and 'R' identifiers.

Parameters

<i>structure</i>	
------------------	--

Returns

11.71.2.3 b2Shapiro()

```
char * b2Shapiro (
    const char * structure )
```

Converts the full structure from bracket notation to the *weighted* coarse grained notation using the 'H' 'B' 'I' 'M' 'S' 'E' and 'R' identifiers.

Parameters

<i>structure</i>	
------------------	--

Returns

11.71.2.4 add_root()

```
char * add_root (
    const char * structure )
```

Adds a root to an un-rooted tree in any except bracket notation.

Parameters

<i>structure</i>	
------------------	--

Returns

11.71.2.5 expand_Shapiro()

```
char * expand_Shapiro (
    const char * coarse )
```

Inserts missing 'S' identifiers in unweighted coarse grained structures as obtained from [b2C\(\)](#).

Parameters

<i>coarse</i>	
---------------	--

Returns

11.71.2.6 expand_Full()

```
char * expand_Full (
    const char * structure )
```

Convert the full structure from bracket notation to the expanded notation including root.

Parameters

<i>structure</i>	
------------------	--

Returns

11.71.2.7 unexpand_Full()

```
char * unexpand_Full (
    const char * ffull )
```

Restores the bracket notation from an expanded full or HIT tree, that is any tree using only identifiers 'U' 'P' and 'R'.

Parameters

<i>ffull</i>	
--------------	--

Returns

11.71.2.8 unweight()

```
char * unweight (
    const char * wcoarse )
```

Strip weights from any weighted tree.

Parameters

wcoarse	
---------	--

Returns

11.71.2.9 unexpand_aligned_F()

```
void unexpand_aligned_F (
    char * align[2] )
```

Converts two aligned structures in expanded notation.

Takes two aligned structures as produced by [tree_edit_distance\(\)](#) function back to bracket notation with '_' as the gap character. The result overwrites the input.

Parameters

align	
-------	--

11.71.2.10 parse_structure()

```
void parse_structure (
    const char * structure )
```

Collects a statistic of structure elements of the full structure in bracket notation.

The function writes to the following global variables: [loop_size](#), [loop_degree](#), [helix_size](#), [loops](#), [pairs](#), [unpaired](#)

Parameters

structure	
-----------	--

Returns

11.72 RNAstruct.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_RNASTRUCT_H__
00002 #define __VIENNA_RNA_PACKAGE_RNASTRUCT_H__
00003
00024 #define STRUC      2000
00025
00033 char *b2HIT(const char *structure);          /* Full  -> HIT      [incl. root] */
00034
00042 char *b2C(const char *structure);            /* Full  -> Coarse [incl. root] */
00043
00052 char *b2Shapiro(const char *structure);      /* Full -> weighted Shapiro [i.r.] */
00053
00060 char *add_root(const char *structure);        /* {Tree} -> ({Tree}R)          */
```

```

00061
00069 char *expand_Shapiro(const char *coarse);
00070
00071 /* add S for stacks to coarse struct */
00079 char *expand_Full(const char *structure); /* Full -> FFull */
00080
00088 char *unexpand_Full(const char *ffull); /* FFull -> Full */
00089
00096 char *unweight(const char *wcoarse); /* remove weights from coarse struct */
00097
00107 void unexpand_aligned_F(char *align[2]);
00108
00119 void parse_structure(const char *structure); /* make structure statistics */
00120
00125 extern int loop_size[STRUC]; /* loop sizes of a structure */
00126
00130 extern int helix_size[STRUC]; /* helix sizes of a structure */
00131
00135 extern int loop_degree[STRUC]; /* loop degrees of a structure */
00136
00140 extern int loops; /* n of loops and stacks */
00141
00145 extern int unpaired;
00146
00150 extern int pairs; /* n of unpaired digits and pairs */
00151
00152 #endif

```

11.73 snofold.h

```

00001 /* function from fold.c */
00002 #ifndef __VIENNA_RNA_PACKAGE_SNOFOLD_H__
00003 #define __VIENNA_RNA_PACKAGE_SNOFOLD_H__
00004
00005 #include "data_structures.h"
00006
00007 /* Normal fold */
00008
00012 int snofold( const char *sequence,
00013             char *structure,
00014             const int max_assym,
00015             const int threshold,
00016             const int min_s2,
00017             const int max_s2,
00018             const int half_stem,
00019             const int max_half_stem);
00024 void snofree_arrays(const int length); /* free arrays for mfe folding */
00025 void snoinitalize_fold(int length); /* allocate arrays for folding */
00026 void snoupdate_fold_params(void); /* recalculate parameters */
00027 int snoloop_energy(short *ptable,
00028                   short *s,
00029                   short *s1,
00030                   int i);
00031 void snoexport_fold_arrays( int **indx_p,
00032                             int **mLoop_p,
00033                             int **cLoop,
00034                             folden ***fold_p,
00035                             folden ***fold_p_XS);
00036 char * snobacktrack_fold_from_pair( const char *sequence,
00037                                     int i,
00038                                     int j);
00039 /* alifold */
00040 float alisnofold( const char **strings,
00041                  const int max_assym,
00042                  const int threshloop,
00043                  const int min_s2,
00044                  const int max_s2,
00045                  const int half_stem,
00046                  const int max_half_stem);
00047 void alisnofree_arrays(const int length);
00048 char * alisnobacktrack_fold_from_pair(const char **sequence,
00049                                       int i,
00050                                       int j,
00051                                       int *cov);
00052 extern double cv_fact /* =1 */;
00053 extern double nc_fact /* =1 */;
00054
00055 /* max number of mismatch >>>..(( ))>>> */
00056 #define MISMATCH 3
00057
00058 #endif

```

11.74 snoop.h

```

00001 #ifndef __VIENNA_RNA_PACKAGE_SNOOP_H__
00002 #define __VIENNA_RNA_PACKAGE_SNOOP_H__
00003
00004 #include "data_structures.h"
00009 snoopT snoopfold( const char *s1,
00010                  const char *s2,
00011                  const int penalty,
00012                  const int threshloop,
00013                  const int threshLE,
00014                  const int threshRE,
00015                  const int threshDE,
00016                  const int threshD,
00017                  const int half_stem,
00018                  const int max_half_stem,
00019                  const int min_s2,
00020                  const int max_s2,
00021                  const int min_s1,
00022                  const int max_s1,
00023                  const int min_d1,
00024                  const int min_d2,
00025                  const int fullStemEnergy);
00026
00032 snoopT *snoop_subopt( const char *s1,
00033                     const char *s2,
00034                     int delta,
00035                     int w,
00036                     const int penalty,
00037                     const int threshloop,
00038                     const int threshLE,
00039                     const int threshRE,
00040                     const int threshDE,
00041                     const int threshTE,
00042                     const int threshSE,
00043                     const int threshD,
00044                     const int distance,
00045                     const int half_stem,
00046                     const int max_half_stem,
00047                     const int min_s2,
00048                     const int max_s2,
00049                     const int min_s1,
00050                     const int max_s1,
00051                     const int min_d1,
00052                     const int min_d2,
00053                     const int fullStemEnergy);
00054
00061 void Lsnoop_subopt( const char *s1,
00062                   const char *s2,
00063                   int delta,
00064                   int w,
00065                   const int penalty,
00066                   const int threshloop,
00067                   const int threshLE,
00068                   const int threshRE,
00069                   const int threshDE,
00070                   const int threshTE,
00071                   const int threshSE,
00072                   const int threshD,
00073                   const int distance,
00074                   const int half_stem,
00075                   const int max_half_stem,
00076                   const int min_s2,
00077                   const int max_s2,
00078                   const int min_s1,
00079                   const int max_s1,
00080                   const int min_d1,
00081                   const int min_d2,
00082                   const int alignment_length,
00083                   const char* name,
00084                   const int fullStemEnergy);
00085
00092 void Lsnoop_subopt_list ( const char *s1,
00093                          const char *s2,
00094                          int delta,
00095                          int w,
00096                          const int penalty,
00097                          const int threshloop,
00098                          const int threshLE,
00099                          const int threshRE,
00100                          const int threshDE,
00101                          const int threshTE,
00102                          const int threshSE,
00103                          const int threshD,
00104                          const int distance,
00105                          const int half_stem,
00106                          const int max_half_stem,

```

```

00107             const int min_s2,
00108             const int max_s2,
00109             const int min_s1,
00110             const int max_s1,
00111             const int min_d1,
00112             const int min_d2,
00113             const int alignment_length,
00114             const char *name,
00115             const int fullStemEnergy);
00116
00122 void Lsnoop_subopt_list_XS (const char *s1,
00123                             const char *s2,
00124                             const int **access_s1,
00125                             int delta,
00126                             int w,
00127                             const int penalty,
00128                             const int threshloop,
00129                             const int threshLE,
00130                             const int threshRE,
00131                             const int threshDE,
00132                             const int threshTE,
00133                             const int threshSE,
00134                             const int threshD,
00135                             const int distance,
00136                             const int half_stem,
00137                             const int max_half_stem,
00138                             const int min_s2,
00139                             const int max_s2,
00140                             const int min_s1,
00141                             const int max_s1,
00142                             const int min_d1,
00143                             const int min_d2,
00144                             const int alignment_length,
00145                             const char *name,
00146                             const int fullStemEnergy);
00147
00148
00154 void snoop_subopt_XS (const char *s1,
00155                       const char *s2,
00156                       const int **access_s1,
00157                       int delta,
00158                       int w,
00159                       const int penalty,
00160                       const int threshloop,
00161                       const int threshLE,
00162                       const int threshRE,
00163                       const int threshDE,
00164                       const int threshTE,
00165                       const int threshSE,
00166                       const int threshD,
00167                       const int distance,
00168                       const int half_stem,
00169                       const int max_half_stem,
00170                       const int min_s2,
00171                       const int max_s2,
00172                       const int min_s1,
00173                       const int max_s1,
00174                       const int min_d1,
00175                       const int min_d2,
00176                       const int alignment_length,
00177                       const char *name,
00178                       const int fullStemEnergy);
00179
00184 snoopT *alisnoop_subopt (const char **s1,
00185                          const char **s2,
00186                          int delta,
00187                          int w,
00188                          const int penalty,
00189                          const int threshloop,
00190                          const int threshLE,
00191                          const int threshRE,
00192                          const int threshDE,
00193                          const int threshTE,
00194                          const int threshSE,
00195                          const int threshD,
00196                          const int distance,
00197                          const int half_stem,
00198                          const int max_half_stem,
00199                          const int min_s2,
00200                          const int max_s2,
00201                          const int min_s1,
00202                          const int max_s1,
00203                          const int min_d1,
00204                          const int min_d2);
00205
00212 snoopT *aliLsnoop_subopt_list ( const char **s1,
00213                                const char **s2,

```

```

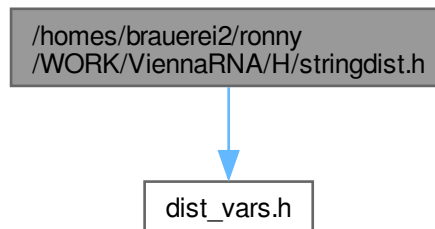
00214             int delta,
00215             int w,
00216             const int penalty,
00217             const int threshloop,
00218             const int threshLE,
00219             const int threshRE,
00220             const int threshDE,
00221             const int threshTE,
00222             const int threshSE,
00223             const int threshD,
00224             const int distance,
00225             const int half_stem,
00226             const int max_half_stem,
00227             const int min_s2,
00228             const int max_s2,
00229             const int min_s1,
00230             const int max_s1,
00231             const int min_d1,
00232             const int min_d2,
00233             const int alignment_length);
00239 snoopT alisnoopfold(const char **s1,
00240                     const char **s2,
00241                     const int penalty,
00242                     const int threshloop,
00243                     const int threshLE,
00244                     const int threshRE,
00245                     const int threshDE,
00246                     const int threshD,
00247                     const int half_stem,
00248                     const int max_half_stem,
00249                     const int min_s2,
00250                     const int max_s2,
00251                     const int min_s1,
00252                     const int max_s1,
00253                     const int min_d1,
00254                     const int min_d2);
00259 snoopT snoopfold_XS(const char *s1,
00260                     const char *s2,
00261                     const int **access_s1,
00262                     const int pos,
00263                     const int max_pos_j,
00264                     const int penalty,
00265                     const int threshloop,
00266                     const int threshLE,
00267                     const int threshRE,
00268                     const int threshDE,
00269                     const int threshD,
00270                     const int half_stem,
00271                     const int max_half_stem,
00272                     const int min_s2,
00273                     const int max_s2,
00274                     const int min_s1,
00275                     const int max_s1,
00276                     const int min_d1,
00277                     const int min_d2,
00278                     const int fullStemEnergy);
00279
00280
00281
00282
00283 extern int snoop_subopt_sorted;
00284 #endif

```

11.75 /homes/brauerei2/ronny/WORK/ViennaRNA/H/stringdist.h File Reference

Functions for String Alignment.

Include dependency graph for stringdist.h:



Functions

- `swString * Make_swString` (`char *string`)
Convert a structure into a format suitable for `string_edit_distance()`.
- `float string_edit_distance` (`swString *T1`, `swString *T2`)
Calculate the string edit distance of `T1` and `T2`.

11.75.1 Detailed Description

Functions for String Alignment.

11.75.2 Function Documentation

11.75.2.1 Make_swString()

```
swString * Make_swString (
    char * string )
```

Convert a structure into a format suitable for `string_edit_distance()`.

Parameters

<code>string</code>	
---------------------	--

Returns

11.75.2.2 string_edit_distance()

```
float string_edit_distance (
    swString * T1,
    swString * T2 )
```

Calculate the string edit distance of `T1` and `T2`.

Parameters

<code>T1</code>	
<code>T2</code>	

Returns

11.76 stringdist.h

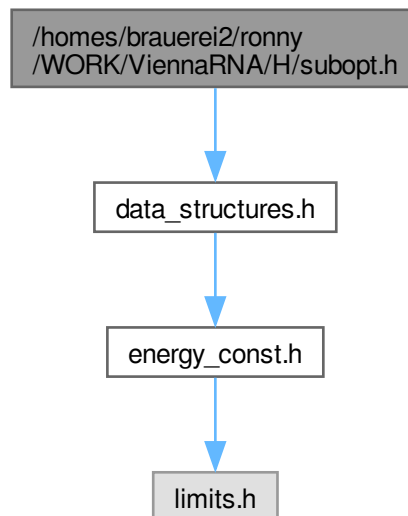
[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_STRING_DIST_H__
00002 #define __VIENNA_RNA_PACKAGE_STRING_DIST_H__
00003
00009 #include "dist_vars.h"
00010
00011
00018 swString *Make_swString(char *string);
00019
00027 float      string_edit_distance( swString *T1,
00028                                swString *T2);
00029
00030 #endif
```

11.77 /homes/brauerei2/ronny/WORK/ViennaRNA/H/subopt.h File Reference

RNAsubopt and density of states declarations.

Include dependency graph for subopt.h:



Functions

- **SOLUTION** * **subopt** (char *seq, char *structure, int delta, FILE *fp)
Returns list of subopt structures or writes to fp.
- **SOLUTION** * **subopt_par** (char *seq, char *structure, **paramT** *parameters, int delta, int is_constrained, int is_circular, FILE *fp)
Returns list of subopt structures or writes to fp.
- **SOLUTION** * **subopt_circ** (char *seq, char *sequence, int delta, FILE *fp)
Returns list of circular subopt structures or writes to fp.

Variables

- int `subopt_sorted`
Sort output by energy.
- double `print_energy`
printing threshold for use with logML
- int `density_of_states` [MAXDOS+1]
The Density of States.

11.77.1 Detailed Description

RNAsubopt and density of states declarations.

11.78 subopt.h

[Go to the documentation of this file.](#)

```
00001 /* subopt.h */
00002 #ifndef __VIENNA_RNA_PACKAGE_SUBOPT_H__
00003 #define __VIENNA_RNA_PACKAGE_SUBOPT_H__
00004
00005 #include "data_structures.h"
00006
00007 #define MAXDOS 1000
00008
00043 SOLUTION *subopt (char *seq,
00044                  char *structure,
00045                  int delta,
00046                  FILE *fp);
00047
00053 SOLUTION *subopt_par ( char *seq,
00054                      char *structure,
00055                      paramT *parameters,
00056                      int delta,
00057                      int is_constrained,
00058                      int is_circular,
00059                      FILE *fp);
00060
00075 SOLUTION *subopt_circ ( char *seq,
00076                      char *sequence,
00077                      int delta,
00078                      FILE *fp);
00079
00086 extern int      subopt_sorted;
00087
00088
00095 extern double   print_energy;
00096
00113 extern int      density_of_states[MAXDOS+1];
00114 /* End of group dos */
00116
00117 #endif
```

11.79 svm_utils.h

```
00001 #ifndef __VIENNA_RNA_PACKAGE_SUBOPT_H__
00002 #define __VIENNA_RNA_PACKAGE_SUBOPT_H__
00003
00004 typedef struct svm_model{
00005     struct svm_parameter param;
00006     int nr_class;
00007     int l;
00008     struct svm_node **SV;
00009     double **sv_coef;
00010     double *rho;
00011     double *probA;
00012     double *probB;
00013     int *label;
00014     int *nSV;
00015     int free_sv;
00016 } svm_model;
00017
00018 extern char *avg_model_string;
00019 extern char *sd_model_string;
00020
00021 float      get_z(char *sequence,
```

```

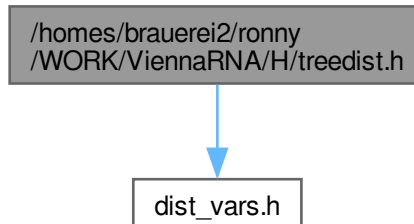
00022         double energy);
00023 double   avg_regression (int N,
00024                        int A,
00025                        int C,
00026                        int G,
00027                        int T,
00028                        struct svm_model *avg_model,
00029                        int *info );
00030 double   sd_regression  (int N,
00031                        int A,
00032                        int C,
00033                        int G,
00034                        int T,
00035                        struct svm_model *sd_model);
00036 double   minimal_sd    (int N,
00037                        int A,
00038                        int C,
00039                        int G,
00040                        int T);
00041 svm_model *svm_load_model_string(char *modelString);
00042 int       *get_seq_composition( short *S,
00043                                unsigned int start,
00044                                unsigned int stop,
00045                                unsigned int length);
00046
00047 #endif

```

11.80 /homes/brauerei2/ronny/WORK/ViennaRNA/H/treedist.h File Reference

Functions for [Tree](#) Edit Distances.

Include dependency graph for treedist.h:



Functions

- [Tree](#) * [make_tree](#) (char *struc)
Constructs a [Tree](#) (essentially the postorder list) of the structure 'struc', for use in [tree_edit_distance](#)().
- float [tree_edit_distance](#) ([Tree](#) *T1, [Tree](#) *T2)
Calculates the edit distance of the two trees.
- void [print_tree](#) ([Tree](#) *t)
Print a tree (mainly for debugging)
- void [free_tree](#) ([Tree](#) *t)
Free the memory allocated for [Tree](#) t.

11.80.1 Detailed Description

Functions for [Tree](#) Edit Distances.

11.80.2 Function Documentation

11.80.2.1 `make_tree()`

```
Tree * make_tree (
    char * struc )
```

Constructs a [Tree](#) (essentially the postorder list) of the structure 'struc', for use in [tree_edit_distance\(\)](#).

Parameters

<i>struc</i>	may be any rooted structure representation.
--------------	---

Returns

11.80.2.2 `tree_edit_distance()`

```
float tree_edit_distance (
    Tree * T1,
    Tree * T2 )
```

Calculates the edit distance of the two trees.

Parameters

<i>T1</i>	
<i>T2</i>	

Returns

11.80.2.3 `free_tree()`

```
void free_tree (
    Tree * t )
```

Free the memory allocated for [Tree](#) t.

Parameters

<i>t</i>	
----------	--

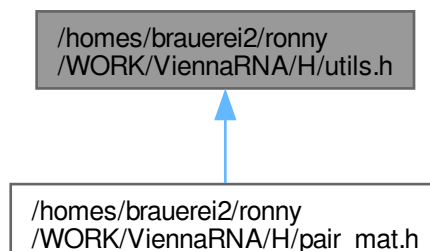
11.81 `treedist.h`

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_TREE_DIST_H__
00002 #define __VIENNA_RNA_PACKAGE_TREE_DIST_H__
00003
00009 #include "dist_vars.h"
00010
00018 Tree *make_tree(char *struc);
00019
00027 float tree_edit_distance( Tree *T1,
00028                          Tree *T2);
00029
00033 void print_tree(Tree *t);
00034
00040 void free_tree(Tree *t);
00041
00042 #endif
```

11.82 /homes/brauerei2/ronny/WORK/ViennaRNA/H/utills.h File Reference

Various utility- and helper-functions used throughout the Vienna RNA package.
This graph shows which files directly or indirectly include this file:



Macros

- #define `VRNA_INPUT_ERROR` 1U
- #define `VRNA_INPUT_QUIT` 2U
- #define `VRNA_INPUT_MISC` 4U
- #define `VRNA_INPUT_FASTA_HEADER` 8U
- #define `VRNA_INPUT_SEQUENCE` 16U
- #define `VRNA_INPUT_CONSTRAINT` 32U
- #define `VRNA_INPUT_NO_TRUNCATION` 256U
- #define `VRNA_INPUT_NO_REST` 512U
- #define `VRNA_INPUT_NO_SPAN` 1024U
- #define `VRNA_INPUT_NOSKIP_BLANK_LINES` 2048U
- #define `VRNA_INPUT_BLANK_LINE` 4096U
- #define `VRNA_INPUT_NOSKIP_COMMENTS` 128U
- #define `VRNA_INPUT_COMMENT` 8192U
- #define `VRNA_CONSTRAINT_PIPE` 1U
- #define `VRNA_CONSTRAINT_DOT` 2U
- #define `VRNA_CONSTRAINT_X` 4U
- #define `VRNA_CONSTRAINT_ANG_BRACK` 8U
- #define `VRNA_CONSTRAINT_RND_BRACK` 16U
- #define `VRNA_CONSTRAINT_MULTILINE` 32U
- #define `VRNA_CONSTRAINT_NO_HEADER` 64U
- #define `VRNA_CONSTRAINT_ALL` 128U
- #define `VRNA_CONSTRAINT_G` 256U
- #define `VRNA_OPTION_MULTILINE` 32U
- #define `MIN2(A, B)` ((A) < (B) ? (A) : (B))
- #define `MAX2(A, B)` ((A) > (B) ? (A) : (B))
- #define `MIN3(A, B, C)` (MIN2((MIN2((A),(B))) ,(C)))
- #define `MAX3(A, B, C)` (MAX2((MAX2((A),(B))) ,(C)))
- #define `XSTR(s) STR(s)`
- #define `STR(s) #s`
- #define `FILENAME_MAX_LENGTH` 80
Maximum length of filenames that are generated by our programs.
- #define `FILENAME_ID_LENGTH` 42
Maximum length of id taken from fasta header for filename generation.

Functions

- void * [space](#) (unsigned size)
Allocate space safely.
- void * [xrealloc](#) (void *p, unsigned size)
Reallocate space safely.
- void [nrerror](#) (const char message[])
Die with an error message.
- void [warn_user](#) (const char message[])
Print a warning message.
- void [init_rand](#) (void)
Make random number seeds.
- double [urn](#) (void)
get a random number from [0..1]
- int [int_urn](#) (int from, int to)
Generates a pseudo random integer in a specified range.
- char * [time_stamp](#) (void)
Get a timestamp.
- char * [random_string](#) (int l, const char symbols[])
Create a random string using characters from a specified symbol set.
- int [hamming](#) (const char *s1, const char *s2)
Calculate hamming distance between two sequences.
- int [hamming_bound](#) (const char *s1, const char *s2, int n)
Calculate hamming distance between two sequences up to a specified length.
- char * [get_line](#) (FILE *fp)
Read a line of arbitrary length from a stream.
- unsigned int [get_input_line](#) (char **string, unsigned int options)
- unsigned int [read_record](#) (char **header, char **sequence, char ***rest, unsigned int options)
- char * [pack_structure](#) (const char *struc)
Pack secondary secondary structure, 5:1 compression using base 3 encoding.
- char * [unpack_structure](#) (const char *packed)
Unpack secondary structure previously packed with [pack_structure\(\)](#)
- short * [make_pair_table](#) (const char *structure)
Create a pair table of a secondary structure.
- short * [copy_pair_table](#) (const short *pt)
Get an exact copy of a pair table.
- short * [alimake_pair_table](#) (const char *structure)
- short * [make_pair_table_snoop](#) (const char *structure)
- int * [make_loop_index_pt](#) (short *pt)
Compute the "base pair" distance between two secondary structures s1 and s2.
- void [print_tty_input_seq](#) (void)
Print a line to stdout that asks for an input sequence.
- void [print_tty_input_seq_str](#) (const char *s)
Print a line with a user defined string and a ruler to stdout.
- void [print_tty_constraint_full](#) (void)
Print structure constraint characters to stdout (full constraint support)
- void [print_tty_constraint](#) (unsigned int option)
Print structure constraint characters to stdout. (constraint support is specified by option parameter)
- void [str_DNA2RNA](#) (char *sequence)
Convert a DNA input sequence to RNA alphabet.
- void [str_uppercase](#) (char *sequence)

Convert an input sequence to uppercase.

- int * [get_iindx](#) (unsigned int length)

Get an index mapper array (iindx) for accessing the energy matrices, e.g. in partition function related functions.

- int * [get_indx](#) (unsigned int length)

Get an index mapper array (indx) for accessing the energy matrices, e.g. in MFE related functions.

- void [constrain_ptypes](#) (const char *constraint, unsigned int length, char *ptype, int *BP, int min_loop_size, unsigned int idx_type)

Insert constraining pair types according to constraint structure string.

Variables

- unsigned short [xsubi](#) [3]

Current 48 bit random number.

11.82.1 Detailed Description

Various utility- and helper-functions used throughout the Vienna RNA package.

11.82.2 Macro Definition Documentation

11.82.2.1 VRNA_INPUT_ERROR

```
#define VRNA_INPUT_ERROR 1U
```

Output flag of [get_input_line\(\)](#): "An ERROR has occurred, maybe EOF"

11.82.2.2 VRNA_INPUT_QUIT

```
#define VRNA_INPUT_QUIT 2U
```

Output flag of [get_input_line\(\)](#): "the user requested quitting the program"

11.82.2.3 VRNA_INPUT_MISC

```
#define VRNA_INPUT_MISC 4U
```

Output flag of [get_input_line\(\)](#): "something was read"

11.82.2.4 VRNA_INPUT_FASTA_HEADER

```
#define VRNA_INPUT_FASTA_HEADER 8U
```

Input/Output flag of `:n` if used as input option this tells [get_input_line\(\)](#) that the data to be read should comply with the FASTA format

the function will return this flag if a fasta header was read

11.82.2.5 VRNA_INPUT_SEQUENCE

```
#define VRNA_INPUT_SEQUENCE 16U
```

Input flag for [get_input_line\(\)](#):

Tell [get_input_line\(\)](#) that we assume to read a nucleotide sequence

11.82.2.6 VRNA_INPUT_CONSTRAINT

```
#define VRNA_INPUT_CONSTRAINT 32U
```

Input flag for [get_input_line\(\)](#):

Tell [get_input_line\(\)](#) that we assume to read a structure constraint

11.82.2.7 VRNA_INPUT_NO_TRUNCATION

```
#define VRNA_INPUT_NO_TRUNCATION 256U
```

Input switch for [get_input_line\(\)](#): "do not truncate the line by eliminating white spaces at end of line"

11.82.2.8 VRNA_INPUT_NO_REST

```
#define VRNA_INPUT_NO_REST 512U
Input switch for read_record(): "do fill rest array"
```

11.82.2.9 VRNA_INPUT_NO_SPAN

```
#define VRNA_INPUT_NO_SPAN 1024U
Input switch for read_record(): "never allow data to span more than one line"
```

11.82.2.10 VRNA_INPUT_NOSKIP_BLANK_LINES

```
#define VRNA_INPUT_NOSKIP_BLANK_LINES 2048U
Input switch for read_record(): "do not skip empty lines"
```

11.82.2.11 VRNA_INPUT_BLANK_LINE

```
#define VRNA_INPUT_BLANK_LINE 4096U
Output flag for read_record(): "read an empty line"
```

11.82.2.12 VRNA_INPUT_NOSKIP_COMMENTS

```
#define VRNA_INPUT_NOSKIP_COMMENTS 128U
Input switch for get_input_line(): "do not skip comment lines"
```

11.82.2.13 VRNA_INPUT_COMMENT

```
#define VRNA_INPUT_COMMENT 8192U
Output flag for read_record(): "read a comment"
```

11.82.2.14 VRNA_CONSTRAINT_PIPE

```
#define VRNA_CONSTRAINT_PIPE 1U
pipe sign '|' switch for structure constraints (paired with another base)
```

11.82.2.15 VRNA_CONSTRAINT_DOT

```
#define VRNA_CONSTRAINT_DOT 2U
dot '.' switch for structure constraints (no constraint at all)
```

11.82.2.16 VRNA_CONSTRAINT_X

```
#define VRNA_CONSTRAINT_X 4U
'x' switch for structure constraint (base must not pair)
```

11.82.2.17 VRNA_CONSTRAINT_ANG_BRACK

```
#define VRNA_CONSTRAINT_ANG_BRACK 8U
angle brackets '<', '>' switch for structure constraint (paired downstream/upstream)
```

11.82.2.18 VRNA_CONSTRAINT_RND_BRACK

```
#define VRNA_CONSTRAINT_RND_BRACK 16U
round brackets '(', ')' switch for structure constraint (base i pairs base j)
```

11.82.2.19 VRNA_CONSTRAINT_MULTILINE

```
#define VRNA_CONSTRAINT_MULTILINE 32U
constraint may span over several lines
```


11.82.2.20 VRNA_CONSTRAINT_NO_HEADER

```
#define VRNA_CONSTRAINT_NO_HEADER 64U
```

do not print the header information line

11.82.2.21 VRNA_CONSTRAINT_ALL

```
#define VRNA_CONSTRAINT_ALL 128U
```

placeholder for all constraining characters

11.82.2.22 VRNA_CONSTRAINT_G

```
#define VRNA_CONSTRAINT_G 256U
```

'+' switch for structure constraint (base is involved in a gquad)

11.82.2.23 VRNA_OPTION_MULTILINE

```
#define VRNA_OPTION_MULTILINE 32U
```

Tell a function that an input is assumed to span several lines if used as input-option A function might also be returning this state telling that it has read data from multiple lines.

See also

`extract_record_rest_structure()`, `read_record()`, `getConstraint()`

11.82.2.24 MIN2

```
#define MIN2(  
    A,  
    B ) ((A) < (B) ? (A) : (B))
```

Get the minimum of two comparable values

11.82.2.25 MAX2

```
#define MAX2(  
    A,  
    B ) ((A) > (B) ? (A) : (B))
```

Get the maximum of two comparable values

11.82.2.26 MIN3

```
#define MIN3(  
    A,  
    B,  
    C ) (MIN2( (MIN2( (A), (B) ) ) , (C) ) )
```

Get the minimum of three comparable values

11.82.2.27 MAX3

```
#define MAX3(  
    A,  
    B,  
    C ) (MAX2( (MAX2( (A), (B) ) ) , (C) ) )
```

Get the maximum of three comparable values

11.82.2.28 XSTR

```
#define XSTR(  
    s ) STR(s)
```

Stringify a macro after expansion

11.82.2.29 STR

```
#define STR(  
    s ) #s
```

Stringify a macro argument

11.82.2.30 FILENAME_MAX_LENGTH

```
#define FILENAME_MAX_LENGTH 80
```

Maximum length of filenames that are generated by our programs.

This definition should be used throughout the complete ViennaRNA package wherever a static array holding filenames of output files is declared.

11.82.2.31 FILENAME_ID_LENGTH

```
#define FILENAME_ID_LENGTH 42
```

Maximum length of id taken from fasta header for filename generation.

this has to be smaller than FILENAME_MAX_LENGTH since in most cases, some suffix will be appended to the ID

11.82.3 Function Documentation

11.82.3.1 space()

```
void * space (  
    unsigned size )
```

Allocate space safely.

Parameters

<i>size</i>	The size of the memory to be allocated in bytes
-------------	---

Returns

A pointer to the allocated memory

11.82.3.2 xrealloc()

```
void * xrealloc (  
    void * p,  
    unsigned size )
```

Reallocate space safely.

Parameters

<i>p</i>	A pointer to the memory region to be reallocated
<i>size</i>	The size of the memory to be allocated in bytes

Returns

A pointer to the newly allocated memory

11.82.3.3 nerror()

```
void nerror (  
    const char message[ ] )
```

Die with an error message.

See also

[warn_user\(\)](#)

Parameters

<i>message</i>	The error message to be printed before exiting with 'FAILURE'
----------------	---

11.82.3.4 warn_user()

```
void warn_user (
    const char message[] )
```

Print a warning message.

Print a warning message to *stderr*

Parameters

<i>message</i>	The warning message
----------------	---------------------

11.82.3.5 urn()

```
double urn (
    void )
```

get a random number from [0..1]

Note

Usually implemented by calling *erand48()*.

Returns

A random number in range [0..1]

11.82.3.6 int_urn()

```
int int_urn (
    int from,
    int to )
```

Generates a pseudo random integer in a specified range.

Parameters

<i>from</i>	The first number in range
<i>to</i>	The last number in range

Returns

A pseudo random number in range [from, to]

11.82.3.7 time_stamp()

```
char * time_stamp (
    void )
```

Get a timestamp.

Returns a string containing the current date in the format

Fri Mar 19 21:10:57 1993

Returns

A string containing the timestamp

11.82.3.8 random_string()

```
char * random_string (
    int l,
    const char symbols[] )
```

Create a random string using characters from a specified symbol set.

Parameters

<i>l</i>	The length of the sequence
<i>symbols</i>	The symbol set

Returns

A random string of length 'l' containing characters from the symbolset

11.82.3.9 hamming()

```
int hamming (
    const char * s1,
    const char * s2 )
```

Calculate hamming distance between two sequences.

Calculate the number of positions in which

Parameters

<i>s1</i>	The first sequence
<i>s2</i>	The second sequence

Returns

The hamming distance between s1 and s2

11.82.3.10 hamming_bound()

```
int hamming_bound (
    const char * s1,
    const char * s2,
    int n )
```

Calculate hamming distance between two sequences up to a specified length.

This function is similar to [hamming\(\)](#) but instead of comparing both sequences up to their actual length only the first 'n' characters are taken into account

Parameters

<i>s1</i>	The first sequence
<i>s2</i>	The second sequence

Returns

The hamming distance between s1 and s2

11.82.3.11 get_line()

```
char * get_line (
    FILE * fp )
```

Read a line of arbitrary length from a stream.

Returns a pointer to the resulting string. The necessary memory is allocated and should be released using *free()* when the string is no longer needed.

Parameters

<i>fp</i>	A file pointer to the stream where the function should read from
-----------	--

Returns

A pointer to the resulting string

11.82.3.12 get_input_line()

```
unsigned int get_input_line (
    char ** string,
    unsigned int options )
```

Retrieve a line from 'stdin' safely while skipping comment characters and other features This function returns the type of input it has read if recognized. An option argument allows to switch between different reading modes.

Currently available options are:

#VRNA_INPUT_NOPRINT_COMMENTS, [VRNA_INPUT_NOSKIP_COMMENTS](#), #VRNA_INPUT_NOELIM_WS_SUFFIX

pass a collection of options as one value like this:

```
get_input_line(string, option_1 | option_2 | option_n)
```

If the function recognizes the type of input, it will report it in the return value. It also reports if a user defined 'quit' command (-sign on 'stdin') was given. Possible return values are:

[VRNA_INPUT_FASTA_HEADER](#), [VRNA_INPUT_ERROR](#), [VRNA_INPUT_MISC](#), [VRNA_INPUT_QUIT](#)

Parameters

<i>string</i>	A pointer to the character array that contains the line read
<i>options</i>	A collection of options for switching the functions behavior

Returns

A flag with information about what has been read

11.82.3.13 read_record()

```
unsigned int read_record (
    char ** header,
    char ** sequence,
    char *** rest,
    unsigned int options )
```

\brief Get a data record from stdin

This function may be used to obtain complete datasets from stdin. A dataset is always

defined to contain at least a sequence. If data on stdin starts with a fasta header, i.e. a line like

```
\verbatimim >some header info \endverbatimim
```

then `read_record()` will assume that the sequence that follows the header may span over several lines. To disable this behavior and to assign a single line to the argument 'sequence' one can pass `VRNA_INPUT_NO_SPAN` in the 'options' argument. If no fasta header is read in the beginning of a data block, a sequence must not span over multiple lines!\n

Unless the options `#VRNA_INPUT_NOSKIP_COMMENTS` or `#VRNA_INPUT_NOSKIP_BLANK_LINES` are passed, a sequence may be interrupted by lines starting with a comment character or empty lines.\n

A sequence is regarded as completely read if it was either assumed to not span over multiple lines, a secondary structure or structure constraint follows the sequence on the next line or a new header marks the beginning of a new sequence...\n

All lines following the sequence (this includes comments) and not initiating a new dataset are available through the line-array 'rest'. Here one can usually find the structure constraint or other information belonging to the current dataset. Filling of 'rest' may be prevented by passing `#VRNA_INPUT_NO_REST` to the options argument.\n

\note This function will exit any program with an error message if no sequence could be read!

The main purpose of this function is to be able to easily parse blocks of data from stdin in the header of a loop where all calculations for the appropriate data is done inside the loop. The loop may be then left on certain return values, e.g.:

```
\verbatimim
```

```
char *id, *seq, **rest; int i; while(!(read_record(&id, &seq, &rest, 0) & (VRNA_INPUT_ERROR | VRNA_INPUT_↵
QUIT))) { if(id) printf("%s\n", id); printf("%s\n", seq); if(rest) for(i=0; rest[i]; i++) printf("%s\n", rest[i]); }
```

In the example above, the while loop will be terminated when `read_record()` returns either an error or a user initiated quit request.\n

As long as data is read from stdin, the id is printed if it is available for the current block of data. The sequence will be printed in any case and if some more lines belong to the current block of data each line will be printed as well.

\note Do not forget to free the memory occupied by header, sequence and rest!

```
\param header      A pointer which will be set such that it points to the header of the record
\param sequence    A pointer which will be set such that it points to the sequence of the record
\param rest        A pointer which will be set such that it points to an array of lines which also belong to th
\param options      Some options which may be passed to alter the behavior of the function, use 0 for no options
\return            A flag with information about what the function actually did read
```

11.82.3.14 pack_structure()

```
char * pack_structure (
    const char * struc )
```

Pack secondary structure, 5:1 compression using base 3 encoding.

Returns a binary string encoding of the secondary structure using a 5:1 compression scheme. The string is NULL terminated and can therefore be used with standard string functions such as `strcmp()`. Useful for programs that need to keep many structures in memory.

Parameters

<i>struc</i>	The secondary structure in dot-bracket notation
--------------	---

Returns

The binary encoded structure

11.82.3.15 unpack_structure()

```
char * unpack_structure (
    const char * packed )
```

Unpack secondary structure previously packed with [pack_structure\(\)](#)

Translate a compressed binary string produced by [pack_structure\(\)](#) back into the familiar dot-bracket notation.

Parameters

<i>packed</i>	The binary encoded packed secondary structure
---------------	---

Returns

The unpacked secondary structure in dot-bracket notation

11.82.3.16 make_pair_table()

```
short * make_pair_table (
    const char * structure )
```

Create a pair table of a secondary structure.

Returns a newly allocated table, such that table[i]=j if (i,j) pair or 0 if i is unpaired, table[0] contains the length of the structure.

Parameters

<i>structure</i>	The secondary structure in dot-bracket notation
------------------	---

Returns

A pointer to the created pair_table

11.82.3.17 copy_pair_table()

```
short * copy_pair_table (
    const short * pt )
```

Get an exact copy of a pair table.

Parameters

<i>pt</i>	The pair table to be copied
-----------	-----------------------------

Returns

A pointer to the copy of 'pt'

11.82.3.18 alimake_pair_table()

```
short * alimake_pair_table (
    const char * structure )
```

Pair table for snoop align

11.82.3.19 make_pair_table_snoop()

```
short * make_pair_table_snoop (
    const char * structure )
```

returns a newly allocated table, such that: table[i]=j if (i,j) pair or 0 if i is unpaired, table[0] contains the length of the structure. The special pseudoknotted H/ACA-mRNA structure is taken into account.

11.82.3.20 make_loop_index_pt()

```
int * make_loop_index_pt (
    short * pt )
```

Compute the "base pair" distance between two secondary structures s1 and s2.

The sequences should have the same length. dist = number of base pairs in one structure but not in the other same as edit distance with open-pair close-pair as move-set

Parameters

<i>str1</i>	First structure in dot-bracket notation
<i>str2</i>	Second structure in dot-bracket notation

Returns

The base pair distance between *str1* and *str2*

11.82.3.21 print_tty_input_seq()

```
void print_tty_input_seq (
    void )
```

Print a line to *stdout* that asks for an input sequence.

There will also be a ruler (scale line) printed that helps orientation of the sequence positions

11.82.3.22 print_tty_input_seq_str()

```
void print_tty_input_seq_str (
    const char * s )
```

Print a line with a user defined string and a ruler to *stdout*.

(usually this is used to ask for user input) There will also be a ruler (scale line) printed that helps orientation of the sequence positions

Parameters

<i>s</i>	A user defined string that will be printed to <i>stdout</i>
----------	---

11.82.3.23 print_tty_constraint_full()

```
void print_tty_constraint_full (
    void )
```

Print structure constraint characters to *stdout* (full constraint support)

11.82.3.24 print_tty_constraint()

```
void print_tty_constraint (
    unsigned int option )
```

Print structure constraint characters to *stdout*. (constraint support is specified by option parameter)

Currently available options are:

- [VRNA_CONSTRAINT_PIPE](#) (paired with another base)
- [VRNA_CONSTRAINT_DOT](#) (no constraint at all)
- [VRNA_CONSTRAINT_X](#) (base must not pair)
- [VRNA_CONSTRAINT_ANG_BRACK](#) (paired downstream/upstream)
- [VRNA_CONSTRAINT_RND_BRACK](#) (base i pairs base j)

pass a collection of options as one value like this:

```
print_tty_constraint(option_1 | option_2 | option_n)
```


Parameters

<i>option</i>	Option switch that tells which constraint help will be printed
---------------	--

11.82.3.25 str_DNA2RNA()

```
void str_DNA2RNA (
    char * sequence )
```

Convert a DNA input sequence to RNA alphabet.

This function substitutes *T* and *t* with *U* and *u*, respectively

Parameters

<i>sequence</i>	The sequence to be converted
-----------------	------------------------------

11.82.3.26 str_uppercase()

```
void str_uppercase (
    char * sequence )
```

Convert an input sequence to uppercase.

Parameters

<i>sequence</i>	The sequence to be converted
-----------------	------------------------------

11.82.3.27 get_iindx()

```
int * get_iindx (
    unsigned int length )
```

Get an index mapper array (iindx) for accessing the energy matrices, e.g. in partition function related functions. Access of a position "(i,j)" is then accomplished by using

```
(i,j) ~ iindx[i]-j
```

This function is necessary as most of the two-dimensional energy matrices are actually one-dimensional arrays throughout the ViennaRNAPackage

Consult the implemented code to find out about the mapping formula ;)

See also

[get_indx\(\)](#)

Parameters

<i>length</i>	The length of the RNA sequence
---------------	--------------------------------

Returns

The mapper array

11.82.3.28 get_indx()

```
int * get_indx (
    unsigned int length )
```

Get an index mapper array (indx) for accessing the energy matrices, e.g. in MFE related functions.

Access of a position "(i,j)" is then accomplished by using

```
(i,j) ~ indx[j]+i
```

This function is necessary as most of the two-dimensional energy matrices are actually one-dimensional arrays throughout the ViennaRNAPackage

Consult the implemented code to find out about the mapping formula ;)

See also

[get_iindx\(\)](#)

Parameters

<i>length</i>	The length of the RNA sequence
---------------	--------------------------------

Returns

The mapper array

11.82.3.29 constrain_ptypes()

```
void constrain_ptypes (
    const char * constraint,
    unsigned int length,
    char * ptype,
    int * BP,
    int min_loop_size,
    unsigned int idx_type )
```

Insert constraining pair types according to constraint structure string.

See also

[get_indx\(\)](#), [get_iindx\(\)](#)

Parameters

<i>constraint</i>	The structure constraint string
<i>length</i>	The actual length of the sequence (constraint may be shorter)
<i>ptype</i>	A pointer to the basepair type array
<i>min_loop_size</i>	The minimal loop size (usually TURN)
<i>idx_type</i>	Define the access type for base pair type array (0 = indx, 1 = iindx)

11.82.4 Variable Documentation

11.82.4.1 xsubi

```
unsigned short xsubi[3] [extern]
```

Current 48 bit random number.

This variable is used by [urn\(\)](#). These should be set to some random number seeds before the first call to [urn\(\)](#).

See also

[urn\(\)](#)

11.83 utils.h

[Go to the documentation of this file.](#)

```
00001 #ifndef __VIENNA_RNA_PACKAGE_UTILS_H__
00002 #define __VIENNA_RNA_PACKAGE_UTILS_H__
00003
00012 #define VRNA_INPUT_ERROR 1U
00016 #define VRNA_INPUT_QUIT 2U
00020 #define VRNA_INPUT_MISC 4U
00021
00028 #define VRNA_INPUT_FASTA_HEADER 8U
00029
00034 #define VRNA_INPUT_SEQUENCE 16U
00035
00040 #define VRNA_INPUT_CONSTRAINT 32U
00041
00046 #define VRNA_INPUT_NO_TRUNCATION 256U
00047
00051 #define VRNA_INPUT_NO_REST 512U
00052
00056 #define VRNA_INPUT_NO_SPAN 1024U
00057
00061 #define VRNA_INPUT_NOSKIP_BLANK_LINES 2048U
00062
00066 #define VRNA_INPUT_BLANK_LINE 4096U
00067
00071 #define VRNA_INPUT_NOSKIP_COMMENTS 128U
00072
00076 #define VRNA_INPUT_COMMENT 8192U
00077
00078
00079
00080
00084 #define VRNA_CONSTRAINT_PIPE 1U
00088 #define VRNA_CONSTRAINT_DOT 2U
00092 #define VRNA_CONSTRAINT_X 4U
00096 #define VRNA_CONSTRAINT_ANG_BRACK 8U
00100 #define VRNA_CONSTRAINT_RND_BRACK 16U
00104 #define VRNA_CONSTRAINT_MULTILINE 32U
00108 #define VRNA_CONSTRAINT_NO_HEADER 64U
00112 #define VRNA_CONSTRAINT_ALL 128U
00116 #define VRNA_CONSTRAINT_G 256U
00117
00118
00119
00128 #define VRNA_OPTION_MULTILINE 32U
00129
00130
00134 #define MIN2(A, B) ((A) < (B) ? (A) : (B))
00138 #define MAX2(A, B) ((A) > (B) ? (A) : (B))
00142 #define MIN3(A, B, C) (MIN2( (MIN2((A), (B))), (C)))
00146 #define MAX3(A, B, C) (MAX2( (MAX2((A), (B))), (C)))
00147
00148
00152 #define XSTR(s) STR(s)
00156 #define STR(s) #s
00157
00158 #ifndef FILENAME_MAX_LENGTH
00165 #define FILENAME_MAX_LENGTH 80
00172 #define FILENAME_ID_LENGTH 42
00173 #endif
00174
00175
00176 #ifdef HAVE_CONFIG_H
00177 #include <config.h>
00178 #ifndef HAVE_STRDUP
00179 char *strdup(const char *s);
00180 #endif
00181 #endif
00182 #ifdef WITH_DMALLOC
00183 /* use dmalloc library to check for memory management bugs */
00184 #include "dmalloc.h"
00185 #define space(S) calloc(1, (S))
00186 #else
00187
00194 /*@only@*/ /*@nonnull@*/
00195 void *space(unsigned size) /*@ensures MaxSet(result) == (size-1);@*/;
00196
00204 /*@only@*/ /*@nonnull@*/
00205 void *xrealloc/*@@null@*/ /*@only@*/ /*@out@*/ /*@returned@*/ void *p,
```

```

00206             unsigned size) /*@modifies *p @*/ /*@ensures MaxSet(result) == (size-1) @*/;
00207 #endif
00208
00215 /*@exits@*/
00216 void nrerror(const char message[]);
00217
00225 void warn_user(const char message[]);
00226
00230 void init_rand(void);
00231
00240 extern unsigned short xsubi[3];
00241
00248 double urn(void);
00249
00257 int int_urn(int from, int to);
00258
00259 void filecopy(FILE *from, FILE *to); /* inefficient `cp' */
00260
00269 /*@observer@*/
00270 char *time_stamp(void);
00271
00279 /*@only@*/ /*@notnull@*/
00280 char *random_string(int l, const char symbols[]);
00281
00290 int hamming(const char *s1, const char *s2);
00291
00301 int hamming_bound(const char *s1, const char *s2, int n);
00302
00313 /*@only@*/ /*@null@*/
00314 char *get_line(FILE *fp);
00315
00316 int skip_comment_lines(char **line);
00317
00338 unsigned int get_input_line(char **string,
00339                             unsigned int options);
00340
00341 unsigned int get_multi_input_line(char **string,
00342                                  unsigned int options);
00343
00396 unsigned int read_record( char **header,
00397                          char **sequence,
00398                          char ***rest,
00399                          unsigned int options);
00400
00401
00402 /* \brief Extract a dot-bracket structure string from (multiline)character array
00403 *
00404 * This function extracts a dot-bracket structure string from the 'rest' array as
00405 * returned by read_record() and returns it. All occurrences of comments within the
00406 * 'lines' array will be skipped as long as they do not break the structure string.
00407 * If no structure could be read, this function returns NULL.
00408 *
00409 * \see read_record()
00410 *
00411 * \param lines The (multiline) character array to be parsed
00412 * \param length The assumed length of the dot-bracket string (passing a value < 1 results in no
length limit)
00413 * \param option Some options which may be passed to alter the behavior of the function, use 0 for no
options
00414 * \return The dot-bracket string read from lines or NULL
00415 */
00416 char *extract_record_rest_structure(const char **lines,
00417                                   unsigned int length,
00418                                   unsigned int option);
00419
00431 char *pack_structure(const char *struc);
00432
00442 char *unpack_structure(const char *packed);
00443
00453 short *make_pair_table(const char *structure);
00454
00455 short *make_pair_table_pk(const char *structure);
00456
00463 short *copy_pair_table(const short *pt);
00464
00470 short *alimake_pair_table(const char *structure);
00471
00477 short *make_pair_table_snoop(const char *structure);
00478
00491 int *make_loop_index_pt(short *pt);
00492
00493
00494 int bp_distance(const char *str1,
00495               const char *str2);
00496
00502 void print_tty_input_seq(void);
00503

```

```

00512 void print_tty_input_seq_str(const char *s);
00513
00519 void print_tty_constraint_full(void);
00520
00537 void print_tty_constraint(unsigned int option);
00538
00546 void str_DNA2RNA(char *sequence);
00547
00553 void str_uppercase(char *sequence);
00554
00568 int *get_iindx(unsigned int length);
00569
00584 int *get_indx(unsigned int length);
00585
00586 void getConstraint( char **cstruc,
00587                    const char **lines,
00588                    unsigned int option);
00589
00601 void constrain_ptypes(const char *constraint,
00602                      unsigned int length,
00603                      char *ptype,
00604                      int *BP,
00605                      int min_loop_size,
00606                      unsigned int idx_type);
00607
00608 unsigned int *make_referenceBP_array(short *reference_pt,
00609                                     unsigned int turn);
00610
00611 unsigned int *compute_BPdifferences( short *pt1,
00612                                     short *pt2,
00613                                     unsigned int turn);
00614
00615 #endif

```

11.84 /homes/brauerei2/ronny/WORK/ViennaRNA/lib/1.8.4_epars.h File Reference

Free energy parameters for parameter file conversion.

11.84.1 Detailed Description

Free energy parameters for parameter file conversion.

This file contains the free energy parameters used in ViennaRNAPackage 1.8.4. They are summarized in:

D.H.Mathews, J. Sabina, M. Zuker, D.H. Turner "Expanded sequence dependence of thermodynamic parameters improves prediction of RNA secondary structure" JMB, 288, pp 911-940, 1999

Enthalpies taken from:

A. Walter, D Turner, J Kim, M Lyttle, P M"uller, D Mathews, M Zuker "Coaxial stckaing of helices enhances binding of oligoribonucleotides.." PNAS, 91, pp 9218-9222, 1994 D.H. Turner, N. Sugimoto, and S.M. Freier. "RNA Structure Prediction", Ann. Rev. Biophys. Biophys. Chem. 17, 167-192, 1988. John A.Jaeger, Douglas H.Turner, and Michael Zuker. "Improved predictions of secondary structures for RNA", PNAS, 86, 7706-7710, October 1989. L. He, R. Kierzek, J. SantaLucia, A.E. Walter, D.H. Turner "Nearest-Neughbor Parameters for GU Mismatches...." ↵ Biochemistry 1991, 30 11124-11132 A.E. Peritz, R. Kierzek, N. Sugimoto, D.H. Turner "Thermodynamic Study of Internal Loops in Oligoribonucleotides..." Biochemistry 1991, 30, 6428-6435

11.85 1.8.4_epars.h

[Go to the documentation of this file.](#)

```

00001 #ifndef __VIENNA_RNA_PACKAGE_OLD_EPARS__
00002 #define __VIENNA_RNA_PACKAGE_OLD_EPARS__
00038 #define K0 273.15
00039 #ifdef INF
00040 #undef INF
00041 #endif
00042 #define INF 1000000
00043 #define NBPAIRS 7
00044 #define NST 0 /* Energy for nonstandard stacked pairs */
00045 #define DEF -50 /* Default terminal mismatch, used for I */
00046 /* and any non_pairing bases */
00047 #define NSM 0 /* terminal mismatch for non standard pairs */
00048
00049 PRIVATE double Tmeasure_184 = 37 + K0; /* temperature of param measurements */
00050 PRIVATE double lxc37_184 = 107.856; /* parameter for logarithmic loop

```

```

00051                                     energy extrapolation */
00052
00053 PRIVATE int stack37_184[NBPAIRS+1][NBPAIRS+1] =
00054 /*      CG      GC      GU      UG      AU      UA      */
00055 { { INF, INF, INF, INF, INF, INF, INF, INF},
00056   { INF, -240, -330, -210, -140, -210, -210, NST},
00057   { INF, -330, -340, -250, -150, -220, -240, NST},
00058   { INF, -210, -250, 130, -50, -140, -130, NST},
00059   { INF, -140, -150, -50, 30, -60, -100, NST},
00060   { INF, -210, -220, -140, -60, -110, -90, NST},
00061   { INF, -210, -240, -130, -100, -90, -130, NST},
00062   { INF, NST, NST, NST, NST, NST, NST, NST}};
00063
00064 /* enthalpies (0.01*kcal/mol at 37 C) for stacked pairs */
00065 /* different from mfold-2.3, which uses values from mfold-2.2 */
00066 PRIVATE int enthalpies_184[NBPAIRS+1][NBPAIRS+1] =
00067 /*      CG      GC      GU      UG      AU      UA      */
00068 { { INF, INF, INF, INF, INF, INF, INF, INF},
00069   { INF, -1060, -1340, -1210, -560, -1050, -1040, NST},
00070   { INF, -1340, -1490, -1260, -830, -1140, -1240, NST},
00071   { INF, -1210, -1260, -1460, -1350, -880, -1280, NST},
00072   { INF, -560, -830, -1350, -930, -320, -700, NST},
00073   { INF, -1050, -1140, -880, -320, -940, -680, NST},
00074   { INF, -1040, -1240, -1280, -700, -680, -770, NST},
00075   { INF, NST, NST, NST, NST, NST, NST, NST}};
00076
00077
00078 /* old values are here just for comparison */
00079 PRIVATE int oldhairpin37_184[31] = { /* from ViennaRNA 1.3 */
00080   INF, INF, INF, 410, 490, 440, 470, 500, 510, 520, 531,
00081   542, 551, 560, 568, 575, 582, 589, 595, 601, 606,
00082   611, 616, 621, 626, 630, 634, 638, 642, 646, 650};
00083
00084 PRIVATE int hairpin37_184[31] = {
00085   INF, INF, INF, 570, 560, 560, 540, 590, 560, 640, 650,
00086   660, 670, 678, 686, 694, 701, 707, 713, 719, 725,
00087   730, 735, 740, 744, 749, 753, 757, 761, 765, 769};
00088
00089 PRIVATE int oldbulge37_184[31] = {
00090   INF, 390, 310, 350, 420, 480, 500, 516, 531, 543, 555,
00091   565, 574, 583, 591, 598, 605, 612, 618, 624, 630,
00092   635, 640, 645, 649, 654, 658, 662, 666, 670, 673};
00093
00094 PRIVATE int bulge37_184[31] = {
00095   INF, 380, 280, 320, 360, 400, 440, 459, 470, 480, 490,
00096   500, 510, 519, 527, 534, 541, 548, 554, 560, 565,
00097   571, 576, 580, 585, 589, 594, 598, 602, 605, 609};
00098
00099 PRIVATE int oldinternal_loop37_184[31] = {
00100   INF, INF, 410, 510, 490, 530, 570, 587, 601, 614, 625,
00101   635, 645, 653, 661, 669, 676, 682, 688, 694, 700,
00102   705, 710, 715, 720, 724, 728, 732, 736, 740, 744};
00103
00104 PRIVATE int internal_loop37_184[31] = {
00105   INF, INF, 410, 510, 170, 180, 200, 220, 230, 240, 250,
00106   260, 270, 278, 286, 294, 301, 307, 313, 319, 325,
00107   330, 335, 340, 345, 349, 353, 357, 361, 365, 369};
00108
00109 /* terminal mismatches */
00110 /* mismatch free energies for interior loops at 37C */
00111 PRIVATE int mismatchI37_184[NBPAIRS+1][5][5] =
00112 { /* @@ */
00113   {{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0}},
00114   { /* CG */
00115     { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00116     { 0, 0, 0, -110, 0}, /* A@ AA AC AG AU */
00117     { 0, 0, 0, 0, 0}, /* C@ CA CC CG CU */
00118     { 0, -110, 0, 0, 0}, /* G@ GA GC GG GU */
00119     { 0, 0, 0, 0, -70}}, /* U@ UA UC UG UU */
00120   { /* GC */
00121     { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00122     { 0, 0, 0, -110, 0}, /* A@ AA AC AG AU */
00123     { 0, 0, 0, 0, 0}, /* C@ CA CC CG CU */
00124     { 0, -110, 0, 0, 0}, /* G@ GA GC GG GU */
00125     { 0, 0, 0, 0, -70}}, /* U@ UA UC UG UU */
00126   { /* GU */
00127     { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00128     { 0, 70, 70, -40, 70}, /* A@ AA AC AG AU */
00129     { 0, 70, 70, 70, 70}, /* C@ CA CC CG CU */
00130     { 0, -40, 70, 70, 70}, /* G@ GA GC GG GU */
00131     { 0, 70, 70, 70, 0}}, /* U@ UA UC UG UU */
00132   { /* UG */
00133     { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00134     { 0, 70, 70, -40, 70}, /* A@ AA AC AG AU */
00135     { 0, 70, 70, 70, 70}, /* C@ CA CC CG CU */
00136     { 0, -40, 70, 70, 70}, /* G@ GA GC GG GU */
00137     { 0, 70, 70, 70, 0}}, /* U@ UA UC UG UU */

```

```

00138 { /* AU */
00139 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00140 { 0, 70, 70, -40, 70}, /* A@ AA AC AG AU */
00141 { 0, 70, 70, 70, 70}, /* C@ CA CC CG CU */
00142 { 0, -40, 70, 70, 70}, /* G@ GA GC GG GU */
00143 { 0, 70, 70, 70, 0}}, /* U@ UA UC UG UU */
00144 { /* UA */
00145 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00146 { 0, 70, 70, -40, 70}, /* A@ AA AC AG AU */
00147 { 0, 70, 70, 70, 70}, /* C@ CA CC CG CU */
00148 { 0, -40, 70, 70, 70}, /* G@ GA GC GG GU */
00149 { 0, 70, 70, 70, 0}}, /* U@ UA UC UG UU */
00150 { /* @@ */
00151 { 90, 90, 90, 90, 90}, { 90, 90, 90, 90, -20}, { 90, 90, 90, 90, 90},
00152 { 90, -20, 90, 90, 90}, { 90, 90, 90, 90, 20}}
00153 };
00154
00155 /* mismatch free energies for hairpins at 37C */
00156 PRIVATE int mismatchH37_184[NBPAIRS+1][5][5] =
00157 { /* @@ */
00158 {{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0}},
00159 { /* CG */
00160 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00161 { -90, -150, -150, -140, -180}, /* A@ AA AC AG AU */
00162 { -90, -100, -90, -290, -80}, /* C@ CA CC CG CU */
00163 { -90, -220, -200, -160, -110}, /* G@ GA GC GG GU */
00164 { -90, -170, -140, -180, -200}}, /* U@ UA UC UG UU */
00165 { /* GC */
00166 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00167 { -70, -110, -150, -130, -210}, /* A@ AA AC AG AU */
00168 { -70, -110, -70, -240, -50}, /* C@ CA CC CG CU */
00169 { -70, -240, -290, -140, -120}, /* G@ GA GC GG GU */
00170 { -70, -190, -100, -220, -150}}, /* U@ UA UC UG UU */
00171 { /* GU */
00172 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00173 { 0, 20, -50, -30, -30}, /* A@ AA AC AG AU */
00174 { 0, -10, -20, -150, -20}, /* C@ CA CC CG CU */
00175 { 0, -90, -110, -30, 0}, /* G@ GA GC GG GU */
00176 { 0, -30, -30, -40, -110}}, /* U@ UA UC UG UU */
00177 { /* UG */
00178 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00179 { 0, -50, -30, -60, -50}, /* A@ AA AC AG AU */
00180 { 0, -20, -10, -170, 0}, /* C@ CA CC CG CU */
00181 { 0, -80, -120, -30, -70}, /* G@ GA GC GG GU */
00182 { 0, -60, -10, -60, -80}}, /* U@ UA UC UG UU */
00183 { /* AU */
00184 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00185 { 0, -30, -50, -30, -30}, /* A@ AA AC AG AU */
00186 { 0, -10, -20, -150, -20}, /* C@ CA CC CG CU */
00187 { 0, -110, -120, -20, 20}, /* G@ GA GC GG GU */
00188 { 0, -30, -30, -60, -110}}, /* U@ UA UC UG UU */
00189 { /* UA */
00190 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00191 { 0, -50, -30, -60, -50}, /* A@ AA AC AG AU */
00192 { 0, -20, -10, -120, -0}, /* C@ CA CC CG CU */
00193 { 0, -140, -120, -70, -20}, /* G@ GA GC GG GU */
00194 { 0, -30, -10, -50, -80}}, /* U@ UA UC UG UU */
00195 { /* @@ */
00196 { 0, 0, 0, 0, 0}, { 0, 0, 0, 0, 0}, { 0, 0, 0, 0, 0},
00197 { 0, 0, 0, 0, 0}, { 0, 0, 0, 0, 0}}
00198 };
00199
00200 /* mismatch energies in multiloops */
00201 PRIVATE int mismatchM37_184[NBPAIRS+1][5][5];
00202
00203 /* these are probably junk */
00204 /* mismatch enthalpies for temperature scaling */
00205 PRIVATE int mism_H_184[NBPAIRS+1][5][5] =
00206 { /* no pair */
00207 {{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0},{0,0,0,0,0}},
00208 { /* CG */
00209 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00210 { DEF, -1030, -950, -1030, -1030}, /* A@ AA AC AG AU */
00211 { DEF, -520, -450, -520, -670}, /* C@ CA CC CG CU */
00212 { DEF, -940, -940, -940, -940}, /* G@ GA GC GG GU */
00213 { DEF, -810, -740, -810, -860}}, /* U@ UA UC UG UU */
00214 { /* GC */
00215 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00216 { DEF, -520, -880, -560, -880}, /* A@ AA AC AG AU */
00217 { DEF, -720, -310, -310, -390}, /* C@ CA CC CG CU */
00218 { DEF, -710, -740, -620, -740}, /* G@ GA GC GG GU */
00219 { DEF, -500, -500, -500, -570}}, /* U@ UA UC UG UU */
00220 { /* GU */
00221 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00222 { DEF, -430, -600, -600, -600}, /* A@ AA AC AG AU */
00223 { DEF, -260, -240, -240, -240}, /* C@ CA CC CG CU */
00224 { DEF, -340, -690, -690, -690}, /* G@ GA GC GG GU */

```

```

00225 { DEF, -330, -330, -330, -330}, /* U@ UA UC UG UU */
00226 { /* UG */
00227 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00228 { DEF, -720, -790, -960, -810}, /* A@ AA AC AG AU */
00229 { DEF, -480, -480, -360, -480}, /* C@ CA CC CG CU */
00230 { DEF, -660, -810, -920, -810}, /* G@ GA GC GG GU */
00231 { DEF, -550, -440, -550, -360}, /* U@ UA UC UG UU */
00232 { /* AU */
00233 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00234 { DEF, -430, -600, -600, -600}, /* A@ AA AC AG AU */
00235 { DEF, -260, -240, -240, -240}, /* C@ CA CC CG CU */
00236 { DEF, -340, -690, -690, -690}, /* G@ GA GC GG GU */
00237 { DEF, -330, -330, -330, -330}, /* U@ UA UC UG UU */
00238 { /* UA */
00239 { 0, 0, 0, 0, 0}, /* @@ @A @C @G @U */
00240 { DEF, -400, -630, -890, -590}, /* A@ AA AC AG AU */
00241 { DEF, -430, -510, -200, -180}, /* C@ CA CC CG CU */
00242 { DEF, -380, -680, -890, -680}, /* G@ GA GC GG GU */
00243 { DEF, -280, -140, -280, -140}, /* U@ UA UC UG UU */
00244 { /* nonstandard pair */
00245 {DEF,DEF,DEF,DEF,DEF},{DEF,DEF,DEF,DEF,DEF},{DEF,DEF,DEF,DEF,DEF},
00246 {DEF,DEF,DEF,DEF,DEF},{DEF,DEF,DEF,DEF,DEF}}
00247 };
00248
00249 /* 5' dangling ends (unpaired base stacks on first paired base) */
00250 PRIVATE int dangle5_37_184[NBPAIRS+1][5]=
00251 { /* @ A C G U */
00252 { INF, INF, INF, INF, INF}, /* no pair */
00253 { INF, -50, -30, -20, -10}, /* CG (stacks on C) */
00254 { INF, -20, -30, -0, -0}, /* GC (stacks on G) */
00255 { INF, -30, -30, -40, -20}, /* GU */
00256 { INF, -30, -10, -20, -20}, /* UG */
00257 { INF, -30, -30, -40, -20}, /* AU */
00258 { INF, -30, -10, -20, -20}, /* UA */
00259 { 0, 0, 0, 0, 0} /* @ */
00260 };
00261
00262 /* 3' dangling ends (unpaired base stacks on second paired base) */
00263 PRIVATE int dangle3_37_184[NBPAIRS+1][5]=
00264 { /* @ A C G U */
00265 { INF, INF, INF, INF, INF}, /* no pair */
00266 { INF, -110, -40, -130, -60}, /* CG (stacks on G) */
00267 { INF, -170, -80, -170, -120}, /* GC */
00268 { INF, -70, -10, -70, -10}, /* GU */
00269 { INF, -80, -50, -80, -60}, /* UG */
00270 { INF, -70, -10, -70, -10}, /* AU */
00271 { INF, -80, -50, -80, -60}, /* UA */
00272 { 0, 0, 0, 0, 0} /* @ */
00273 };
00274
00275 /* enthalpies for temperature scaling */
00276 PRIVATE int dangle3_H_184[NBPAIRS+1][5] =
00277 { /* @ A C G U */
00278 { INF, INF, INF, INF, INF}, /* no pair */
00279 { 0, -740, -280, -640, -360},
00280 { 0, -900, -410, -860, -750},
00281 { 0, -740, -240, -720, -490},
00282 { 0, -490, -90, -550, -230},
00283 { 0, -570, -70, -580, -220},
00284 { 0, -490, -90, -550, -230},
00285 { 0, 0, 0, 0, 0}
00286 };
00287
00288 PRIVATE int dangle5_H_184[NBPAIRS+1][5] =
00289 { /* @ A C G U */
00290 { INF, INF, INF, INF, INF}, /* no pair */
00291 { 0, -240, 330, 80, -140},
00292 { 0, -160, 70, -460, -40},
00293 { 0, 160, 220, 70, 310},
00294 { 0, -150, 510, 10, 100},
00295 { 0, 160, 220, 70, 310},
00296 { 0, -50, 690, -60, -60},
00297 { 0, 0, 0, 0, 0}
00298 };
00299
00300
00301 /* constants for linearly destabilizing contributions for multi-loops
00302 F = ML_closing + ML_intern*k + ML_BASE*u */
00303 /* old versions erroneously used ML_intern*(k-1) */
00304 PRIVATE int ML_BASE37_184 = 0;
00305 PRIVATE int ML_closing37_184 = 340;
00306 PRIVATE int ML_intern37_184 = 40;
00307
00308 /* Ninio-correction for asymmetric internal loops with branches n1 and n2 */
00309 /* ninio_energy = min{max_ninio, |n1-n2|*F_ninio[min{4.0, n1, n2}]} */
00310 PRIVATE int MAX_NINIO_184 = 300; /* maximum correction */
00311 PRIVATE int F_ninio37_184[5] = { 0, 40, 50, 20, 10 }; /* only F[2] used */

```



```

00312
00313 /* stabilizing contribution due to special hairpins of size 4 (tetraloops) */
00314
00315 PRIVATE char Tetraloops_184[1400] = /* place for up to 200 tetra loops */
00316     "GGGGAC "
00317     "GGUGAC "
00318     "CGAAAG "
00319     "GGAGAC "
00320     "CGCAAG "
00321     "GGAAAC "
00322     "CGGAAG "
00323     "CUUCGG "
00324     "CGUGAG "
00325     "CGAAGG "
00326     "CUACGG "
00327     "GGCAAC "
00328     "CGCGAG "
00329     "UGAGAG "
00330     "CGAGAG "
00331     "AGAAAU "
00332     "CGUAAG "
00333     "CUAACG "
00334     "UGAAAG "
00335     "GGAAGC "
00336     "GGGAAC "
00337     "UGAAAA "
00338     "AGCAAU "
00339     "AGUAAU "
00340     "CGGGAG "
00341     "AGUGAU "
00342     "GGCGAC "
00343     "GGGAGC "
00344     "GUGAAC "
00345     "UGGAAA "
00346 ;
00347
00348 PRIVATE int TETRA_ENERGY37_184[200] = {
00349     -300, -300, -300, -300, -300, -300, -300, -300, -300, -300, -250, -250, -250,
00350     -250, -250, -200, -200, -200, -200, -200, -200, -150, -150, -150, -150,
00351     -150, -150, -150, -150, -150, -150};
00352
00353 PRIVATE int TETRA_ENTH37_184 = -400;
00354
00355 PRIVATE char Triloops_184[241] = "";
00356
00357 PRIVATE int Triloop_E37_184[40];
00358
00359 /* penalty for AU (or GU) terminating helix) */
00360 /* mismatches already contain these */
00361 PRIVATE int TerminalAU_184 = 50;
00362
00363 /* penalty for forming a bi-molecular duplex */
00364 PRIVATE int DuplexInit_184 = 410;
00365
00366 #endif

```

11.86 /homes/brauerei2/ronny/WORK/ViennaRNA/lib/1.8.4_intloops.h File Reference

Free energy parameters for interior loop contributions needed by the parameter file conversion functions.

11.86.1 Detailed Description

Free energy parameters for interior loop contributions needed by the parameter file conversion functions.

11.87 1.8.4_intloops.h

[Go to the documentation of this file.](#)

```

00001
00005 PRIVATE int int11_37_184[NBPAIRS+1][NBPAIRS+1][5][5] =
00006 { /* noPair */ {{{0}}},
00007 { /* noPair */ {{0}},
00008 /* CG..CG */
00009 {{ 110, 110, 110, 110, 110},
00010 { 110, 110, 40, 40, 40},
00011 { 110, 40, 40, 40, 40},
00012 { 110, 40, 40, -140, 40},
00013 { 110, 40, 40, 40, 40}

```

```

00014 },
00015 /* CG..GC */
00016 {{ 110, 110, 110, 110, 110},
00017 { 110, 40, -40, 40, 40},
00018 { 110, 30, 50, 40, 50},
00019 { 110, -10, 40, -170, 40},
00020 { 110, 40, 0, 40, -30}
00021 },
00022 /* CG..GU */
00023 {{ 110, 110, 110, 110, 110},
00024 { 110, 110, 110, 110, 110},
00025 { 110, 110, 110, 110, 110},
00026 { 110, 110, 110, -100, 110},
00027 { 110, 110, 110, 110, 110}
00028 },
00029 /* CG..UG */
00030 {{ 110, 110, 110, 110, 110},
00031 { 110, 110, 110, 110, 110},
00032 { 110, 110, 110, 110, 110},
00033 { 110, 110, 110, -100, 110},
00034 { 110, 110, 110, 110, 110}
00035 },
00036 /* CG..AU */
00037 {{ 110, 110, 110, 110, 110},
00038 { 110, 110, 110, 110, 110},
00039 { 110, 110, 110, 110, 110},
00040 { 110, 110, 110, -100, 110},
00041 { 110, 110, 110, 110, 110}
00042 },
00043 /* CG..UA */
00044 {{ 110, 110, 110, 110, 110},
00045 { 110, 110, 110, 110, 110},
00046 { 110, 110, 110, 110, 110},
00047 { 110, 110, 110, -100, 110},
00048 { 110, 110, 110, 110, 110}
00049 },
00050 /* CG.?? */
00051 {{ 110, 110, 110, 110, 110},
00052 { 110, 110, 110, 110, 110},
00053 { 110, 110, 110, 110, 110},
00054 { 110, 110, 110, 110, 110},
00055 { 110, 110, 110, 110, 110}
00056 },
00057 },
00058 { /* noPair */ {{0}},
00059 /* GC..CG */
00060 {{ 110, 110, 110, 110, 110},
00061 { 110, 40, 30, -10, 40},
00062 { 110, -40, 50, 40, 0},
00063 { 110, 40, 40, -170, 40},
00064 { 110, 40, 50, 40, -30}
00065 },
00066 /* GC..GC */
00067 {{ 110, 110, 110, 110, 110},
00068 { 110, 80, 40, 40, 40},
00069 { 110, 40, 40, 40, 40},
00070 { 110, 40, 40, -210, 40},
00071 { 110, 40, 40, 40, -70}
00072 },
00073 /* GC..GU */
00074 {{ 110, 110, 110, 110, 110},
00075 { 110, 110, 110, 110, 110},
00076 { 110, 110, 110, 110, 110},
00077 { 110, 110, 110, -100, 110},
00078 { 110, 110, 110, 110, 110}
00079 },
00080 /* GC..UG */
00081 {{ 110, 110, 110, 110, 110},
00082 { 110, 110, 110, 110, 110},
00083 { 110, 110, 110, 110, 110},
00084 { 110, 110, 110, -100, 110},
00085 { 110, 110, 110, 110, 110}
00086 },
00087 /* GC..AU */
00088 {{ 110, 110, 110, 110, 110},
00089 { 110, 110, 110, 110, 110},
00090 { 110, 110, 110, 110, 110},
00091 { 110, 110, 110, -100, 110},
00092 { 110, 110, 110, 110, 100}
00093 },
00094 /* GC..UA */
00095 {{ 110, 110, 110, 110, 110},
00096 { 110, 110, 110, 110, 110},
00097 { 110, 110, 110, 110, 110},
00098 { 110, 110, 110, -100, 110},
00099 { 110, 110, 110, 110, 110}
00100 },

```

```
00101 /* GC.?? */
00102 {{ 110, 110, 110, 110, 110},
00103 { 110, 110, 110, 110, 110},
00104 { 110, 110, 110, 110, 110},
00105 { 110, 110, 110, 110, 110},
00106 { 110, 110, 110, 110, 110}
00107 },
00108 },
00109 { /* noPair */ {{0}},
00110 /* GU..CG */
00111 {{ 110, 110, 110, 110, 110},
00112 { 110, 110, 110, 110, 110},
00113 { 110, 110, 110, 110, 110},
00114 { 110, 110, 110, -100, 110},
00115 { 110, 110, 110, 110, 110}
00116 },
00117 /* GU..GC */
00118 {{ 110, 110, 110, 110, 110},
00119 { 110, 110, 110, 110, 110},
00120 { 110, 110, 110, 110, 110},
00121 { 110, 110, 110, -100, 110},
00122 { 110, 110, 110, 110, 110}
00123 },
00124 /* GU..GU */
00125 {{ 170, 170, 170, 170, 170},
00126 { 170, 170, 170, 170, 170},
00127 { 170, 170, 170, 170, 170},
00128 { 170, 170, 170, -40, 170},
00129 { 170, 170, 170, 170, 170}
00130 },
00131 /* GU..UG */
00132 {{ 170, 170, 170, 170, 170},
00133 { 170, 170, 170, 170, 170},
00134 { 170, 170, 170, 170, 170},
00135 { 170, 170, 170, -40, 170},
00136 { 170, 170, 170, 170, 170}
00137 },
00138 /* GU..AU */
00139 {{ 170, 170, 170, 170, 170},
00140 { 170, 170, 170, 170, 170},
00141 { 170, 170, 170, 170, 170},
00142 { 170, 170, 170, -40, 170},
00143 { 170, 170, 170, 170, 170}
00144 },
00145 /* GU..UA */
00146 {{ 170, 170, 170, 170, 170},
00147 { 170, 170, 170, 170, 170},
00148 { 170, 170, 170, 170, 170},
00149 { 170, 170, 170, -40, 170},
00150 { 170, 170, 170, 170, 170}
00151 },
00152 /* GU.?? */
00153 {{ 170, 170, 170, 170, 170},
00154 { 170, 170, 170, 170, 170},
00155 { 170, 170, 170, 170, 170},
00156 { 170, 170, 170, 170, 170},
00157 { 170, 170, 170, 170, 170}
00158 },
00159 },
00160 { /* noPair */ {{0}},
00161 /* UG..CG */
00162 {{ 110, 110, 110, 110, 110},
00163 { 110, 110, 110, 110, 110},
00164 { 110, 110, 110, 110, 110},
00165 { 110, 110, 110, -100, 110},
00166 { 110, 110, 110, 110, 110}
00167 },
00168 /* UG..GC */
00169 {{ 110, 110, 110, 110, 110},
00170 { 110, 110, 110, 110, 110},
00171 { 110, 110, 110, 110, 110},
00172 { 110, 110, 110, -100, 110},
00173 { 110, 110, 110, 110, 110}
00174 },
00175 /* UG..GU */
00176 {{ 170, 170, 170, 170, 170},
00177 { 170, 170, 170, 170, 170},
00178 { 170, 170, 170, 170, 170},
00179 { 170, 170, 170, -40, 170},
00180 { 170, 170, 170, 170, 170}
00181 },
00182 /* UG..UG */
00183 {{ 170, 170, 170, 170, 170},
00184 { 170, 170, 170, 170, 170},
00185 { 170, 170, 170, 170, 170},
00186 { 170, 170, 170, -40, 170},
00187 { 170, 170, 170, 170, 170}
```

```

00188 },
00189 /* UG..AU */
00190 {{ 170, 170, 170, 170, 170},
00191 { 170, 170, 170, 170, 170},
00192 { 170, 170, 170, 170, 170},
00193 { 170, 170, 170, -40, 170},
00194 { 170, 170, 170, 170, 170}
00195 },
00196 /* UG..UA */
00197 {{ 170, 170, 170, 170, 170},
00198 { 170, 170, 170, 170, 170},
00199 { 170, 170, 170, 170, 170},
00200 { 170, 170, 170, -40, 170},
00201 { 170, 170, 170, 170, 170}
00202 },
00203 /* UG..?? */
00204 {{ 170, 170, 170, 170, 170},
00205 { 170, 170, 170, 170, 170},
00206 { 170, 170, 170, 170, 170},
00207 { 170, 170, 170, 170, 170},
00208 { 170, 170, 170, 170, 170}
00209 },
00210 },
00211 { /* noPair */ {{0}},
00212 /* AU..CG */
00213 {{ 110, 110, 110, 110, 110},
00214 { 110, 110, 110, 110, 110},
00215 { 110, 110, 110, 110, 110},
00216 { 110, 110, 110, -100, 110},
00217 { 110, 110, 110, 110, 110}
00218 },
00219 /* AU..GC */
00220 {{ 110, 110, 110, 110, 110},
00221 { 110, 110, 110, 110, 110},
00222 { 110, 110, 110, 110, 110},
00223 { 110, 110, 110, -100, 110},
00224 { 110, 110, 110, 110, 100}
00225 },
00226 /* AU..GU */
00227 {{ 170, 170, 170, 170, 170},
00228 { 170, 170, 170, 170, 170},
00229 { 170, 170, 170, 170, 170},
00230 { 170, 170, 170, -40, 170},
00231 { 170, 170, 170, 170, 170}
00232 },
00233 /* AU..UG */
00234 {{ 170, 170, 170, 170, 170},
00235 { 170, 170, 170, 170, 170},
00236 { 170, 170, 170, 170, 170},
00237 { 170, 170, 170, -40, 170},
00238 { 170, 170, 170, 170, 170}
00239 },
00240 /* AU..AU */
00241 {{ 170, 170, 170, 170, 170},
00242 { 170, 170, 170, 170, 170},
00243 { 170, 170, 170, 170, 170},
00244 { 170, 170, 170, -40, 170},
00245 { 170, 170, 170, 170, 120}
00246 },
00247 /* AU..UA */
00248 {{ 170, 170, 170, 170, 170},
00249 { 170, 170, 170, 170, 170},
00250 { 170, 170, 170, 170, 170},
00251 { 170, 170, 170, -40, 170},
00252 { 170, 170, 170, 170, 150}
00253 },
00254 /* AU..?? */
00255 {{ 170, 170, 170, 170, 170},
00256 { 170, 170, 170, 170, 170},
00257 { 170, 170, 170, 170, 170},
00258 { 170, 170, 170, 170, 170},
00259 { 170, 170, 170, 170, 170}
00260 },
00261 },
00262 { /* noPair */ {{0}},
00263 /* UA..CG */
00264 {{ 110, 110, 110, 110, 110},
00265 { 110, 110, 110, 110, 110},
00266 { 110, 110, 110, 110, 110},
00267 { 110, 110, 110, -100, 110},
00268 { 110, 110, 110, 110, 110}
00269 },
00270 /* UA..GC */
00271 {{ 110, 110, 110, 110, 110},
00272 { 110, 110, 110, 110, 110},
00273 { 110, 110, 110, 110, 110},
00274 { 110, 110, 110, -100, 110},

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00275 { 110, 110, 110, 110, 110}
00276 },
00277 /* UA..GU */
00278 {{ 170, 170, 170, 170, 170},
00279 { 170, 170, 170, 170, 170},
00280 { 170, 170, 170, 170, 170},
00281 { 170, 170, 170, -40, 170},
00282 { 170, 170, 170, 170, 170}
00283 },
00284 /* UA..UG */
00285 {{ 170, 170, 170, 170, 170},
00286 { 170, 170, 170, 170, 170},
00287 { 170, 170, 170, 170, 170},
00288 { 170, 170, 170, -40, 170},
00289 { 170, 170, 170, 170, 170}
00290 },
00291 /* UA..AU */
00292 {{ 170, 170, 170, 170, 170},
00293 { 170, 170, 170, 170, 170},
00294 { 170, 170, 170, 170, 170},
00295 { 170, 170, 170, -40, 170},
00296 { 170, 170, 170, 170, 150}
00297 },
00298 /* UA..UA */
00299 {{ 170, 170, 170, 170, 170},
00300 { 170, 170, 170, 170, 170},
00301 { 170, 170, 170, 170, 170},
00302 { 170, 170, 170, -40, 170},
00303 { 170, 170, 170, 170, 180}
00304 },
00305 /* UA..?? */
00306 {{ 170, 170, 170, 170, 170},
00307 { 170, 170, 170, 170, 170},
00308 { 170, 170, 170, 170, 170},
00309 { 170, 170, 170, 170, 170},
00310 { 170, 170, 170, 170, 170}
00311 },
00312 },
00313 { /* noPair */ {{0}},
00314 /* ??..CG */
00315 {{ 110, 110, 110, 110, 110},
00316 { 110, 110, 110, 110, 110},
00317 { 110, 110, 110, 110, 110},
00318 { 110, 110, 110, 110, 110},
00319 { 110, 110, 110, 110, 110}
00320 },
00321 /* ??..GC */
00322 {{ 110, 110, 110, 110, 110},
00323 { 110, 110, 110, 110, 110},
00324 { 110, 110, 110, 110, 110},
00325 { 110, 110, 110, 110, 110},
00326 { 110, 110, 110, 110, 110}
00327 },
00328 /* ??..GU */
00329 {{ 170, 170, 170, 170, 170},
00330 { 170, 170, 170, 170, 170},
00331 { 170, 170, 170, 170, 170},
00332 { 170, 170, 170, 170, 170},
00333 { 170, 170, 170, 170, 170}
00334 },
00335 /* ??..UG */
00336 {{ 170, 170, 170, 170, 170},
00337 { 170, 170, 170, 170, 170},
00338 { 170, 170, 170, 170, 170},
00339 { 170, 170, 170, 170, 170},
00340 { 170, 170, 170, 170, 170}
00341 },
00342 /* ??..AU */
00343 {{ 170, 170, 170, 170, 170},
00344 { 170, 170, 170, 170, 170},
00345 { 170, 170, 170, 170, 170},
00346 { 170, 170, 170, 170, 170},
00347 { 170, 170, 170, 170, 170}
00348 },
00349 /* ??..UA */
00350 {{ 170, 170, 170, 170, 170},
00351 { 170, 170, 170, 170, 170},
00352 { 170, 170, 170, 170, 170},
00353 { 170, 170, 170, 170, 170},
00354 { 170, 170, 170, 170, 170}
00355 },
00356 /* ??..?? */
00357 {{ 170, 170, 170, 170, 170},
00358 { 170, 170, 170, 170, 170},
00359 { 170, 170, 170, 170, 170},
00360 { 170, 170, 170, 170, 170},
00361 { 170, 170, 170, 170, 170}
```

```

00362 }
00363 }
00364 };
00365
00366 PRIVATE int int11_H_184[NBPAIRS+1][NBPAIRS+1][5][5] =
00367 /* GC..GC */
00368 { /* noPair */ {{{0}}},
00369 { /* noPair */ {{0}},
00370 { { 0, 0, 0, 0, 0},
00371 { 0, 0, 0, 0, 0},
00372 { 0, 0, 0, 0, 0},
00373 { 0, 0, 0, 0, 0},
00374 { 0, 0, 0, 0, 0}},
00375 /* GC..CG */
00376 { { 0, 0, 0, 0, 0},
00377 { 0, 0, 0, 0, 0},
00378 { 0, 0, 0, 0, 0},
00379 { 0, 0, 0, 0, 0},
00380 { 0, 0, 0, 0, 0}},
00381 /* GC..GU */
00382 { { 0, 0, 0, 0, 0},
00383 { 0, 0, 0, 0, 0},
00384 { 0, 0, 0, 0, 0},
00385 { 0, 0, 0, 0, 0},
00386 { 0, 0, 0, 0, 0}},
00387 /* GC..UG */
00388 { { 0, 0, 0, 0, 0},
00389 { 0, 0, 0, 0, 0},
00390 { 0, 0, 0, 0, 0},
00391 { 0, 0, 0, 0, 0},
00392 { 0, 0, 0, 0, 0}},
00393 /* GC..AU */
00394 { { 0, 0, 0, 0, 0},
00395 { 0, 0, 0, 0, 0},
00396 { 0, 0, 0, 0, 0},
00397 { 0, 0, 0, 0, 0},
00398 { 0, 0, 0, 0, 0}},
00399 /* GC..UA */
00400 { { 0, 0, 0, 0, 0},
00401 { 0, 0, 0, 0, 0},
00402 { 0, 0, 0, 0, 0},
00403 { 0, 0, 0, 0, 0},
00404 { 0, 0, 0, 0, 0}},
00405 /* GC.. @ */
00406 { { 0, 0, 0, 0, 0},
00407 { 0, 0, 0, 0, 0},
00408 { 0, 0, 0, 0, 0},
00409 { 0, 0, 0, 0, 0},
00410 { 0, 0, 0, 0, 0}},
00411 /* CG..GC */
00412 { /* noPair */ {{0}},
00413 { { 0, 0, 0, 0, 0},
00414 { 0, 0, 0, 0, 0},
00415 { 0, 0, 0, 0, 0},
00416 { 0, 0, 0, 0, 0},
00417 { 0, 0, 0, 0, 0}},
00418 /* CG..CG */
00419 { { 0, 0, 0, 0, 0},
00420 { 0, 0, 0, 0, 0},
00421 { 0, 0, 0, 0, 0},
00422 { 0, 0, 0, 0, 0},
00423 { 0, 0, 0, 0, 0}},
00424 /* CG..GU */
00425 { { 0, 0, 0, 0, 0},
00426 { 0, 0, 0, 0, 0},
00427 { 0, 0, 0, 0, 0},
00428 { 0, 0, 0, 0, 0},
00429 { 0, 0, 0, 0, 0}},
00430 /* CG..UG */
00431 { { 0, 0, 0, 0, 0},
00432 { 0, 0, 0, 0, 0},
00433 { 0, 0, 0, 0, 0},
00434 { 0, 0, 0, 0, 0},
00435 { 0, 0, 0, 0, 0}},
00436 /* CG..AU */
00437 { { 0, 0, 0, 0, 0},
00438 { 0, 0, 0, 0, 0},
00439 { 0, 0, 0, 0, 0},
00440 { 0, 0, 0, 0, 0},
00441 { 0, 0, 0, 0, 0}},
00442 /* CG..UA */
00443 { { 0, 0, 0, 0, 0},
00444 { 0, 0, 0, 0, 0},
00445 { 0, 0, 0, 0, 0},
00446 { 0, 0, 0, 0, 0},
00447 { 0, 0, 0, 0, 0}},
00448 /* CG.. @ */

```

```
00449 { { 0, 0, 0, 0, 0, 0},
00450 { 0, 0, 0, 0, 0, 0},
00451 { 0, 0, 0, 0, 0, 0},
00452 { 0, 0, 0, 0, 0, 0},
00453 { 0, 0, 0, 0, 0, 0}},
00454 /* GU..GC */
00455 { /* noPair */ {{0}},
00456 { { 0, 0, 0, 0, 0, 0},
00457 { 0, 0, 0, 0, 0, 0},
00458 { 0, 0, 0, 0, 0, 0},
00459 { 0, 0, 0, 0, 0, 0},
00460 { 0, 0, 0, 0, 0, 0}},
00461 /* GU..CG */
00462 { { 0, 0, 0, 0, 0, 0},
00463 { 0, 0, 0, 0, 0, 0},
00464 { 0, 0, 0, 0, 0, 0},
00465 { 0, 0, 0, 0, 0, 0},
00466 { 0, 0, 0, 0, 0, 0}},
00467 /* GU..GU */
00468 { { 0, 0, 0, 0, 0, 0},
00469 { 0, 0, 0, 0, 0, 0},
00470 { 0, 0, 0, 0, 0, 0},
00471 { 0, 0, 0, 0, 0, 0},
00472 { 0, 0, 0, 0, 0, 0}},
00473 /* GU..UG */
00474 { { 0, 0, 0, 0, 0, 0},
00475 { 0, 0, 0, 0, 0, 0},
00476 { 0, 0, 0, 0, 0, 0},
00477 { 0, 0, 0, 0, 0, 0},
00478 { 0, 0, 0, 0, 0, 0}},
00479 /* GU..AU */
00480 { { 0, 0, 0, 0, 0, 0},
00481 { 0, 0, 0, 0, 0, 0},
00482 { 0, 0, 0, 0, 0, 0},
00483 { 0, 0, 0, 0, 0, 0},
00484 { 0, 0, 0, 0, 0, 0}},
00485 /* GU..UA */
00486 { { 0, 0, 0, 0, 0, 0},
00487 { 0, 0, 0, 0, 0, 0},
00488 { 0, 0, 0, 0, 0, 0},
00489 { 0, 0, 0, 0, 0, 0},
00490 { 0, 0, 0, 0, 0, 0}},
00491 /* GU.. @ */
00492 { { 0, 0, 0, 0, 0, 0},
00493 { 0, 0, 0, 0, 0, 0},
00494 { 0, 0, 0, 0, 0, 0},
00495 { 0, 0, 0, 0, 0, 0},
00496 { 0, 0, 0, 0, 0, 0}},
00497 /* UG..GC */
00498 { /* noPair */ {{0}},
00499 { { 0, 0, 0, 0, 0, 0},
00500 { 0, 0, 0, 0, 0, 0},
00501 { 0, 0, 0, 0, 0, 0},
00502 { 0, 0, 0, 0, 0, 0},
00503 { 0, 0, 0, 0, 0, 0}},
00504 /* UG..CG */
00505 { { 0, 0, 0, 0, 0, 0},
00506 { 0, 0, 0, 0, 0, 0},
00507 { 0, 0, 0, 0, 0, 0},
00508 { 0, 0, 0, 0, 0, 0},
00509 { 0, 0, 0, 0, 0, 0}},
00510 /* UG..GU */
00511 { { 0, 0, 0, 0, 0, 0},
00512 { 0, 0, 0, 0, 0, 0},
00513 { 0, 0, 0, 0, 0, 0},
00514 { 0, 0, 0, 0, 0, 0},
00515 { 0, 0, 0, 0, 0, 0}},
00516 /* UG..UG */
00517 { { 0, 0, 0, 0, 0, 0},
00518 { 0, 0, 0, 0, 0, 0},
00519 { 0, 0, 0, 0, 0, 0},
00520 { 0, 0, 0, 0, 0, 0},
00521 { 0, 0, 0, 0, 0, 0}},
00522 /* UG..AU */
00523 { { 0, 0, 0, 0, 0, 0},
00524 { 0, 0, 0, 0, 0, 0},
00525 { 0, 0, 0, 0, 0, 0},
00526 { 0, 0, 0, 0, 0, 0},
00527 { 0, 0, 0, 0, 0, 0}},
00528 /* UG..UA */
00529 { { 0, 0, 0, 0, 0, 0},
00530 { 0, 0, 0, 0, 0, 0},
00531 { 0, 0, 0, 0, 0, 0},
00532 { 0, 0, 0, 0, 0, 0},
00533 { 0, 0, 0, 0, 0, 0}},
00534 /* UG.. @ */
00535 { { 0, 0, 0, 0, 0, 0},
```

```

00536 { 0, 0, 0, 0, 0},
00537 { 0, 0, 0, 0, 0},
00538 { 0, 0, 0, 0, 0},
00539 { 0, 0, 0, 0, 0}},
00540 /* AU..GC */
00541 { /* noPair */ {{0}},
00542 { { 0, 0, 0, 0, 0},
00543 { 0, 0, 0, 0, 0},
00544 { 0, 0, 0, 0, 0},
00545 { 0, 0, 0, 0, 0},
00546 { 0, 0, 0, 0, 0}},
00547 /* AU..CG */
00548 { { 0, 0, 0, 0, 0},
00549 { 0, 0, 0, 0, 0},
00550 { 0, 0, 0, 0, 0},
00551 { 0, 0, 0, 0, 0},
00552 { 0, 0, 0, 0, 0}},
00553 /* AU..GU */
00554 { { 0, 0, 0, 0, 0},
00555 { 0, 0, 0, 0, 0},
00556 { 0, 0, 0, 0, 0},
00557 { 0, 0, 0, 0, 0},
00558 { 0, 0, 0, 0, 0}},
00559 /* AU..UG */
00560 { { 0, 0, 0, 0, 0},
00561 { 0, 0, 0, 0, 0},
00562 { 0, 0, 0, 0, 0},
00563 { 0, 0, 0, 0, 0},
00564 { 0, 0, 0, 0, 0}},
00565 /* AU..AU */
00566 { { 0, 0, 0, 0, 0},
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00568 { 0, 0, 0, 0, 0},
00569 { 0, 0, 0, 0, 0},
00570 { 0, 0, 0, 0, 0}},
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00576 { 0, 0, 0, 0, 0}},
00577 /* AU.. @ */
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00583 /* UA..GC */
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00595 { 0, 0, 0, 0, 0}},
00596 /* UA..GU */
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00602 /* UA..UG */
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00607 { 0, 0, 0, 0, 0}},
00608 /* UA..AU */
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00610 { 0, 0, 0, 0, 0},
00611 { 0, 0, 0, 0, 0},
00612 { 0, 0, 0, 0, 0},
00613 { 0, 0, 0, 0, 0}},
00614 /* UA..UA */
00615 { { 0, 0, 0, 0, 0},
00616 { 0, 0, 0, 0, 0},
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00618 { 0, 0, 0, 0, 0},
00619 { 0, 0, 0, 0, 0}},
00620 /* UA.. @ */
00621 { { 0, 0, 0, 0, 0},
00622 { 0, 0, 0, 0, 0},

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00623 { 0, 0, 0, 0, 0},
00624 { 0, 0, 0, 0, 0},
00625 { 0, 0, 0, 0, 0}}},
00626 /* @..GC */
00627 { /* noPair */ {{0}},
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00633 /* @..CG */
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00638 { 0, 0, 0, 0, 0}},
00639 /* @..GU */
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00650 { 0, 0, 0, 0, 0}},
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00665 { 0, 0, 0, 0, 0},
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00667 { 0, 0, 0, 0, 0},
00668 { 0, 0, 0, 0, 0}}}}};
00669
00670 PRIVATE int int21_37_184[NBPAIRS+1][NBPAIRS+1][5][5][5] =
00671 { /* noPair */ {{{0}}}},
00672 { /* noPair */ {{{0}}}},
00673 {
00674 /* CG.@..GC */
00675 {{ 550, 550, 550, 550, 550},{ 550, 550, 550, 550, 550},{ 550, 550, 550, 550, 550},{ 550, 550, 550,
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00676 /* CG.A..GC */
00677 {{ 550, 550, 550, 550, 550},{ 550, 240, 220, 160, 400},{ 550, 210, 170, 160, 400},{ 550, 100, 60,
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00680 /* CG.G..GC */
00681 {{ 550, 550, 550, 550, 550},{ 550, 170, 400, 80, 400},{ 550, 400, 400, 400, 400},{ 550, 80, 400,
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00682 /* CG.U..GC */
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00685 {
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00704 /* CG.G..UG */
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00706 /* CG.U..UG */
00707 {{ 550, 550, 550, 550, 550},{ 550, 480, 480, 480, 480},{ 550, 480, 300, 480, 210},{ 550, 480, 480,
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00708 },
00709 {
00710 /* CG.@..GU */
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00712 /* CG.A..GU */
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00714 /* CG.C..GU */
00715 {{ 550, 550, 550, 550, 550},{ 550, 310, 300, 480, 300},{ 550, 300, 330, 480, 300},{ 550, 480, 480,
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00716 /* CG.G..GU */
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00718 /* CG.U..GU */
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00721 {
00722 /* CG.@..UA */
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00724 /* CG.A..UA */
00725 {{ 550, 550, 550, 550, 550},{ 550, 320, 300, 240, 480},{ 550, 290, 250, 240, 480},{ 550, 180, 140,
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00726 /* CG.C..UA */
00727 {{ 550, 550, 550, 550, 550},{ 550, 310, 300, 480, 300},{ 550, 300, 330, 480, 300},{ 550, 480, 480,
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00728 /* CG.G..UA */
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00745 {
00746 /* CG.@..?? */
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00750 /* CG.C..?? */
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00766 /* GC.G..GC */
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00786 /* GC.A..UG */
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00790 /* GC.G..UG */
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00792 /* GC.U..UG */
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00795 {
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00802 /* GC.G..GU */
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00804 /* GC.U..GU */
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00807 {
00808 /* GC.@..UA */
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00810 /* GC.A..UA */
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00812 /* GC.C..UA */
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00814 /* GC.G..UA */
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00820 /* GC.@..AU */
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00822 /* GC.A..AU */
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00836 /* GC.C..?? */
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00886 /* GU.C..GU */
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00888 /* GU.G..GU */
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00898 /* GU.C..UA */
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00908 /* GU.A..AU */
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00912 /* GU.G..AU */
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00914 /* GU.U..AU */
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00920 /* GU.A..?? */
00921 {{ 550, 550, 550, 550, 550},{ 550, 550, 550, 550, 550},{ 550, 550, 550, 550, 550},{ 550, 550, 550,
00922 /* GU.C..?? */
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01284 /* CG..C..CG */
01285 {{ DEF, -519, -449, -519, -669},{ -999, -1468, -1398, -1468, -1618},{ -499, -968, -898, -968, -1118},{
-989, -1458, -1388, -1458, -1608},{ -789, -1258, -1188, -1258, -1408}},
01286 /* CG..G..CG */
01287 {{ DEF, -939, -939, -939, -939},{ -1079, -1968, -1968, -1968, -1968},{ -569, -1458, -1458, -1458, -1458},{
-989, -1878, -1878, -1878, -1878},{ -859, -1748, -1748, -1748, -1748}},
01288 /* CG..U..CG */
01289 {{ DEF, -809, -739, -809, -859},{ -1079, -1838, -1768, -1838, -1888},{ -719, -1478, -1408, -1478, -1528},{
-989, -1748, -1678, -1748, -1798},{ -909, -1668, -1598, -1668, -1718}}
01290 },
01291 {
01292 /* CG..@..GC */
01293 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01294 /* CG..A..GC */
01295 {{ DEF, -1029, -949, -1029, -1029},{ -569, -1548, -1468, -1548, -1548},{ -769, -1748, -1668, -1748, -1748},{
-759, -1738, -1658, -1738, -1738},{ -549, -1528, -1448, -1528, -1528}},
01296 /* CG..C..GC */
01297 {{ DEF, -519, -449, -519, -669},{ -929, -1398, -1328, -1398, -1548},{ -359, -828, -758, -828, -978},{
-789, -1258, -1188, -1258, -1408},{ -549, -1018, -948, -1018, -1168}},
01298 /* CG..G..GC */
01299 {{ DEF, -939, -939, -939, -939},{ -609, -1498, -1498, -1498, -1498},{ -359, -1248, -1248, -1248, -1248},{
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01300 /* CG..U..GC */
01301 {{ DEF, -809, -739, -809, -859},{ -929, -1688, -1618, -1688, -1738},{ -439, -1198, -1128, -1198, -1248},{
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01302 },
01303 {
01304 /* CG..@..GU */
01305 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01306 /* CG..A..GU */
01307 {{ DEF, -1029, -949, -1029, -1029},{ -479, -1458, -1378, -1458, -1458},{ -309, -1288, -1208, -1288, -1288},{
-389, -1368, -1288, -1368, -1368},{ -379, -1358, -1278, -1358, -1358}},
01308 /* CG..C..GU */
01309 {{ DEF, -519, -449, -519, -669},{ -649, -1118, -1048, -1118, -1268},{ -289, -758, -688, -758, -908},{
-739, -1208, -1138, -1208, -1358},{ -379, -848, -778, -848, -998}},
01310 /* CG..G..GU */
01311 {{ DEF, -939, -939, -939, -939},{ -649, -1538, -1538, -1538, -1538},{ -289, -1178, -1178, -1178, -1178},{
-739, -1628, -1628, -1628, -1628},{ -379, -1268, -1268, -1268, -1268}},
01312 /* CG..U..GU */
01313 {{ DEF, -809, -739, -809, -859},{ -649, -1408, -1338, -1408, -1458},{ -289, -1048, -978, -1048, -1098},{
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01314 },
01315 {
01316 /* CG..@..UG */
01317 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01318 /* CG..A..UG */

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01319 {{ DEF,-1029, -949,-1029,-1029},{ -769,-1748,-1668,-1748,-1748},{ -529,-1508,-1428,-1508,-1508},{
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01320 /* CG.C..UG */
01321 {{ DEF, -519, -449, -519, -669},{ -839,-1308,-1238,-1308,-1458},{ -529, -998, -928, -998,-1148},{
-859,-1328,-1258,-1328,-1478},{ -489, -958, -888, -958,-1108}},
01322 /* CG.G..UG */
01323 {{ DEF, -939, -939, -939, -939},{-1009,-1898,-1898,-1898,-1898},{ -409,-1298,-1298,-1298,-1298},{
-969,-1858,-1858,-1858,-1858},{ -599,-1488,-1488,-1488,-1488}},
01324 /* CG.U..UG */
01325 {{ DEF, -809, -739, -809, -859},{ -859,-1618,-1548,-1618,-1668},{ -529,-1288,-1218,-1288,-1338},{
-859,-1618,-1548,-1618,-1668},{ -409,-1168,-1098,-1168,-1218}}
01326 },
01327 {
01328 /* CG.@..AU */
01329 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01330 /* CG.A..AU */
01331 {{ DEF,-1029, -949,-1029,-1029},{ -479,-1458,-1378,-1458,-1458},{ -309,-1288,-1208,-1288,-1288},{
-389,-1368,-1288,-1368,-1368},{ -379,-1358,-1278,-1358,-1358}},
01332 /* CG.C..AU */
01333 {{ DEF, -519, -449, -519, -669},{ -649,-1118,-1048,-1118,-1268},{ -289, -758, -688, -758, -908},{
-739,-1208,-1138,-1208,-1358},{ -379, -848, -778, -848, -998}},
01334 /* CG.G..AU */
01335 {{ DEF, -939, -939, -939, -939},{ -649,-1538,-1538,-1538,-1538},{ -289,-1178,-1178,-1178,-1178},{
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01336 /* CG.U..AU */
01337 {{ DEF, -809, -739, -809, -859},{ -649,-1408,-1338,-1408,-1458},{ -289,-1048, -978,-1048,-1098},{
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01338 },
01339 {
01340 /* CG.@..UA */
01341 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01342 /* CG.A..UA */
01343 {{ DEF,-1029, -949,-1029,-1029},{ -449,-1428,-1348,-1428,-1428},{ -479,-1458,-1378,-1458,-1458},{
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01344 /* CG.C..UA */
01345 {{ DEF, -519, -449, -519, -669},{ -679,-1148,-1078,-1148,-1298},{ -559,-1028, -958,-1028,-1178},{
-729,-1198,-1128,-1198,-1348},{ -189, -658, -588, -658, -808}},
01346 /* CG.G..UA */
01347 {{ DEF, -939, -939, -939, -939},{ -939,-1828,-1828,-1828,-1828},{ -249,-1138,-1138,-1138,-1138},{
-939,-1828,-1828,-1828,-1828},{ -329,-1218,-1218,-1218,-1218}},
01348 /* CG.U..UA */
01349 {{ DEF, -809, -739, -809, -859},{ -639,-1398,-1328,-1398,-1448},{ -229, -988, -918, -988,-1038},{
-729,-1488,-1418,-1488,-1538},{ -190, -949, -879, -949, -999}}
01350 },
01351 {
01352 /* CG.@.. @ */
01353 {{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01354 /* CG.A.. @ */
01355 {{ -100,-1079, -999,-1079,-1079},{ -100,-1079, -999,-1079,-1079},{ -100,-1079, -999,-1079,-1079},{
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01356 /* CG.C.. @ */
01357 {{ -100,-569, -499, -569, -719},{ -100, -569, -499, -569, -719},{ -100, -569, -499, -569, -719},{
-100, -569, -499, -569, -719},{ -100, -569, -499, -569, -719}},
01358 /* CG.G.. @ */
01359 {{ -100,-989, -989, -989, -989},{ -100, -989, -989, -989, -989},{ -100, -989, -989, -989, -989},{
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01360 /* CG.U.. @ */
01361 {{ -100,-859, -789, -859, -909},{ -100, -859, -789, -859, -909},{ -100, -859, -789, -859, -909},{
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01362 }
01363 },
01364 { /* noPair */ {{0}}},
01365 {
01366 /* GC.@..CG */
01367 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01368 /* GC.A..CG */
01369 {{ DEF, -519, -879, -559, -879},{-1079,-1548,-1908,-1588,-1908},{ -569,-1038,-1398,-1078,-1398},{
-989,-1458,-1818,-1498,-1818},{ -859,-1328,-1688,-1368,-1688}},
01370 /* GC.C..CG */
01371 {{ DEF, -719, -309, -309, -389},{ -999,-1668,-1258,-1258,-1338},{ -499,-1168, -758, -758, -838},{
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01372 /* GC.G..CG */
01373 {{ DEF, -709, -739, -619, -739},{-1079,-1738,-1768,-1648,-1768},{ -569,-1228,-1258,-1138,-1258},{
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01374 /* GC.U..CG */
01375 {{ DEF, -499, -499, -499, -569},{-1079,-1528,-1528,-1528,-1598},{ -719,-1168,-1168,-1168,-1238},{
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01376 },
01377 {
01378 /* GC.@..GC */
01379 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01380 /* GC.A..GC */

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01381 {{ DEF, -519, -879, -559, -879},{ -569,-1038,-1398,-1078,-1398},{ -769,-1238,-1598,-1278,-1598},{  
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01383 {{ DEF, -719, -309, -309, -389},{ -929,-1598,-1188,-1188,-1268},{ -359,-1028, -618, -618, -698},{  
01384 /* GC.G..GC */  
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01386 /* GC.U..GC */  
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01389 {  
01390 /* GC.@..GU */  
01391 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{  
01392 /* GC.A..GU */  
01393 {{ DEF, -519, -879, -559, -879},{ -479, -948,-1308, -988,-1308},{ -309, -778,-1138, -818,-1138},{  
01394 /* GC.C..GU */  
01395 {{ DEF, -719, -309, -309, -389},{ -649,-1318, -908, -908, -988},{ -289, -958, -548, -548, -628},{  
01396 /* GC.G..GU */  
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01398 /* GC.U..GU */  
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01401 {  
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01403 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{  
01404 /* GC.A..UG */  
01405 {{ DEF, -519, -879, -559, -879},{ -769,-1238,-1598,-1278,-1598},{ -529, -998,-1358,-1038,-1358},{  
01406 /* GC.C..UG */  
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01408 /* GC.G..UG */  
01409 {{ DEF, -709, -739, -619, -739},{ -1009,-1668,-1698,-1578,-1698},{ -409,-1068,-1098, -978,-1098},{  
01410 /* GC.U..UG */  
01411 {{ DEF, -499, -499, -499, -569},{ -859,-1308,-1308,-1308,-1378},{ -529, -978, -978, -978,-1048},{  
01412 },  
01413 {  
01414 /* GC.@..AU */  
01415 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{  
01416 /* GC.A..AU */  
01417 {{ DEF, -519, -879, -559, -879},{ -479, -948,-1308, -988,-1308},{ -309, -778,-1138, -818,-1138},{  
01418 /* GC.C..AU */  
01419 {{ DEF, -719, -309, -309, -389},{ -649,-1318, -908, -908, -988},{ -289, -958, -548, -548, -628},{  
01420 /* GC.G..AU */  
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01424 },  
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01428 /* GC.A..UA */  
01429 {{ DEF, -519, -879, -559, -879},{ -449, -918,-1278, -958,-1278},{ -479, -948,-1308, -988,-1308},{  
01430 /* GC.C..UA */  
01431 {{ DEF, -719, -309, -309, -389},{ -679,-1348, -938, -938,-1018},{ -559,-1228, -818, -818, -898},{  
01432 /* GC.G..UA */  
01433 {{ DEF, -709, -739, -619, -739},{ -939,-1598,-1628,-1508,-1628},{ -249, -908, -938, -818, -938},{  
01434 /* GC.U..UA */  
01435 {{ DEF, -499, -499, -499, -569},{ -639,-1088,-1088,-1088,-1158},{ -229, -678, -678, -678, -748},{  
01436 },  
01437 {  
01438 /* GC.@.. @ */  
01439 {{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{  
01440 /* GC.A.. @ */  
01441 {{ -100, -569, -929, -609, -929},{ -100, -569, -929, -609, -929},{ -100, -569, -929, -609, -929},{  
01442 {{ -100, -569, -929, -609, -929},{ -100, -569, -929, -609, -929},{ -100, -569, -929, -609, -929},{
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01442 /* GC.C.. @ */
01443 {{ -100, -769, -359, -359, -439},{ -100, -769, -359, -359, -439},{ -100, -769, -359, -359, -439},{
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01444 /* GC.G.. @ */
01445 {{ -100, -759, -789, -669, -789},{ -100, -759, -789, -669, -789},{ -100, -759, -789, -669, -789},{
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01446 /* GC.U.. @ */
01447 {{ -100, -549, -549, -549, -619},{ -100, -549, -549, -549, -619},{ -100, -549, -549, -549, -619},{
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01448 }
01449 },
01450 { /* noPair */ {{0}}},
01451 {
01452 /* GU.@..CG */
01453 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01454 /* GU.A..CG */
01455 {{ DEF, -429, -599, -599, -599},{ -1079,-1458,-1628,-1628,-1628},{ -569, -948,-1118,-1118,-1118},{
-989,-1368,-1538,-1538,-1538},{ -859,-1238,-1408,-1408,-1408}},
01456 /* GU.C..CG */
01457 {{ DEF, -259, -239, -239, -239},{ -999,-1208,-1188,-1188,-1188},{ -499, -708, -688, -688, -688},{
-989,-1198,-1178,-1178,-1178},{ -789, -998, -978, -978, -978}},
01458 /* GU.G..CG */
01459 {{ DEF, -339, -689, -689, -689},{ -1079,-1368,-1718,-1718,-1718},{ -569, -858,-1208,-1208,-1208},{
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01460 /* GU.U..CG */
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01462 },
01463 {
01464 /* GU.@..GC */
01465 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01466 /* GU.A..GC */
01467 {{ DEF, -429, -599, -599, -599},{ -569, -948,-1118,-1118,-1118},{ -769,-1148,-1318,-1318,-1318},{
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01468 /* GU.C..GC */
01469 {{ DEF, -259, -239, -239, -239},{ -929,-1138,-1118,-1118,-1118},{ -359, -568, -548, -548, -548},{
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01470 /* GU.G..GC */
01471 {{ DEF, -339, -689, -689, -689},{ -609, -898,-1248,-1248,-1248},{ -359, -648, -998, -998, -998},{
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01472 /* GU.U..GC */
01473 {{ DEF, -329, -329, -329, -329},{ -929,-1208,-1208,-1208,-1208},{ -439, -718, -718, -718, -718},{
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01474 },
01475 {
01476 /* GU.@..GU */
01477 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01478 /* GU.A..GU */
01479 {{ DEF, -429, -599, -599, -599},{ -479, -858,-1028,-1028,-1028},{ -309, -688, -858, -858, -858},{
-389, -768, -938, -938, -938},{ -379, -758, -928, -928, -928}},
01480 /* GU.C..GU */
01481 {{ DEF, -259, -239, -239, -239},{ -649, -858, -838, -838, -838},{ -289, -498, -478, -478, -478},{
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01482 /* GU.G..GU */
01483 {{ DEF, -339, -689, -689, -689},{ -649, -938,-1288,-1288,-1288},{ -289, -578, -928, -928, -928},{
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01484 /* GU.U..GU */
01485 {{ DEF, -329, -329, -329, -329},{ -649, -928, -928, -928, -928},{ -289, -568, -568, -568, -568},{
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01486 },
01487 {
01488 /* GU.@..UG */
01489 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01490 /* GU.A..UG */
01491 {{ DEF, -429, -599, -599, -599},{ -769,-1148,-1318,-1318,-1318},{ -529, -908,-1078,-1078,-1078},{
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01492 /* GU.C..UG */
01493 {{ DEF, -259, -239, -239, -239},{ -839,-1048,-1028,-1028,-1028},{ -529, -738, -718, -718, -718},{
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01494 /* GU.G..UG */
01495 {{ DEF, -339, -689, -689, -689},{ -1009,-1298,-1648,-1648,-1648},{ -409, -698,-1048,-1048,-1048},{
-969,-1258,-1608,-1608,-1608},{ -599, -888,-1238,-1238,-1238}},
01496 /* GU.U..UG */
01497 {{ DEF, -329, -329, -329, -329},{ -859,-1138,-1138,-1138,-1138},{ -529, -808, -808, -808, -808},{
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01498 },
01499 {
01500 /* GU.@..AU */
01501 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01502 /* GU.A..AU */
01503 {{ DEF, -429, -599, -599, -599},{ -479, -858,-1028,-1028,-1028},{ -309, -688, -858, -858, -858},{
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01504 /* GU.C..AU */
01505 {{ DEF, -259, -239, -239, -239},{ -649, -858, -838, -838},{ -289, -498, -478, -478},{
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01506 /* GU.G..AU */
01507 {{ DEF, -339, -689, -689, -689},{ -649, -938, -1288, -1288},{ -289, -578, -928, -928},{
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01508 /* GU.U..AU */
01509 {{ DEF, -329, -329, -329, -329},{ -649, -928, -928, -928},{ -289, -568, -568, -568},{
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01510 },
01511 {
01512 /* GU.@..UA */
01513 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01514 /* GU.A..UA */
01515 {{ DEF, -429, -599, -599, -599},{ -449, -828, -998, -998, -998},{ -479, -858, -1028, -1028, -1028},{
-429, -808, -978, -978, -978},{ -329, -708, -878, -878, -878}},
01516 /* GU.C..UA */
01517 {{ DEF, -259, -239, -239, -239},{ -679, -888, -868, -868, -868},{ -559, -768, -748, -748, -748},{
-729, -938, -918, -918, -918},{ -189, -398, -378, -378, -378}},
01518 /* GU.G..UA */
01519 {{ DEF, -339, -689, -689, -689},{ -939, -1228, -1578, -1578, -1578},{ -249, -538, -888, -888, -888},{
-939, -1228, -1578, -1578, -1578},{ -329, -618, -968, -968, -968}},
01520 /* GU.U..UA */
01521 {{ DEF, -329, -329, -329, -329},{ -639, -918, -918, -918, -918},{ -229, -508, -508, -508, -508},{
-729, -1008, -1008, -1008, -1008},{ -190, -469, -469, -469, -469}}
01522 },
01523 {
01524 /* GU.@.. @ */
01525 {{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01526 /* GU.A.. @ */
01527 {{ -100, -479, -649, -649, -649},{ -100, -479, -649, -649, -649},{ -100, -479, -649, -649, -649},{
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01528 /* GU.C.. @ */
01529 {{ -100, -309, -289, -289, -289},{ -100, -309, -289, -289, -289},{ -100, -309, -289, -289, -289},{
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01530 /* GU.G.. @ */
01531 {{ -100, -389, -739, -739, -739},{ -100, -389, -739, -739, -739},{ -100, -389, -739, -739, -739},{
-100, -389, -739, -739, -739},{ -100, -389, -739, -739, -739}},
01532 /* GU.U.. @ */
01533 {{ -100, -379, -379, -379, -379},{ -100, -379, -379, -379, -379},{ -100, -379, -379, -379, -379},{
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01534 },
01535 },
01536 { /* noPair */ {{0}}},
01537 {
01538 /* UG.@..CG */
01539 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01540 /* UG.A..CG */
01541 {{ DEF, -719, -789, -959, -809},{ -1079, -1748, -1818, -1988, -1838},{ -569, -1238, -1308, -1478, -1328},{
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01542 /* UG.C..CG */
01543 {{ DEF, -479, -479, -359, -479},{ -999, -1428, -1428, -1308, -1428},{ -499, -928, -928, -808, -928},{
-989, -1418, -1418, -1298, -1418},{ -789, -1218, -1218, -1098, -1218}},
01544 /* UG.G..CG */
01545 {{ DEF, -659, -809, -919, -809},{ -1079, -1688, -1838, -1948, -1838},{ -569, -1178, -1328, -1438, -1328},{
-989, -1598, -1748, -1858, -1748},{ -859, -1468, -1618, -1728, -1618}},
01546 /* UG.U..CG */
01547 {{ DEF, -549, -439, -549, -359},{ -1079, -1578, -1468, -1578, -1388},{ -719, -1218, -1108, -1218, -1028},{
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01548 },
01549 {
01550 /* UG.@..GC */
01551 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01552 /* UG.A..GC */
01553 {{ DEF, -719, -789, -959, -809},{ -569, -1238, -1308, -1478, -1328},{ -769, -1438, -1508, -1678, -1528},{
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01554 /* UG.C..GC */
01555 {{ DEF, -479, -479, -359, -479},{ -929, -1358, -1358, -1238, -1358},{ -359, -788, -788, -668, -788},{
-789, -1218, -1218, -1098, -1218},{ -549, -978, -978, -858, -978}},
01556 /* UG.G..GC */
01557 {{ DEF, -659, -809, -919, -809},{ -609, -1218, -1368, -1478, -1368},{ -359, -968, -1118, -1228, -1118},{
-669, -1278, -1428, -1538, -1428},{ -549, -1158, -1308, -1418, -1308}},
01558 /* UG.U..GC */
01559 {{ DEF, -549, -439, -549, -359},{ -929, -1428, -1318, -1428, -1238},{ -439, -938, -828, -938, -748},{
-789, -1288, -1178, -1288, -1098},{ -619, -1118, -1008, -1118, -928}}
01560 },
01561 {
01562 /* UG.@..GU */
01563 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01564 /* UG.A..GU */
01565 {{ DEF, -719, -789, -959, -809},{ -479, -1148, -1218, -1388, -1238},{ -309, -978, -1048, -1218, -1068},{
-389, -1058, -1128, -1298, -1148},{ -379, -1048, -1118, -1288, -1138}},

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01566 /* UG.C..GU */
01567 {{ DEF, -479, -479, -359, -479},{ -649,-1078,-1078, -958,-1078},{ -289, -718, -718, -598, -718},{
-739,-1168,-1168,-1048,-1168},{ -379, -808, -808, -688, -808}},
01568 /* UG.G..GU */
01569 {{ DEF, -659, -809, -919, -809},{ -649,-1258,-1408,-1518,-1408},{ -289, -898,-1048,-1158,-1048},{
-739,-1348,-1498,-1608,-1498},{ -379, -988,-1138,-1248,-1138}},
01570 /* UG.U..GU */
01571 {{ DEF, -549, -439, -549, -359},{ -649,-1148,-1038,-1148, -958},{ -289, -788, -678, -788, -598},{
-739,-1238,-1128,-1238,-1048},{ -379, -878, -768, -878, -688}}
01572 },
01573 {
01574 /* UG.@..UG */
01575 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01576 /* UG.A..UG */
01577 {{ DEF, -719, -789, -959, -809},{ -769,-1438,-1508,-1678,-1528},{ -529,-1198,-1268,-1438,-1288},{
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01578 /* UG.C..UG */
01579 {{ DEF, -479, -479, -359, -479},{ -839,-1268,-1268,-1148,-1268},{ -529, -958, -958, -838, -958},{
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01580 /* UG.G..UG */
01581 {{ DEF, -659, -809, -919, -809},{-1009,-1618,-1768,-1878,-1768},{ -409,-1018,-1168,-1278,-1168},{
-969,-1578,-1728,-1838,-1728},{ -599,-1208,-1358,-1468,-1358}},
01582 /* UG.U..UG */
01583 {{ DEF, -549, -439, -549, -359},{ -859,-1358,-1248,-1358,-1168},{ -529,-1028, -918,-1028, -838},{
-859,-1358,-1248,-1358,-1168},{ -409, -908, -798, -908, -718}}
01584 },
01585 {
01586 /* UG.@..AU */
01587 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01588 /* UG.A..AU */
01589 {{ DEF, -719, -789, -959, -809},{ -479,-1148,-1218,-1388,-1238},{ -309, -978,-1048,-1218,-1068},{
-389,-1058,-1128,-1298,-1148},{ -379,-1048,-1118,-1288,-1138}},
01590 /* UG.C..AU */
01591 {{ DEF, -479, -479, -359, -479},{ -649,-1078,-1078, -958,-1078},{ -289, -718, -718, -598, -718},{
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01592 /* UG.G..AU */
01593 {{ DEF, -659, -809, -919, -809},{ -649,-1258,-1408,-1518,-1408},{ -289, -898,-1048,-1158,-1048},{
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01594 /* UG.U..AU */
01595 {{ DEF, -549, -439, -549, -359},{ -649,-1148,-1038,-1148, -958},{ -289, -788, -678, -788, -598},{
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01596 },
01597 {
01598 /* UG.@..UA */
01599 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01600 /* UG.A..UA */
01601 {{ DEF, -719, -789, -959, -809},{ -449,-1118,-1188,-1358,-1208},{ -479,-1148,-1218,-1388,-1238},{
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01602 /* UG.C..UA */
01603 {{ DEF, -479, -479, -359, -479},{ -679,-1108,-1108, -988,-1108},{ -559, -988, -988, -868, -988},{
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01604 /* UG.G..UA */
01605 {{ DEF, -659, -809, -919, -809},{ -939,-1548,-1698,-1808,-1698},{ -249, -858,-1008,-1118,-1008},{
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01606 /* UG.U..UA */
01607 {{ DEF, -549, -439, -549, -359},{ -639,-1138,-1028,-1138, -948},{ -229, -728, -618, -728, -538},{
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01608 },
01609 {
01610 /* UG.@.. @ */
01611 {{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01612 /* UG.A.. @ */
01613 {{ -100, -769, -839,-1009, -859},{ -100, -769, -839,-1009, -859},{ -100, -769, -839,-1009, -859},{
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01614 /* UG.C.. @ */
01615 {{ -100, -529, -529, -409, -529},{ -100, -529, -529, -409, -529},{ -100, -529, -529, -409, -529},{
-100, -529, -529, -409, -529},{ -100, -529, -529, -409, -529}},
01616 /* UG.G.. @ */
01617 {{ -100, -709, -859, -969, -859},{ -100, -709, -859, -969, -859},{ -100, -709, -859, -969, -859},{
-100, -709, -859, -969, -859},{ -100, -709, -859, -969, -859}},
01618 /* UG.U.. @ */
01619 {{ -100, -599, -489, -599, -409},{ -100, -599, -489, -599, -409},{ -100, -599, -489, -599, -409},{
-100, -599, -489, -599, -409},{ -100, -599, -489, -599, -409}}
01620 },
01621 },
01622 { /* noPair */ {{0}}},
01623 {
01624 /* AU.@..CG */
01625 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01626 /* AU.A..CG */
01627 {{ DEF, -429, -599, -599, -599},{-1079,-1458,-1628,-1628,-1628},{ -569, -948,-1118,-1118,-1118},{
-989,-1368,-1538,-1538,-1538},{ -859,-1238,-1408,-1408,-1408}},

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01628 /* AU.C..CG */
01629 {{ DEF, -259, -239, -239, -239},{ -999,-1208,-1188,-1188},{ -499, -708, -688, -688},{
-989,-1198,-1178,-1178,-1178},{ -789, -998, -978, -978, -978}},
01630 /* AU.G..CG */
01631 {{ DEF, -339, -689, -689, -689},{-1079,-1368,-1718,-1718,-1718},{ -569, -858,-1208,-1208,-1208},{
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01632 /* AU.U..CG */
01633 {{ DEF, -329, -329, -329, -329},{-1079,-1358,-1358,-1358,-1358},{ -719, -998, -998, -998, -998},{
-989,-1268,-1268,-1268,-1268},{ -909,-1188,-1188,-1188,-1188}}
01634 },
01635 {
01636 /* AU.@..GC */
01637 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01638 /* AU.A..GC */
01639 {{ DEF, -429, -599, -599, -599},{ -569, -948,-1118,-1118,-1118},{ -769,-1148,-1318,-1318,-1318},{
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01640 /* AU.C..GC */
01641 {{ DEF, -259, -239, -239, -239},{ -929,-1138,-1118,-1118,-1118},{ -359, -568, -548, -548, -548},{
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01642 /* AU.G..GC */
01643 {{ DEF, -339, -689, -689, -689},{ -609, -898,-1248,-1248,-1248},{ -359, -648, -998, -998, -998},{
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01644 /* AU.U..GC */
01645 {{ DEF, -329, -329, -329, -329},{ -929,-1208,-1208,-1208,-1208},{ -439, -718, -718, -718, -718},{
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01646 },
01647 {
01648 /* AU.@..GU */
01649 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01650 /* AU.A..GU */
01651 {{ DEF, -429, -599, -599, -599},{ -479, -858,-1028,-1028,-1028},{ -309, -688, -858, -858, -858},{
-389, -768, -938, -938, -938},{ -379, -758, -928, -928, -928}},
01652 /* AU.C..GU */
01653 {{ DEF, -259, -239, -239, -239},{ -649, -858, -838, -838, -838},{ -289, -498, -478, -478, -478},{
-739, -948, -928, -928, -928},{ -379, -588, -568, -568, -568}},
01654 /* AU.G..GU */
01655 {{ DEF, -339, -689, -689, -689},{ -649, -938,-1288,-1288,-1288},{ -289, -578, -928, -928, -928},{
-739,-1028,-1378,-1378,-1378},{ -379, -668,-1018,-1018,-1018}},
01656 /* AU.U..GU */
01657 {{ DEF, -329, -329, -329, -329},{ -649, -928, -928, -928, -928},{ -289, -568, -568, -568, -568},{
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01658 },
01659 {
01660 /* AU.@..UG */
01661 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01662 /* AU.A..UG */
01663 {{ DEF, -429, -599, -599, -599},{ -769,-1148,-1318,-1318,-1318},{ -529, -908,-1078,-1078,-1078},{
-709,-1088,-1258,-1258,-1258},{ -599, -978, -1148, -1148, -1148}},
01664 /* AU.C..UG */
01665 {{ DEF, -259, -239, -239, -239},{ -839,-1048,-1028,-1028,-1028},{ -529, -738, -718, -718, -718},{
-859,-1068,-1048,-1048,-1048},{ -489, -698, -678, -678, -678}},
01666 /* AU.G..UG */
01667 {{ DEF, -339, -689, -689, -689},{-1009,-1298,-1648,-1648,-1648},{ -409, -698,-1048,-1048,-1048},{
-969,-1258,-1608,-1608,-1608},{ -599, -888,-1238,-1238,-1238}},
01668 /* AU.U..UG */
01669 {{ DEF, -329, -329, -329, -329},{ -859,-1138,-1138,-1138,-1138},{ -529, -808, -808, -808, -808},{
-859,-1138,-1138,-1138,-1138},{ -409, -688, -688, -688, -688}}
01670 },
01671 {
01672 /* AU.@..AU */
01673 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01674 /* AU.A..AU */
01675 {{ DEF, -429, -599, -599, -599},{ -479, -858,-1028,-1028,-1028},{ -309, -688, -858, -858, -858},{
-389, -768, -938, -938, -938},{ -379, -758, -928, -928, -928}},
01676 /* AU.C..AU */
01677 {{ DEF, -259, -239, -239, -239},{ -649, -858, -838, -838, -838},{ -289, -498, -478, -478, -478},{
-739, -948, -928, -928, -928},{ -379, -588, -568, -568, -568}},
01678 /* AU.G..AU */
01679 {{ DEF, -339, -689, -689, -689},{ -649, -938,-1288,-1288,-1288},{ -289, -578, -928, -928, -928},{
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01680 /* AU.U..AU */
01681 {{ DEF, -329, -329, -329, -329},{ -649, -928, -928, -928, -928},{ -289, -568, -568, -568, -568},{
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01682 },
01683 {
01684 /* AU.@..UA */
01685 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01686 /* AU.A..UA */
01687 {{ DEF, -429, -599, -599, -599},{ -449, -828, -998, -998, -998},{ -479, -858,-1028,-1028,-1028},{
-429, -808, -978, -978, -978},{ -329, -708, -878, -878, -878}},
01688 /* AU.C..UA */
01689 {{ DEF, -259, -239, -239, -239},{ -679, -888, -868, -868, -868},{ -559, -768, -748, -748, -748},{
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-729, -938, -918, -918, -918},{ -189, -398, -378, -378, -378}},
01690 /* AU.G..UA */
01691 {{ DEF, -339, -689, -689, -689},{ -939,-1228,-1578,-1578,-1578},{ -249, -538, -888, -888, -888},{
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01692 /* AU.U..UA */
01693 {{ DEF, -329, -329, -329, -329},{ -639, -918, -918, -918, -918},{ -229, -508, -508, -508, -508},{
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01694 },
01695 {
01696 /* AU.@.. @ */
01697 {{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01698 /* AU.A.. @ */
01699 {{ -100, -479, -649, -649, -649},{ -100, -479, -649, -649, -649},{ -100, -479, -649, -649, -649},{
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01700 /* AU.C.. @ */
01701 {{ -100, -309, -289, -289, -289},{ -100, -309, -289, -289, -289},{ -100, -309, -289, -289, -289},{
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01702 /* AU.G.. @ */
01703 {{ -100, -389, -739, -739, -739},{ -100, -389, -739, -739, -739},{ -100, -389, -739, -739, -739},{
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01704 /* AU.U.. @ */
01705 {{ -100, -379, -379, -379, -379},{ -100, -379, -379, -379, -379},{ -100, -379, -379, -379, -379},{
-100, -379, -379, -379, -379},{ -100, -379, -379, -379, -379}}
01706 },
01707 },
01708 { /* noPair */ {{0}}},
01709 {
01710 /* UA.@..CG */
01711 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01712 /* UA.A..CG */
01713 {{ DEF, -399, -629, -889, -589},{-1079,-1428,-1658,-1918,-1618},{ -569, -918,-1148,-1408,-1108},{
-989,-1338,-1568,-1828,-1528},{ -859,-1208,-1438,-1698,-1398}},
01714 /* UA.C..CG */
01715 {{ DEF, -429, -509, -199, -179},{ -999,-1378,-1458,-1148,-1128},{ -499, -878, -958, -648, -628},{
-989,-1368,-1448,-1138,-1118},{ -789,-1168,-1248, -938, -918}},
01716 /* UA.G..CG */
01717 {{ DEF, -379, -679, -889, -679},{-1079,-1408,-1708,-1918,-1708},{ -569, -898,-1198,-1408,-1198},{
-989,-1318,-1618,-1828,-1618},{ -859,-1188,-1488,-1698,-1488}},
01718 /* UA.U..CG */
01719 {{ DEF, -279, -139, -279, -140},{-1079,-1308,-1168,-1308,-1169},{ -719, -948, -808, -948, -809},{
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01720 },
01721 {
01722 /* UA.@..GC */
01723 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01724 /* UA.A..GC */
01725 {{ DEF, -399, -629, -889, -589},{ -569, -918,-1148,-1408,-1108},{ -769,-1118,-1348,-1608,-1308},{
-759,-1108,-1338,-1598,-1298},{ -549, -898,-1128,-1388,-1088}},
01726 /* UA.C..GC */
01727 {{ DEF, -429, -509, -199, -179},{ -929,-1308,-1388,-1078,-1058},{ -359, -738, -818, -508, -488},{
-789,-1168,-1248, -938, -918},{ -549, -928,-1008, -698, -678}},
01728 /* UA.G..GC */
01729 {{ DEF, -379, -679, -889, -679},{ -609, -938,-1238,-1448,-1238},{ -359, -688, -988,-1198, -988},{
-669, -998,-1298,-1508,-1298},{ -549, -878,-1178,-1388,-1178}},
01730 /* UA.U..GC */
01731 {{ DEF, -279, -139, -279, -140},{ -929,-1158,-1018,-1158,-1019},{ -439, -668, -528, -668, -529},{
-789,-1018, -878,-1018, -879},{ -619, -848, -708, -848, -709}}
01732 },
01733 {
01734 /* UA.@..GU */
01735 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01736 /* UA.A..GU */
01737 {{ DEF, -399, -629, -889, -589},{ -479, -828,-1058,-1318,-1018},{ -309, -658, -888,-1148, -848},{
-389, -738, -968,-1228, -928},{ -379, -728, -958,-1218, -918}},
01738 /* UA.C..GU */
01739 {{ DEF, -429, -509, -199, -179},{ -649,-1028,-1108, -798, -778},{ -289, -668, -748, -438, -418},{
-739,-1118,-1198, -888, -868},{ -379, -758, -838, -528, -508}},
01740 /* UA.G..GU */
01741 {{ DEF, -379, -679, -889, -679},{ -649, -978,-1278,-1488,-1278},{ -289, -618, -918,-1128, -918},{
-739,-1068,-1368,-1578,-1368},{ -379, -708,-1008,-1218,-1008}},
01742 /* UA.U..GU */
01743 {{ DEF, -279, -139, -279, -140},{ -649, -878, -738, -878, -739},{ -289, -518, -378, -518, -379},{
-739, -968, -828, -968, -829},{ -379, -608, -468, -608, -469}}
01744 },
01745 {
01746 /* UA.@..UG */
01747 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF}},
01748 /* UA.A..UG */
01749 {{ DEF, -399, -629, -889, -589},{ -769,-1118,-1348,-1608,-1308},{ -529, -878,-1108,-1368,-1068},{
-709,-1058,-1288,-1548,-1248},{ -599, -948,-1178,-1438,-1138}},
01750 /* UA.C..UG */
01751 {{ DEF, -429, -509, -199, -179},{ -839,-1218,-1298, -988, -968},{ -529, -908, -988, -678, -658},{

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-859,-1238,-1318,-1008, -988},{ -489, -868, -948, -638, -618}},
01752 /* UA.G..UG */
01753 {{ DEF, -379, -679, -889, -679},{-1009,-1338,-1638,-1848,-1638},{ -409, -738,-1038,-1248,-1038},{
-969,-1298,-1598,-1808,-1598},{ -599, -928,-1228,-1438,-1228}},
01754 /* UA.U..UG */
01755 {{ DEF, -279, -139, -279, -140},{ -859,-1088, -948,-1088, -949},{ -529, -758, -618, -758, -619},{
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01756 },
01757 {
01758 /* UA.@..AU */
01759 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01760 /* UA.A..AU */
01761 {{ DEF, -399, -629, -889, -589},{ -479, -828,-1058,-1318,-1018},{ -309, -658, -888,-1148, -848},{
-389, -738, -968,-1228, -928},{ -379, -728, -958,-1218, -918}},
01762 /* UA.C..AU */
01763 {{ DEF, -429, -509, -199, -179},{ -649,-1028,-1108, -798, -778},{ -289, -668, -748, -438, -418},{
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01764 /* UA.G..AU */
01765 {{ DEF, -379, -679, -889, -679},{ -649, -978,-1278,-1488,-1278},{ -289, -618, -918,-1128, -918},{
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01766 /* UA.U..AU */
01767 {{ DEF, -279, -139, -279, -140},{ -649, -878, -738, -878, -739},{ -289, -518, -378, -518, -379},{
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01768 },
01769 {
01770 /* UA.@..UA */
01771 {{ 0, 0, 0, 0, 0},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01772 /* UA.A..UA */
01773 {{ DEF, -399, -629, -889, -589},{ -449, -798,-1028,-1288, -988},{ -479, -828,-1058,-1318,-1018},{
-429, -778,-1008,-1268, -968},{ -329, -678, -908,-1168, -868}},
01774 /* UA.C..UA */
01775 {{ DEF, -429, -509, -199, -179},{ -679,-1058,-1138, -828, -808},{ -559, -938,-1018, -708, -688},{
-729,-1108,-1188, -878, -858},{ -189, -568, -648, -338, -318}},
01776 /* UA.G..UA */
01777 {{ DEF, -379, -679, -889, -679},{ -939,-1268,-1568,-1778,-1568},{ -249, -578, -878,-1088, -878},{
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01778 /* UA.U..UA */
01779 {{ DEF, -279, -139, -279, -140},{ -639, -868, -728, -868, -729},{ -229, -458, -318, -458, -319},{
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01781 {
01782 /* UA.@.. @ */
01783 {{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{ DEF, DEF, DEF, DEF, DEF},{
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01784 /* UA.A.. @ */
01785 {{ -100, -449, -679, -939, -639},{ -100, -449, -679, -939, -639},{ -100, -449, -679, -939, -639},{
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01786 /* UA.C.. @ */
01787 {{ -100, -479, -559, -249, -229},{ -100, -479, -559, -249, -229},{ -100, -479, -559, -249, -229},{
-100, -479, -559, -249, -229},{ -100, -479, -559, -249, -229}},
01788 /* UA.G.. @ */
01789 {{ -100, -429, -729, -939, -729},{ -100, -429, -729, -939, -729},{ -100, -429, -729, -939, -729},{
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01790 /* UA.U.. @ */
01791 {{ -100, -329, -189, -329, -190},{ -100, -329, -189, -329, -190},{ -100, -329, -189, -329, -190},{
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01792 }
01793 },
01794 { /* noPair */ {{0}}},
01795 {
01796 /* @.@..CG */
01797 {{ DEF, DEF, DEF, DEF, DEF},{ -100, -100, -100, -100, -100},{ -100, -100, -100, -100, -100},{
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01799 {{ DEF, DEF, DEF, DEF, DEF},{-1079,-1079,-1079,-1079,-1079},{ -569, -569, -569, -569, -569},{
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01800 /* @.C..CG */
01801 {{ DEF, DEF, DEF, DEF, DEF},{ -999, -999, -999, -999, -999},{ -499, -499, -499, -499, -499},{
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01806 },
01807 {
01808 /* @.@..GC */
01809 {{ DEF, DEF, DEF, DEF, DEF},{ -100, -100, -100, -100, -100},{ -100, -100, -100, -100, -100},{
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01810 /* @.A..GC */
01811 {{ DEF, DEF, DEF, DEF, DEF},{ -569, -569, -569, -569, -569},{ -769, -769, -769, -769, -769},{
-759, -759, -759, -759, -759},{ -549, -549, -549, -549, -549}},
01812 /* @.C..GC */
01813 {{ DEF, DEF, DEF, DEF, DEF},{ -929, -929, -929, -929, -929},{ -359, -359, -359, -359, -359},{

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-789, -789, -789, -789, -789},{ -549, -549, -549, -549, -549}},
01814 /* @.G..GC */
01815 {{ DEF, DEF, DEF, DEF, DEF},{ -609, -609, -609, -609, -609},{ -359, -359, -359, -359, -359},{
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01816 /* @.U..GC */
01817 {{ DEF, DEF, DEF, DEF, DEF},{ -929, -929, -929, -929, -929},{ -439, -439, -439, -439, -439},{
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01818 },
01819 {
01820 /* @.E..GU */
01821 {{ DEF, DEF, DEF, DEF, DEF},{ -100, -100, -100, -100, -100},{ -100, -100, -100, -100, -100},{
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01822 /* @.A..GU */
01823 {{ DEF, DEF, DEF, DEF, DEF},{ -479, -479, -479, -479, -479},{ -309, -309, -309, -309, -309},{
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01824 /* @.C..GU */
01825 {{ DEF, DEF, DEF, DEF, DEF},{ -649, -649, -649, -649, -649},{ -289, -289, -289, -289, -289},{
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01826 /* @.G..GU */
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01828 /* @.U..GU */
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01830 },
01831 {
01832 /* @.E..UG */
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01834 /* @.A..UG */
01835 {{ DEF, DEF, DEF, DEF, DEF},{ -769, -769, -769, -769, -769},{ -529, -529, -529, -529, -529},{
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01836 /* @.C..UG */
01837 {{ DEF, DEF, DEF, DEF, DEF},{ -839, -839, -839, -839, -839},{ -529, -529, -529, -529, -529},{
-859, -859, -859, -859, -859},{ -489, -489, -489, -489, -489}},
01838 /* @.G..UG */
01839 {{ DEF, DEF, DEF, DEF, DEF},{ -1009, -1009, -1009, -1009, -1009},{ -409, -409, -409, -409, -409},{
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01840 /* @.U..UG */
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01842 },
01843 {
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01846 /* @.A..AU */
01847 {{ DEF, DEF, DEF, DEF, DEF},{ -479, -479, -479, -479, -479},{ -309, -309, -309, -309, -309},{
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01848 /* @.C..AU */
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01850 /* @.G..AU */
01851 {{ DEF, DEF, DEF, DEF, DEF},{ -649, -649, -649, -649, -649},{ -289, -289, -289, -289, -289},{
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01853 {{ DEF, DEF, DEF, DEF, DEF},{ -649, -649, -649, -649, -649},{ -289, -289, -289, -289, -289},{
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01854 },
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01856 /* @.E..UA */
01857 {{ DEF, DEF, DEF, DEF, DEF},{ -100, -100, -100, -100, -100},{ -100, -100, -100, -100, -100},{
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01858 /* @.A..UA */
01859 {{ DEF, DEF, DEF, DEF, DEF},{ -449, -449, -449, -449, -449},{ -479, -479, -479, -479, -479},{
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01860 /* @.C..UA */
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01863 {{ DEF, DEF, DEF, DEF, DEF},{ -939, -939, -939, -939, -939},{ -249, -249, -249, -249, -249},{
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01864 /* @.U..UA */
01865 {{ DEF, DEF, DEF, DEF, DEF},{ -639, -639, -639, -639, -639},{ -229, -229, -229, -229, -229},{
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01866 },
01867 {
01868 /* @.E..@ */
01869 {{ -100, -100, -100, -100, -100},{ -100, -100, -100, -100, -100},{ -100, -100, -100, -100, -100},{
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01870 /* @.A..@ */
01871 {{ -100, -100, -100, -100, -100},{ -100, -100, -100, -100, -100},{ -100, -100, -100, -100, -100},{
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01872 /* @.C..@ */
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01874 /* @.G..@ */
```

```
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01878 }
01879 }
01880 };
01881
01882 PRIVATE int int22_37_184[NBPAIRS+1][NBPAIRS+1][5][5][5][5] = {
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01884 { /* noPair */ {{{0}}}},
01885 /* CG...CG */
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01921 },
01922 /* CG...GC */
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Generated on Mon Nov 25 2024 11:54:11 for RNAlib-2.1.9h by Doxygen

Generated on Mon Nov 25 2024 11:54:11 for RNAlib-2.1.9h by Doxygen

Generated on Mon Nov 25 2024 11:54:11 for RNAlib-2.1.9h by Doxygen

[illegible]

Generated on Mon Nov 25 2024 11:54:11 for RNAlib-2.1.9h by Doxygen

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03715 { /* noPair */ {{{{{0}}}}},
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03717 { { { 0, 0, 0, 0, 0},
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03721 { DEF, DEF, DEF, DEF, DEF}},
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03727 { -809, -809, -809, -809, -809}},
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03731 { -449, -449, -449, -449, -449},
03732 { -939, -939, -939, -939, -939},
03733 { -739, -739, -739, -739, -739}},
03734 /* CG.@G..CG */
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03737 { -519, -519, -519, -519, -519},
03738 { -939, -939, -939, -939, -939},
03739 { -809, -809, -809, -809, -809}},
03740 /* CG.@U..CG */
03741 { { 0, 0, 0, 0, 0},
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03744 { -939, -939, -939, -939, -939},
03745 { -859, -859, -859, -859, -859}},
03746 /* CG.@@..CG */
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03757 { -859,-1838,-1758,-1838,-1838}},
03758 /* CG.AC..CG */
03759 {{{ DEF,-1029, -949,-1029,-1029},
03760 { -999,-1978,-1898,-1978,-1978},
03761 { -499,-1478,-1398,-1478,-1478},
03762 { -989,-1968,-1888,-1968,-1968},
03763 { -789,-1768,-1688,-1768,-1768}},
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03765 {{{ DEF,-1029, -949,-1029,-1029},
03766 { -1079,-2058,-1978,-2058,-2058},
03767 { -569,-1548,-1468,-1548,-1548},
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03769 { -859,-1838,-1758,-1838,-1838}},
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03772 { -1079,-2058,-1978,-2058,-2058},
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03774 { -989,-1968,-1888,-1968,-1968},
03775 { -909,-1888,-1808,-1888,-1888}},
03776 /* CG.C@..CG */
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03778 { -100, -569, -499, -569, -719},
03779 { -100, -569, -499, -569, -719},

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03787 { -859,-1328,-1258,-1328,-1478}},
03788 /* CG.CC..CG */
03789 {{ DEF, -519, -449, -519, -669},
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03791 { -499, -968, -898, -968,-1118},
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03793 { -789,-1258,-1188,-1258,-1408}},
03794 /* CG.CG..CG */
03795 {{ DEF, -519, -449, -519, -669},
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03797 { -569,-1038, -968,-1038,-1188},
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03799 { -859,-1328,-1258,-1328,-1478}},
03800 /* CG.CU..CG */
03801 {{ DEF, -519, -449, -519, -669},
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03804 { -989,-1458,-1388,-1458,-1608},
03805 { -909,-1378,-1308,-1378,-1528}}},
03806 /* CG.G@..CG */
03807 {{{ DEF, -939, -939, -939, -939},
03808 { -100, -989, -989, -989, -989},
03809 { -100, -989, -989, -989, -989},
03810 { -100, -989, -989, -989, -989},
03811 { -100, -989, -989, -989, -989}},
03812 /* CG.GA..CG */
03813 {{ DEF, -939, -939, -939, -939},
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03815 { -569,-1458,-1458,-1458,-1458},
03816 { -989,-1878,-1878,-1878,-1878},
03817 { -859,-1748,-1748,-1748,-1748}},
03818 /* CG.GC..CG */
03819 {{ DEF, -939, -939, -939, -939},
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03821 { -499,-1388,-1388,-1388,-1388},
03822 { -989,-1878,-1878,-1878,-1878},
03823 { -789,-1678,-1678,-1678,-1678}},
03824 /* CG.GG..CG */
03825 {{ DEF, -939, -939, -939, -939},
03826 {-1079,-1968,-1968,-1968,-1968},
03827 { -569,-1458,-1458,-1458,-1458},
03828 { -989,-1878,-1878,-1878,-1878},
03829 { -859,-1748,-1748,-1748,-1748}},
03830 /* CG.GU..CG */
03831 {{ DEF, -939, -939, -939, -939},
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03834 { -989,-1878,-1878,-1878,-1878},
03835 { -909,-1798,-1798,-1798,-1798}}},
03836 /* CG.U@..CG */
03837 {{{ DEF, -809, -739, -809, -859},
03838 { -100, -859, -789, -859, -909},
03839 { -100, -859, -789, -859, -909},
03840 { -100, -859, -789, -859, -909},
03841 { -100, -859, -789, -859, -909}},
03842 /* CG.UA..CG */
03843 {{ DEF, -809, -739, -809, -859},
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03846 { -989,-1748,-1678,-1748,-1798},
03847 { -859,-1618,-1548,-1618,-1668}},
03848 /* CG.UC..CG */
03849 {{ DEF, -809, -739, -809, -859},
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03854 /* CG.UG..CG */
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03857 { -569,-1328,-1258,-1328,-1378},
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03859 { -859,-1618,-1548,-1618,-1668}},
03860 /* CG.UU..CG */
03861 {{ DEF, -809, -739, -809, -859},
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03863 { -719,-1478,-1408,-1478,-1528},
03864 { -989,-1748,-1678,-1748,-1798},
03865 { -909,-1668,-1598,-1668,-1718}}}},
03866 /* CG.@@..GC */

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03869 { DEF, DEF, DEF, DEF, DEF},
03870 { DEF, DEF, DEF, DEF, DEF},
03871 { DEF, DEF, DEF, DEF, DEF}},
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03874 { -519, -519, -519, -519, -519},
03875 { -719, -719, -719, -719, -719},
03876 { -709, -709, -709, -709, -709},
03877 { -499, -499, -499, -499, -499}},
03878 /* CG.@C..GC */
03879 {{ 0, 0, 0, 0, 0},
03880 { -879, -879, -879, -879, -879},
03881 { -309, -309, -309, -309, -309},
03882 { -739, -739, -739, -739, -739},
03883 { -499, -499, -499, -499, -499}},
03884 /* CG.@G..GC */
03885 {{ 0, 0, 0, 0, 0},
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03889 { -499, -499, -499, -499, -499}},
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03891 {{ 0, 0, 0, 0, 0},
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03907 { -549, -1528, -1448, -1528, -1528}},
03908 /* CG.AC..GC */
03909 {{ DEF, -1029, -949, -1029, -1029},
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03914 /* CG.AG..GC */
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04028 /* CG.@C..GU */
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04295 { -529, -1288, -1218, -1288, -1338},
04296 { -709, -1468, -1398, -1468, -1518},
04297 { -599, -1358, -1288, -1358, -1408}},
04298 /* CG.UC..UG */
04299 {{ DEF, -809, -739, -809, -859},
04300 { -839, -1598, -1528, -1598, -1648},
04301 { -529, -1288, -1218, -1288, -1338},
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04302 { -859,-1618,-1548,-1618,-1668},
04303 { -489,-1248,-1178,-1248,-1298}},
04304 /* CG.UG..UG */
04305 {{ DEF, -809, -739, -809, -859},
04306 {-1009,-1768,-1698,-1768,-1818},
04307 { -409,-1168,-1098,-1168,-1218},
04308 { -969,-1728,-1658,-1728,-1778},
04309 { -599,-1358,-1288,-1358,-1408}},
04310 /* CG.UU..UG */
04311 {{ DEF, -809, -739, -809, -859},
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04313 { -529,-1288,-1218,-1288,-1338},
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04315 { -409,-1168,-1098,-1168,-1218}}}},
04316 /* CG.@@..AU */
04317 {{{ 0, 0, 0, 0, 0},
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04319 { DEF, DEF, DEF, DEF, DEF},
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04322 /* CG.@A..AU */
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04328 /* CG.@C..AU */
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04334 /* CG.@G..AU */
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04340 /* CG.@U..AU */
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04352 /* CG.AA..AU */
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04357 { -379,-1358,-1278,-1358,-1358}},
04358 /* CG.AC..AU */
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04363 { -379,-1358,-1278,-1358,-1358}},
04364 /* CG.AG..AU */
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04376 /* CG.C@..AU */
04377 {{{ DEF, -519, -449, -519, -669},
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04383 {{ DEF, -519, -449, -519, -669},
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04385 { -309, -778, -708, -778, -928},
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04387 { -379, -848, -778, -848, -998}},
04388 /* CG.CC..AU */

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04389 {{ DEF, -519, -449, -519, -669},
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04424 /* CG.GG..AU */
04425 {{ DEF, -939, -939, -939, -939},
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04436 /* CG.U@..AU */
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04466 /* CG.@@..UA */
04467 {{{ 0, 0, 0, 0, 0},
04468 { DEF, DEF, DEF, DEF, DEF},
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04472 /* CG.@A..UA */
04473 {{ 0, 0, 0, 0, 0},
04474 { -399,-399, -399, -399, -399},
04475 { -429, -429, -429, -429, -429},

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04478 /* CG.@C..UA */
04479 {{ 0, 0, 0, 0, 0},
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04482 { -679, -679, -679, -679, -679},
04483 { -139, -139, -139, -139, -139}},
04484 /* CG.@G..UA */
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04486 { -889, -889, -889, -889, -889},
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04514 /* CG.AG..UA */
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04543 { -189, -658, -588, -658, -808}},
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04562 /* CG.GA..UA */
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04604 /* CG.UG..UA */
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04723 { -100, -989, -989, -989, -989}},
04724 /* CG.GG.. @ */
04725 {{ -100, -989, -989, -989, -989},
04726 { -100, -989, -989, -989, -989},
04727 { -100, -989, -989, -989, -989},
04728 { -100, -989, -989, -989, -989},
04729 { -100, -989, -989, -989, -989}},
04730 /* CG.GU.. @ */
04731 {{{ -100, -989, -989, -989, -989},
04732 { -100, -989, -989, -989, -989},
04733 { -100, -989, -989, -989, -989},
04734 { -100, -989, -989, -989, -989},
04735 { -100, -989, -989, -989, -989}},
04736 /* CG.U@.. @ */
```

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04737 {{{ -100, -859, -789, -859, -909},
04738 { -100, -859, -789, -859, -909},
04739 { -100, -859, -789, -859, -909},
04740 { -100, -859, -789, -859, -909},
04741 { -100, -859, -789, -859, -909}},
04742 /* CG.UA.. @ */
04743 {{{ -100, -859, -789, -859, -909},
04744 { -100, -859, -789, -859, -909},
04745 { -100, -859, -789, -859, -909},
04746 { -100, -859, -789, -859, -909},
04747 { -100, -859, -789, -859, -909}},
04748 /* CG.UC.. @ */
04749 {{{ -100, -859, -789, -859, -909},
04750 { -100, -859, -789, -859, -909},
04751 { -100, -859, -789, -859, -909},
04752 { -100, -859, -789, -859, -909},
04753 { -100, -859, -789, -859, -909}},
04754 /* CG.UG.. @ */
04755 {{{ -100, -859, -789, -859, -909},
04756 { -100, -859, -789, -859, -909},
04757 { -100, -859, -789, -859, -909},
04758 { -100, -859, -789, -859, -909},
04759 { -100, -859, -789, -859, -909}},
04760 /* CG.UU.. @ */
04761 {{{ -100, -859, -789, -859, -909},
04762 { -100, -859, -789, -859, -909},
04763 { -100, -859, -789, -859, -909},
04764 { -100, -859, -789, -859, -909},
04765 { -100, -859, -789, -859, -909}}}},
04766 { /* noPair */ {{{{0}}}},
04767 /* GC.@@..CG */
04768 {{{{ 0, 0, 0, 0, 0},
04769 { DEF, DEF, DEF, DEF, DEF},
04770 { DEF, DEF, DEF, DEF, DEF},
04771 { DEF, DEF, DEF, DEF, DEF},
04772 { DEF, DEF, DEF, DEF, DEF}}},
04773 /* GC.@A..CG */
04774 {{{ 0, 0, 0, 0, 0},
04775 {-1029,-1029,-1029,-1029,-1029},
04776 {-519, -519, -519, -519, -519},
04777 {-939, -939, -939, -939, -939},
04778 {-809, -809, -809, -809, -809}},
04779 /* GC.@C..CG */
04780 {{{ 0, 0, 0, 0, 0},
04781 {-949, -949, -949, -949, -949},
04782 {-449, -449, -449, -449, -449},
04783 {-939, -939, -939, -939, -939},
04784 {-739, -739, -739, -739, -739}},
04785 /* GC.@G..CG */
04786 {{{ 0, 0, 0, 0, 0},
04787 {-1029,-1029,-1029,-1029,-1029},
04788 {-519, -519, -519, -519, -519},
04789 {-939, -939, -939, -939, -939},
04790 {-809, -809, -809, -809, -809}},
04791 /* GC.@U..CG */
04792 {{{ 0, 0, 0, 0, 0},
04793 {-1029,-1029,-1029,-1029,-1029},
04794 {-669, -669, -669, -669, -669},
04795 {-939, -939, -939, -939, -939},
04796 {-859, -859, -859, -859, -859}}}},
04797 /* GC.A@..CG */
04798 {{{ DEF, -519, -879, -559, -879},
04799 { -100, -569, -929, -609, -929},
04800 { -100, -569, -929, -609, -929},
04801 { -100, -569, -929, -609, -929},
04802 { -100, -569, -929, -609, -929}},
04803 /* GC.AA..CG */
04804 {{{ DEF, -519, -879, -559, -879},
04805 {-1079,-1548,-1908,-1588,-1908},
04806 {-569,-1038,-1398,-1078,-1398},
04807 {-989,-1458,-1818,-1498,-1818},
04808 {-859,-1328,-1688,-1368,-1688}},
04809 /* GC.AC..CG */
04810 {{{ DEF, -519, -879, -559, -879},
04811 {-999,-1468,-1828,-1508,-1828},
04812 {-499, -968,-1328,-1008,-1328},
04813 {-989,-1458,-1818,-1498,-1818},
04814 {-789,-1258,-1618,-1298,-1618}},
04815 /* GC.AG..CG */
04816 {{{ DEF, -519, -879, -559, -879},
04817 {-1079,-1548,-1908,-1588,-1908},
04818 {-569,-1038,-1398,-1078,-1398},
04819 {-989,-1458,-1818,-1498,-1818},
04820 {-859,-1328,-1688,-1368,-1688}},
04821 /* GC.AU..CG */
04822 {{{ DEF, -519, -879, -559, -879},
04823 {-1079,-1548,-1908,-1588,-1908},

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04824 { -719,-1188,-1548,-1228,-1548},
04825 { -989,-1458,-1818,-1498,-1818},
04826 { -909,-1378,-1738,-1418,-1738}},
04827 /* GC.C@.CG */
04828 {{ DEF, -719, -309, -309, -389},
04829 { -100, -769, -359, -359, -439},
04830 { -100, -769, -359, -359, -439},
04831 { -100, -769, -359, -359, -439},
04832 { -100, -769, -359, -359, -439}},
04833 /* GC.CA.CG */
04834 {{ DEF, -719, -309, -309, -389},
04835 {-1079,-1748,-1338,-1338,-1418},
04836 { -569,-1238, -828, -828, -908},
04837 { -989,-1658,-1248,-1248,-1328},
04838 { -859,-1528,-1118,-1118,-1198}},
04839 /* GC.CC.CG */
04840 {{ DEF, -719, -309, -309, -389},
04841 { -999,-1668,-1258,-1258,-1338},
04842 { -499,-1168, -758, -758, -838},
04843 { -989,-1658,-1248,-1248,-1328},
04844 { -789,-1458,-1048,-1048,-1128}},
04845 /* GC.CG.CG */
04846 {{ DEF, -719, -309, -309, -389},
04847 {-1079,-1748,-1338,-1338,-1418},
04848 { -569,-1238, -828, -828, -908},
04849 { -989,-1658,-1248,-1248,-1328},
04850 { -859,-1528,-1118,-1118,-1198}},
04851 /* GC.CU.CG */
04852 {{ DEF, -719, -309, -309, -389},
04853 {-1079,-1748,-1338,-1338,-1418},
04854 { -719,-1388, -978, -978,-1058},
04855 { -989,-1658,-1248,-1248,-1328},
04856 { -909,-1578,-1168,-1168,-1248}},
04857 /* GC.G@.CG */
04858 {{ DEF, -709, -739, -619, -739},
04859 { -100, -759, -789, -669, -789},
04860 { -100, -759, -789, -669, -789},
04861 { -100, -759, -789, -669, -789},
04862 { -100, -759, -789, -669, -789}},
04863 /* GC.GA.CG */
04864 {{ DEF, -709, -739, -619, -739},
04865 {-1079,-1738,-1768,-1648,-1768},
04866 { -569,-1228,-1258,-1138,-1258},
04867 { -989,-1648,-1678,-1558,-1678},
04868 { -859,-1518,-1548,-1428,-1548}},
04869 /* GC.GC.CG */
04870 {{ DEF, -709, -739, -619, -739},
04871 { -999,-1658,-1688,-1568,-1688},
04872 { -499,-1158,-1188,-1068,-1188},
04873 { -989,-1648,-1678,-1558,-1678},
04874 { -789,-1448,-1478,-1358,-1478}},
04875 /* GC.GG.CG */
04876 {{ DEF, -709, -739, -619, -739},
04877 {-1079,-1738,-1768,-1648,-1768},
04878 { -569,-1228,-1258,-1138,-1258},
04879 { -989,-1648,-1678,-1558,-1678},
04880 { -859,-1518,-1548,-1428,-1548}},
04881 /* GC.GU.CG */
04882 {{ DEF, -709, -739, -619, -739},
04883 {-1079,-1738,-1768,-1648,-1768},
04884 { -719,-1378,-1408,-1288,-1408},
04885 { -989,-1648,-1678,-1558,-3080},
04886 { -909,-1568,-1598,-1478,-1598}},
04887 /* GC.U@.CG */
04888 {{ DEF, -499, -499, -499, -569},
04889 { -100, -549, -549, -549, -619},
04890 { -100, -549, -549, -549, -619},
04891 { -100, -549, -549, -549, -619},
04892 { -100, -549, -549, -549, -619}},
04893 /* GC.UA.CG */
04894 {{ DEF, -499, -499, -499, -569},
04895 {-1079,-1528,-1528,-1528,-1598},
04896 { -569,-1018,-1018,-1018,-1088},
04897 { -989,-1438,-1438,-1438,-1508},
04898 { -859,-1308,-1308,-1308,-1378}},
04899 /* GC.UC.CG */
04900 {{ DEF, -499, -499, -499, -569},
04901 { -999,-1448,-1448,-1448,-1518},
04902 { -499, -948, -948, -948,-1018},
04903 { -989,-1438,-1438,-1438,-1508},
04904 { -789,-1238,-1238,-1238,-1308}},
04905 /* GC.UG.CG */
04906 {{ DEF, -499, -499, -499, -569},
04907 {-1079,-1528,-1528,-1528,-1598},
04908 { -569,-1018,-1018,-1018,-1088},
04909 { -989,-1438,-1438,-1438,-1508},
04910 { -859,-1308,-1308,-1308,-1378}},
```

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04911 /* GC.UU..CG */
04912 {{ DEF, -499, -499, -499, -569},
04913 {-1079,-1528,-1528,-1528,-1598},
04914 {-719,-1168,-1168,-1168,-1238},
04915 {-989,-1438,-1438,-1438,-1508},
04916 {-909,-1358,-1358,-1358,-1428}}},
04917 /* GC.@@..GC */
04918 {{{ 0, 0, 0, 0, 0},
04919 { DEF, DEF, DEF, DEF, DEF},
04920 { DEF, DEF, DEF, DEF, DEF},
04921 { DEF, DEF, DEF, DEF, DEF},
04922 { DEF, DEF, DEF, DEF, DEF}},
04923 /* GC.@A..GC */
04924 {{ 0, 0, 0, 0, 0},
04925 {-519, -519, -519, -519, -519},
04926 {-719, -719, -719, -719, -719},
04927 {-709, -709, -709, -709, -709},
04928 {-499, -499, -499, -499, -499}},
04929 /* GC.@C..GC */
04930 {{{ 0, 0, 0, 0, 0},
04931 {-879, -879, -879, -879, -879},
04932 {-309, -309, -309, -309, -309},
04933 {-739, -739, -739, -739, -739},
04934 {-499, -499, -499, -499, -499}},
04935 /* GC.@G..GC */
04936 {{{ 0, 0, 0, 0, 0},
04937 {-559, -559, -559, -559, -559},
04938 {-309, -309, -309, -309, -309},
04939 {-619, -619, -619, -619, -619},
04940 {-499, -499, -499, -499, -499}},
04941 /* GC.@U..GC */
04942 {{{ 0, 0, 0, 0, 0},
04943 {-879, -879, -879, -879, -879},
04944 {-389, -389, -389, -389, -389},
04945 {-739, -739, -739, -739, -739},
04946 {-569, -569, -569, -569, -569}}},
04947 /* GC.A@..GC */
04948 {{{ DEF, -519, -879, -559, -879},
04949 {-100, -569, -929, -609, -929},
04950 {-100, -569, -929, -609, -929},
04951 {-100, -569, -929, -609, -929},
04952 {-100, -569, -929, -609, -929}},
04953 /* GC.AA..GC */
04954 {{ DEF, -519, -879, -559, -879},
04955 {-569,-1038,-1398,-1078,-1398},
04956 {-769,-1238,-1598,-1278,-1598},
04957 {-759,-1228,-1588,-1268,-1588},
04958 {-549,-1018,-1378,-1058,-1378}},
04959 /* GC.AC..GC */
04960 {{ DEF, -519, -879, -559, -879},
04961 {-929,-1398,-1758,-1438,-1758},
04962 {-359, -828,-1188, -868,-1188},
04963 {-789,-1258,-1618,-1298,-1618},
04964 {-549,-1018,-1378,-1058,-1378}},
04965 /* GC.AG..GC */
04966 {{ DEF, -519, -879, -559, -879},
04967 {-609,-1078,-1438,-1118,-1438},
04968 {-359, -828,-1188, -868,-1188},
04969 {-669,-1138,-1498,-1178,-1498},
04970 {-549,-1018,-1378,-1058,-1378}},
04971 /* GC.AU..GC */
04972 {{ DEF, -519, -879, -559, -879},
04973 {-929,-1398,-1758,-1438,-1758},
04974 {-439, -908,-1268, -948,-1268},
04975 {-789,-1258,-1618,-1298,-1618},
04976 {-619,-1088,-1448,-1128,-1448}}},
04977 /* GC.C@..GC */
04978 {{{ DEF, -719, -309, -309, -389},
04979 {-100, -769, -359, -359, -439},
04980 {-100, -769, -359, -359, -439},
04981 {-100, -769, -359, -359, -439},
04982 {-100, -769, -359, -359, -439}},
04983 /* GC.CA..GC */
04984 {{ DEF, -719, -309, -309, -389},
04985 {-569,-1238, -828, -828, -908},
04986 {-769,-1438,-1028,-1028,-1108},
04987 {-759,-1428,-1018,-1018,-1098},
04988 {-549,-1218, -808, -808, -888}},
04989 /* GC.CC..GC */
04990 {{ DEF, -719, -309, -309, -389},
04991 {-929,-1598,-1188,-1188,-1268},
04992 {-359,-1028, -618, -618, -698},
04993 {-789,-1458,-1048,-1048,-1128},
04994 {-549,-1218, -808, -808, -888}},
04995 /* GC.CG..GC */
04996 {{ DEF, -719, -309, -309, -389},
04997 {-609,-1278, -868, -868, -948},

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04998 { -359,-1028, -618, -618, -698},
04999 { -669,-1338, -928, -928,-1008},
05000 { -549,-1218, -808, -808, -888}},
05001 /* GC.CU..GC */
05002 {{ DEF, -719, -309, -309, -389},
05003 { -929,-1598,-1188,-1188,-1268},
05004 { -439,-1108, -698, -698, -778},
05005 { -789,-1458,-1048,-1048,-1128},
05006 { -619,-1288, -878, -878, -958}}},
05007 /* GC.G@..GC */
05008 {{{ DEF, -709, -739, -619, -739},
05009 { -100, -759, -789, -669, -789},
05010 { -100, -759, -789, -669, -789},
05011 { -100, -759, -789, -669, -789},
05012 { -100, -759, -789, -669, -789}}},
05013 /* GC.GA..GC */
05014 {{ DEF, -709, -739, -619, -739},
05015 { -569,-1228,-1258,-1138,-1258},
05016 { -769,-1428,-1458,-1338,-1458},
05017 { -759,-1418,-1448,-1328,-1448},
05018 { -549,-1208,-1238,-1118,-1238}},
05019 /* GC.GC..GC */
05020 {{ DEF, -709, -739, -619, -739},
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05022 { -359,-1018,-1048, -928,-1048},
05023 { -789,-1448,-1478,-1358,-1478},
05024 { -549,-1208,-1238,-1118,-1238}},
05025 /* GC.GG..GC */
05026 {{ DEF, -709, -739, -619, -739},
05027 { -609,-1268,-1298,-1178,-1298},
05028 { -359,-1018,-1048, -928,-1048},
05029 { -669,-1328,-1358,-1238,-1358},
05030 { -549,-1208,-1238,-1118,-1238}},
05031 /* GC.GU..GC */
05032 {{{ DEF, -709, -739, -619, -739},
05033 { -929,-1588,-1618,-1498,-1618},
05034 { -439,-1098,-1128,-1008,-1128},
05035 { -789,-1448,-1478,-1358,-3080},
05036 { -619,-1278,-1308,-1188,-1308}}},
05037 /* GC.U@..GC */
05038 {{{ DEF, -499, -499, -499, -569},
05039 { -100, -549, -549, -549, -619},
05040 { -100, -549, -549, -549, -619},
05041 { -100, -549, -549, -549, -619},
05042 { -100, -549, -549, -549, -619}}},
05043 /* GC.UA..GC */
05044 {{ DEF, -499, -499, -499, -569},
05045 { -569,-1018,-1018,-1018,-1088},
05046 { -769,-1218,-1218,-1218,-1288},
05047 { -759,-1208,-1208,-1208,-1278},
05048 { -549, -998, -998, -998,-1068}},
05049 /* GC.UC..GC */
05050 {{ DEF, -499, -499, -499, -569},
05051 { -929,-1378,-1378,-1378,-1448},
05052 { -359, -808, -808, -808, -878},
05053 { -789,-1238,-1238,-1238,-1308},
05054 { -549, -998, -998, -998,-1068}},
05055 /* GC.UG..GC */
05056 {{ DEF, -499, -499, -499, -569},
05057 { -609,-1058,-1058,-1058,-1128},
05058 { -359, -808, -808, -808, -878},
05059 { -669,-1118,-1118,-1118,-1188},
05060 { -549, -998, -998, -998,-1068}},
05061 /* GC.UU..GC */
05062 {{ DEF, -499, -499, -499, -569},
05063 { -929,-1378,-1378,-1378,-1448},
05064 { -439, -888, -888, -888, -958},
05065 { -789,-1238,-1238,-1238,-1308},
05066 { -619,-1068,-1068,-1068,-1138}}},
05067 /* GC.@@..GU */
05068 {{{ 0, 0, 0, 0, 0},
05069 { DEF, DEF, DEF, DEF, DEF},
05070 { DEF, DEF, DEF, DEF, DEF},
05071 { DEF, DEF, DEF, DEF, DEF},
05072 { DEF, DEF, DEF, DEF, DEF}}},
05073 /* GC.@A..GU */
05074 {{ 0, 0, 0, 0, 0},
05075 { -429, -429, -429, -429, -429},
05076 { -259, -259, -259, -259, -259},
05077 { -339, -339, -339, -339, -339},
05078 { -329, -329, -329, -329, -329}},
05079 /* GC.@C..GU */
05080 {{ 0, 0, 0, 0, 0},
05081 { -599, -599, -599, -599, -599},
05082 { -239, -239, -239, -239, -239},
05083 { -689, -689, -689, -689, -689},
05084 { -329, -329, -329, -329, -329}},

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05085 /* GC.@G..GU */
05086 {{ 0, 0, 0, 0, 0},
05087 { -599, -599, -599, -599, -599},
05088 { -239, -239, -239, -239, -239},
05089 { -689, -689, -689, -689, -689},
05090 { -329, -329, -329, -329, -329}},
05091 /* GC.@U..GU */
05092 {{ 0, 0, 0, 0, 0},
05093 { -599, -599, -599, -599, -599},
05094 { -239, -239, -239, -239, -239},
05095 { -689, -689, -689, -689, -689},
05096 { -329, -329, -329, -329, -329}},
05097 /* GC.A@..GU */
05098 {{ DEF, -519, -879, -559, -879},
05099 { -100, -569, -929, -609, -929},
05100 { -100, -569, -929, -609, -929},
05101 { -100, -569, -929, -609, -929},
05102 { -100, -569, -929, -609, -929}},
05103 /* GC.AA..GU */
05104 {{ DEF, -519, -879, -559, -879},
05105 { -479, -948, -1308, -988, -1308},
05106 { -309, -778, -1138, -818, -1138},
05107 { -389, -858, -1218, -898, -1218},
05108 { -379, -848, -1208, -888, -1208}},
05109 /* GC.AC..GU */
05110 {{ DEF, -519, -879, -559, -879},
05111 { -649, -1118, -1478, -1158, -1478},
05112 { -289, -758, -1118, -798, -1118},
05113 { -739, -1208, -1568, -1248, -1568},
05114 { -379, -848, -1208, -888, -1208}},
05115 /* GC.AG..GU */
05116 {{ DEF, -519, -879, -559, -879},
05117 { -649, -1118, -1478, -1158, -1478},
05118 { -289, -758, -1118, -798, -1118},
05119 { -739, -1208, -1568, -1248, -1568},
05120 { -379, -848, -1208, -888, -1208}},
05121 /* GC.AU..GU */
05122 {{ DEF, -519, -879, -559, -879},
05123 { -649, -1118, -1478, -1158, -1478},
05124 { -289, -758, -1118, -798, -1118},
05125 { -739, -1208, -1568, -1248, -1568},
05126 { -379, -848, -1208, -888, -1208}},
05127 /* GC.C@..GU */
05128 {{ DEF, -719, -309, -309, -389},
05129 { -100, -769, -359, -359, -439},
05130 { -100, -769, -359, -359, -439},
05131 { -100, -769, -359, -359, -439},
05132 { -100, -769, -359, -359, -439}},
05133 /* GC.CA..GU */
05134 {{ DEF, -719, -309, -309, -389},
05135 { -479, -1148, -738, -738, -818},
05136 { -309, -978, -568, -568, -648},
05137 { -389, -1058, -648, -648, -728},
05138 { -379, -1048, -638, -638, -718}},
05139 /* GC.CC..GU */
05140 {{ DEF, -719, -309, -309, -389},
05141 { -649, -1318, -908, -908, -988},
05142 { -289, -958, -548, -548, -628},
05143 { -739, -1408, -998, -998, -1078},
05144 { -379, -1048, -638, -638, -718}},
05145 /* GC.CG..GU */
05146 {{ DEF, -719, -309, -309, -389},
05147 { -649, -1318, -908, -908, -988},
05148 { -289, -958, -548, -548, -628},
05149 { -739, -1408, -998, -998, -1078},
05150 { -379, -1048, -638, -638, -718}},
05151 /* GC.CU..GU */
05152 {{ DEF, -719, -309, -309, -389},
05153 { -649, -1318, -908, -908, -988},
05154 { -289, -958, -548, -548, -628},
05155 { -739, -1408, -998, -998, -1078},
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05575 { -729, -1198, -1558, -1238, -1558},
05576 { -190, -659, -1019, -699, -1019}},
05577 /* GC.C@..UA */
05578 {{ DEF, -719, -309, -309, -389},
05579 { -100, -769, -359, -359, -439},
05580 { -100, -769, -359, -359, -439},
05581 { -100, -769, -359, -359, -439},
05582 { -100, -769, -359, -359, -439}},
05583 /* GC.CA..UA */
05584 {{ DEF, -719, -309, -309, -389},
05585 { -449, -1118, -708, -708, -788},
05586 { -479, -1148, -738, -738, -818},
05587 { -429, -1098, -688, -688, -768},
05588 { -329, -998, -588, -588, -668}},
05589 /* GC.CC..UA */
05590 {{ DEF, -719, -309, -309, -389},
05591 { -679, -1348, -938, -938, -1018},
05592 { -559, -1228, -818, -818, -898},
05593 { -729, -1398, -988, -988, -1068},
05594 { -189, -858, -448, -448, -528}},
05595 /* GC.CG..UA */
05596 {{ DEF, -719, -309, -309, -389},
05597 { -939, -1608, -1198, -1198, -1278},
05598 { -249, -918, -508, -508, -588},
05599 { -939, -1608, -1198, -1198, -1278},
06000 { -329, -998, -588, -588, -668}},
06001 /* GC.CU..UA */
06002 {{ DEF, -719, -309, -309, -389},
06003 { -639, -1308, -898, -898, -978},
06004 { -229, -898, -488, -488, -568},
06005 { -729, -1398, -988, -988, -1068},
06006 { -190, -859, -449, -449, -529}},

```

```

05607 /* GC.G@..UA */
05608 {{ DEF, -709, -739, -619, -739},
05609 { -100, -759, -789, -669, -789},
05610 { -100, -759, -789, -669, -789},
05611 { -100, -759, -789, -669, -789},
05612 { -100, -759, -789, -669, -789}},
05613 /* GC.GA..UA */
05614 {{ DEF, -709, -739, -619, -739},
05615 { -449, -1108, -1138, -1018, -1138},
05616 { -479, -1138, -1168, -1048, -1168},
05617 { -429, -1088, -1118, -998, -1118},
05618 { -329, -988, -1018, -898, -1018}},
05619 /* GC.GC..UA */
05620 {{ DEF, -709, -739, -619, -739},
05621 { -679, -1338, -1368, -1248, -1368},
05622 { -559, -1218, -1248, -1128, -1248},
05623 { -729, -1388, -1418, -1298, -1418},
05624 { -189, -848, -878, -758, -878}},
05625 /* GC.GG..UA */
05626 {{ DEF, -709, -739, -619, -739},
05627 { -939, -1598, -1628, -1508, -1628},
05628 { -249, -908, -938, -818, -938},
05629 { -939, -1598, -1628, -1508, -1628},
05630 { -329, -988, -1018, -898, -1018}},
05631 /* GC.GU..UA */
05632 {{ DEF, -709, -739, -619, -739},
05633 { -639, -1298, -1328, -1208, -1328},
05634 { -229, -888, -918, -798, -918},
05635 { -729, -1388, -1418, -1298, -1418},
05636 { -190, -849, -879, -759, -879}}},
05637 /* GC.U@..UA */
05638 {{{ DEF, -499, -499, -499, -569},
05639 { -100, -549, -549, -549, -619},
05640 { -100, -549, -549, -549, -619},
05641 { -100, -549, -549, -549, -619},
05642 { -100, -549, -549, -549, -619}},
05643 /* GC.UA..UA */
05644 {{ DEF, -499, -499, -499, -569},
05645 { -449, -898, -898, -898, -968},
05646 { -479, -928, -928, -928, -998},
05647 { -429, -878, -878, -878, -948},
05648 { -329, -778, -778, -778, -848}},
05649 /* GC.UC..UA */
05650 {{ DEF, -499, -499, -499, -569},
05651 { -679, -1128, -1128, -1128, -1198},
05652 { -559, -1008, -1008, -1008, -1078},
05653 { -729, -1178, -1178, -1178, -1248},
05654 { -189, -638, -638, -638, -708}},
05655 /* GC.UG..UA */
05656 {{ DEF, -499, -499, -499, -569},
05657 { -939, -1388, -1388, -1388, -1458},
05658 { -249, -698, -698, -698, -768},
05659 { -939, -1388, -1388, -1388, -1458},
05660 { -329, -778, -778, -778, -848}},
05661 /* GC.UU..UA */
05662 {{ DEF, -499, -499, -499, -569},
05663 { -639, -1088, -1088, -1088, -1158},
05664 { -229, -678, -678, -678, -748},
05665 { -729, -1178, -1178, -1178, -1248},
05666 { -190, -639, -639, -639, -709}}}},
05667 /* GC.@@.. @ */
05668 {{{{ DEF, DEF, DEF, DEF, DEF},
05669 { DEF, DEF, DEF, DEF, DEF},
05670 { DEF, DEF, DEF, DEF, DEF},
05671 { DEF, DEF, DEF, DEF, DEF},
05672 { DEF, DEF, DEF, DEF, DEF}},
05673 /* GC.@A.. @ */
05674 {{ DEF, DEF, DEF, DEF, DEF},
05675 { DEF, DEF, DEF, DEF, DEF},
05676 { DEF, DEF, DEF, DEF, DEF},
05677 { DEF, DEF, DEF, DEF, DEF},
05678 { DEF, DEF, DEF, DEF, DEF}},
05679 /* GC.@C.. @ */
05680 {{ DEF, DEF, DEF, DEF, DEF},
05681 { DEF, DEF, DEF, DEF, DEF},
05682 { DEF, DEF, DEF, DEF, DEF},
05683 { DEF, DEF, DEF, DEF, DEF},
05684 { DEF, DEF, DEF, DEF, DEF}},
05685 /* GC.@G.. @ */
05686 {{ DEF, DEF, DEF, DEF, DEF},
05687 { DEF, DEF, DEF, DEF, DEF},
05688 { DEF, DEF, DEF, DEF, DEF},
05689 { DEF, DEF, DEF, DEF, DEF},
05690 { DEF, DEF, DEF, DEF, DEF}},
05691 /* GC.@U.. @ */
05692 {{ DEF, DEF, DEF, DEF, DEF},
05693 { DEF, DEF, DEF, DEF, DEF},

```

```
05694 { DEF, DEF, DEF, DEF, DEF},
05695 { DEF, DEF, DEF, DEF, DEF},
05696 { DEF, DEF, DEF, DEF, DEF}},
05697 /* GC.A@.. @ */
05698 {{ -100, -569, -929, -609, -929},
05699 { -100, -569, -929, -609, -929},
05700 { -100, -569, -929, -609, -929},
05701 { -100, -569, -929, -609, -929},
05702 { -100, -569, -929, -609, -929}},
05703 /* GC.AA.. @ */
05704 {{ -100, -569, -929, -609, -929},
05705 { -100, -569, -929, -609, -929},
05706 { -100, -569, -929, -609, -929},
05707 { -100, -569, -929, -609, -929},
05708 { -100, -569, -929, -609, -929}},
05709 /* GC.AC.. @ */
05710 {{ -100, -569, -929, -609, -929},
05711 { -100, -569, -929, -609, -929},
05712 { -100, -569, -929, -609, -929},
05713 { -100, -569, -929, -609, -929},
05714 { -100, -569, -929, -609, -929}},
05715 /* GC.AG.. @ */
05716 {{ -100, -569, -929, -609, -929},
05717 { -100, -569, -929, -609, -929},
05718 { -100, -569, -929, -609, -929},
05719 { -100, -569, -929, -609, -929},
05720 { -100, -569, -929, -609, -929}},
05721 /* GC.AU.. @ */
05722 {{ -100, -569, -929, -609, -929},
05723 { -100, -569, -929, -609, -929},
05724 { -100, -569, -929, -609, -929},
05725 { -100, -569, -929, -609, -929},
05726 { -100, -569, -929, -609, -929}},
05727 /* GC.C@.. @ */
05728 {{ -100, -769, -359, -359, -439},
05729 { -100, -769, -359, -359, -439},
05730 { -100, -769, -359, -359, -439},
05731 { -100, -769, -359, -359, -439},
05732 { -100, -769, -359, -359, -439}},
05733 /* GC.CA.. @ */
05734 {{ -100, -769, -359, -359, -439},
05735 { -100, -769, -359, -359, -439},
05736 { -100, -769, -359, -359, -439},
05737 { -100, -769, -359, -359, -439},
05738 { -100, -769, -359, -359, -439}},
05739 /* GC.CC.. @ */
05740 {{ -100, -769, -359, -359, -439},
05741 { -100, -769, -359, -359, -439},
05742 { -100, -769, -359, -359, -439},
05743 { -100, -769, -359, -359, -439},
05744 { -100, -769, -359, -359, -439}},
05745 /* GC.CG.. @ */
05746 {{ -100, -769, -359, -359, -439},
05747 { -100, -769, -359, -359, -439},
05748 { -100, -769, -359, -359, -439},
05749 { -100, -769, -359, -359, -439},
05750 { -100, -769, -359, -359, -439}},
05751 /* GC.CU.. @ */
05752 {{ -100, -769, -359, -359, -439},
05753 { -100, -769, -359, -359, -439},
05754 { -100, -769, -359, -359, -439},
05755 { -100, -769, -359, -359, -439},
05756 { -100, -769, -359, -359, -439}},
05757 /* GC.G@.. @ */
05758 {{ -100, -759, -789, -669, -789},
05759 { -100, -759, -789, -669, -789},
05760 { -100, -759, -789, -669, -789},
05761 { -100, -759, -789, -669, -789},
05762 { -100, -759, -789, -669, -789}},
05763 /* GC.GA.. @ */
05764 {{ -100, -759, -789, -669, -789},
05765 { -100, -759, -789, -669, -789},
05766 { -100, -759, -789, -669, -789},
05767 { -100, -759, -789, -669, -789},
05768 { -100, -759, -789, -669, -789}},
05769 /* GC.GC.. @ */
05770 {{ -100, -759, -789, -669, -789},
05771 { -100, -759, -789, -669, -789},
05772 { -100, -759, -789, -669, -789},
05773 { -100, -759, -789, -669, -789},
05774 { -100, -759, -789, -669, -789}},
05775 /* GC.GG.. @ */
05776 {{ -100, -759, -789, -669, -789},
05777 { -100, -759, -789, -669, -789},
05778 { -100, -759, -789, -669, -789},
05779 { -100, -759, -789, -669, -789},
05780 { -100, -759, -789, -669, -789}},
```

```

05781 /* GC.GU.. @ */
05782 {{ -100, -759, -789, -669, -789},
05783 { -100, -759, -789, -669, -789},
05784 { -100, -759, -789, -669, -789},
05785 { -100, -759, -789, -669, -789},
05786 { -100, -759, -789, -669, -789}}},
05787 /* GC.U@.. @ */
05788 {{{ -100, -549, -549, -549, -619},
05789 { -100, -549, -549, -549, -619},
05790 { -100, -549, -549, -549, -619},
05791 { -100, -549, -549, -549, -619},
05792 { -100, -549, -549, -549, -619}}},
05793 /* GC.UA.. @ */
05794 {{{ -100, -549, -549, -549, -619},
05795 { -100, -549, -549, -549, -619},
05796 { -100, -549, -549, -549, -619},
05797 { -100, -549, -549, -549, -619},
05798 { -100, -549, -549, -549, -619}}},
05799 /* GC.UC.. @ */
05800 {{{ -100, -549, -549, -549, -619},
05801 { -100, -549, -549, -549, -619},
05802 { -100, -549, -549, -549, -619},
05803 { -100, -549, -549, -549, -619},
05804 { -100, -549, -549, -549, -619}}},
05805 /* GC.UG.. @ */
05806 {{{ -100, -549, -549, -549, -619},
05807 { -100, -549, -549, -549, -619},
05808 { -100, -549, -549, -549, -619},
05809 { -100, -549, -549, -549, -619},
05810 { -100, -549, -549, -549, -619}}},
05811 /* GC.UU.. @ */
05812 {{{ -100, -549, -549, -549, -619},
05813 { -100, -549, -549, -549, -619},
05814 { -100, -549, -549, -549, -619},
05815 { -100, -549, -549, -549, -619},
05816 { -100, -549, -549, -549, -619}}}}},
05817 { /* noPair */ {{{{0}}}},
05818 /* GU.@A..CG */
05819 {{{{ 0, 0, 0, 0, 0},
05820 { DEF, DEF, DEF, DEF, DEF},
05821 { DEF, DEF, DEF, DEF, DEF},
05822 { DEF, DEF, DEF, DEF, DEF},
05823 { DEF, DEF, DEF, DEF, DEF}}},
05824 /* GU.@A..CG */
05825 {{{ 0, 0, 0, 0, 0},
05826 {-1029, -1029, -1029, -1029, -1029},
05827 {-519, -519, -519, -519, -519},
05828 {-939, -939, -939, -939, -939},
05829 {-809, -809, -809, -809, -809}}},
05830 /* GU.@C..CG */
05831 {{{ 0, 0, 0, 0, 0},
05832 {-949, -949, -949, -949, -949},
05833 {-449, -449, -449, -449, -449},
05834 {-939, -939, -939, -939, -939},
05835 {-739, -739, -739, -739, -739}}},
05836 /* GU.@G..CG */
05837 {{{ 0, 0, 0, 0, 0},
05838 {-1029, -1029, -1029, -1029, -1029},
05839 {-519, -519, -519, -519, -519},
05840 {-939, -939, -939, -939, -939},
05841 {-809, -809, -809, -809, -809}}},
05842 /* GU.@U..CG */
05843 {{{ 0, 0, 0, 0, 0},
05844 {-1029, -1029, -1029, -1029, -1029},
05845 {-669, -669, -669, -669, -669},
05846 {-939, -939, -939, -939, -939},
05847 {-859, -859, -859, -859, -859}}},
05848 /* GU.A@..CG */
05849 {{{ DEF, -429, -599, -599, -599},
05850 {-100, -479, -649, -649, -649},
05851 {-100, -479, -649, -649, -649},
05852 {-100, -479, -649, -649, -649},
05853 {-100, -479, -649, -649, -649}}},
05854 /* GU.AA..CG */
05855 {{{ DEF, -429, -599, -599, -599},
05856 {-1079, -1458, -1628, -1628, -1628},
05857 {-569, -948, -1118, -1118, -1118},
05858 {-989, -1368, -1538, -1538, -1538},
05859 {-859, -1238, -1408, -1408, -1408}}},
05860 /* GU.AC..CG */
05861 {{{ DEF, -429, -599, -599, -599},
05862 {-999, -1378, -1548, -1548, -1548},
05863 {-499, -878, -1048, -1048, -1048},
05864 {-989, -1368, -1538, -1538, -1538},
05865 {-789, -1168, -1338, -1338, -1338}}},
05866 /* GU.AG..CG */
05867 {{{ DEF, -429, -599, -599, -599},

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05868 {-1079,-1458,-1628,-1628,-1628},
05869 {-569,-948,-1118,-1118,-1118},
05870 {-989,-1368,-1538,-1538,-1538},
05871 {-859,-1238,-1408,-1408,-1408}},
05872 /* GU.AU..CG */
05873 {{ DEF, -429, -599, -599, -599},
05874 {-1079,-1458,-1628,-1628,-1628},
05875 {-719,-1098,-1268,-1268,-1268},
05876 {-989,-1368,-1538,-1538,-1538},
05877 {-909,-1288,-1458,-1458,-1458}}},
05878 /* GU.C@..CG */
05879 {{{ DEF, -259, -239, -239, -239},
05880 {-100, -309, -289, -289, -289},
05881 {-100, -309, -289, -289, -289},
05882 {-100, -309, -289, -289, -289},
05883 {-100, -309, -289, -289, -289}}},
05884 /* GU.CA..CG */
05885 {{ DEF, -259, -239, -239, -239},
05886 {-1079,-1288,-1268,-1268,-1268},
05887 {-569, -778, -758, -758, -758},
05888 {-989,-1198,-1178,-1178,-1178},
05889 {-859,-1068,-1048,-1048,-1048}},
05890 /* GU.CC..CG */
05891 {{ DEF, -259, -239, -239, -239},
05892 {-999,-1208,-1188,-1188,-1188},
05893 {-499, -708, -688, -688, -688},
05894 {-989,-1198,-1178,-1178,-1178},
05895 {-789, -998, -978, -978, -978}},
05896 /* GU.CG..CG */
05897 {{ DEF, -259, -239, -239, -239},
05898 {-1079,-1288,-1268,-1268,-1268},
05899 {-569, -778, -758, -758, -758},
05900 {-989,-1198,-1178,-1178,-1178},
05901 {-859,-1068,-1048,-1048,-1048}},
05902 /* GU.CU..CG */
05903 {{ DEF, -259, -239, -239, -239},
05904 {-1079,-1288,-1268,-1268,-1268},
05905 {-719, -928, -908, -908, -908},
05906 {-989,-1198,-1178,-1178,-1178},
05907 {-909,-1118,-1098,-1098,-1098}}},
05908 /* GU.G@..CG */
05909 {{{ DEF, -339, -689, -689, -689},
05910 {-100, -389, -739, -739, -739},
05911 {-100, -389, -739, -739, -739},
05912 {-100, -389, -739, -739, -739},
05913 {-100, -389, -739, -739, -739}}},
05914 /* GU.GA..CG */
05915 {{ DEF, -339, -689, -689, -689},
05916 {-1079,-1368,-1718,-1718,-1718},
05917 {-569, -858,-1208,-1208,-1208},
05918 {-989,-1278,-1628,-1628,-1628},
05919 {-859,-1148,-1498,-1498,-1498}},
05920 /* GU.GC..CG */
05921 {{ DEF, -339, -689, -689, -689},
05922 {-999,-1288,-1638,-1638,-1638},
05923 {-499, -788,-1138,-1138,-1138},
05924 {-989,-1278,-1628,-1628,-1628},
05925 {-789,-1078,-1428,-1428,-1428}},
05926 /* GU.GG..CG */
05927 {{ DEF, -339, -689, -689, -689},
05928 {-1079,-1368,-1718,-1718,-1718},
05929 {-569, -858,-1208,-1208,-1208},
05930 {-989,-1278,-1628,-1628,-1628},
05931 {-859,-1148,-1498,-1498,-1498}},
05932 /* GU.GU..CG */
05933 {{ DEF, -339, -689, -689, -689},
05934 {-1079,-1368,-1718,-1718,-1718},
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05936 {-989,-1278,-1628,-1628,-1628},
05937 {-909,-1198,-1548,-1548,-1548}}},
05938 /* GU.U@..CG */
05939 {{{ DEF, -329, -329, -329, -329},
05940 {-100, -379, -379, -379, -379},
05941 {-100, -379, -379, -379, -379},
05942 {-100, -379, -379, -379, -379},
05943 {-100, -379, -379, -379, -379}}},
05944 /* GU.UA..CG */
05945 {{ DEF, -329, -329, -329, -329},
05946 {-1079,-1358,-1358,-1358,-1358},
05947 {-569, -848, -848, -848, -848},
05948 {-989,-1268,-1268,-1268,-1268},
05949 {-859,-1138,-1138,-1138,-1138}},
05950 /* GU.UC..CG */
05951 {{ DEF, -329, -329, -329, -329},
05952 {-999,-1278,-1278,-1278,-1278},
05953 {-499, -778, -778, -778, -778},
05954 {-989,-1268,-1268,-1268,-1268},
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05955 { -789,-1068,-1068,-1068,-1068}},
05956 /* GU.UG..CG */
05957 {{ DEF, -329, -329, -329, -329},
05958 {-1079,-1358,-1358,-1358,-1358}},
05959 { -569, -848, -848, -848, -848}},
05960 { -989,-1268,-1268,-1268,-1268}},
05961 { -859,-1138,-1138,-1138,-1138}},
05962 /* GU.UU..CG */
05963 {{ DEF, -329, -329, -329, -329},
05964 {-1079,-1358,-1358,-1358,-1358}},
05965 { -719, -998, -998, -998, -998}},
05966 { -989,-1268,-1268,-1268,-1268}},
05967 { -909,-1188,-1188,-1188,-1188}}}},
05968 /* GU.@@..GC */
05969 {{{ 0, 0, 0, 0, 0},
05970 { DEF, DEF, DEF, DEF, DEF}},
05971 { DEF, DEF, DEF, DEF, DEF}},
05972 { DEF, DEF, DEF, DEF, DEF}},
05973 { DEF, DEF, DEF, DEF, DEF}}},
05974 /* GU.@A..GC */
05975 {{ 0, 0, 0, 0, 0},
05976 { -519, -519, -519, -519, -519}},
05977 { -719, -719, -719, -719, -719}},
05978 { -709, -709, -709, -709, -709}},
05979 { -499, -499, -499, -499, -499}},
05980 /* GU.@C..GC */
05981 {{ 0, 0, 0, 0, 0},
05982 { -879, -879, -879, -879, -879}},
05983 { -309, -309, -309, -309, -309}},
05984 { -739, -739, -739, -739, -739}},
05985 { -499, -499, -499, -499, -499}},
05986 /* GU.@G..GC */
05987 {{ 0, 0, 0, 0, 0},
05988 { -559, -559, -559, -559, -559}},
05989 { -309, -309, -309, -309, -309}},
05990 { -619, -619, -619, -619, -619}},
05991 { -499, -499, -499, -499, -499}},
05992 /* GU.@U..GC */
05993 {{ 0, 0, 0, 0, 0},
05994 { -879, -879, -879, -879, -879}},
05995 { -389, -389, -389, -389, -389}},
05996 { -739, -739, -739, -739, -739}},
05997 { -569, -569, -569, -569, -569}}}},
05998 /* GU.A@..GC */
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06000 { -100, -479, -649, -649, -649}},
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06849 { -100, -379, -379, -379, -379}},
06850 /* GU.UC.. @ */
06851 {{ -100, -379, -379, -379, -379},
06852 { -100, -379, -379, -379, -379},
06853 { -100, -379, -379, -379, -379},
06854 { -100, -379, -379, -379, -379},
06855 { -100, -379, -379, -379, -379}},
06856 /* GU.UG.. @ */
06857 {{ -100, -379, -379, -379, -379},
06858 { -100, -379, -379, -379, -379},
06859 { -100, -379, -379, -379, -379},
06860 { -100, -379, -379, -379, -379},
06861 { -100, -379, -379, -379, -379}},
06862 /* GU.UU.. @ */
06863 {{ -100, -379, -379, -379, -379},
06864 { -100, -379, -379, -379, -379},
06865 { -100, -379, -379, -379, -379},
06866 { -100, -379, -379, -379, -379},
06867 { -100, -379, -379, -379, -379}}}}},
06868 { /* noPair */ {{{{0}}}},
06869 /* UG.@@..CG */
06870 {{{{ 0, 0, 0, 0, 0},
06871 { DEF, DEF, DEF, DEF, DEF},
06872 { DEF, DEF, DEF, DEF, DEF},
06873 { DEF, DEF, DEF, DEF, DEF},
06874 { DEF, DEF, DEF, DEF, DEF}},
06875 /* UG.@A..CG */
06876 {{ 0, 0, 0, 0, 0},
06877 {-1029,-1029,-1029,-1029,-1029},
06878 { -519, -519, -519, -519, -519},
06879 { -939, -939, -939, -939, -939},
06880 { -809, -809, -809, -809, -809}},
06881 /* UG.@C..CG */
06882 {{ 0, 0, 0, 0, 0},
06883 { -949, -949, -949, -949, -949},
06884 { -449, -449, -449, -449, -449},
06885 { -939, -939, -939, -939, -939},
06886 { -739, -739, -739, -739, -739}},
06887 /* UG.@G..CG */
06888 {{ 0, 0, 0, 0, 0},
06889 {-1029,-1029,-1029,-1029,-1029},
06890 { -519, -519, -519, -519, -519},
06891 { -939, -939, -939, -939, -939},
06892 { -809, -809, -809, -809, -809}},
06893 /* UG.@U..CG */
06894 {{ 0, 0, 0, 0, 0},
06895 {-1029,-1029,-1029,-1029,-1029},
06896 { -669, -669, -669, -669, -669},
06897 { -939, -939, -939, -939, -939},
06898 { -859, -859, -859, -859, -859}}},
06899 /* UG.A@..CG */
06900 {{{ DEF, -719, -789, -959, -809},
06901 { -100, -769, -839,-1009, -859},
06902 { -100, -769, -839,-1009, -859},
06903 { -100, -769, -839,-1009, -859},
06904 { -100, -769, -839,-1009, -859}},
06905 /* UG.AA..CG */
06906 {{ DEF, -719, -789, -959, -809},
06907 {-1079,-1748,-1818,-1988,-1838},
06908 { -569,-1238,-1308,-1478,-1328},
06909 { -989,-1658,-1728,-1898,-1748},
06910 { -859,-1528,-1598,-1768,-1618}},
06911 /* UG.AC..CG */

```

```
06912 {{ DEF, -719, -789, -959, -809},
06913 { -999,-1668,-1738,-1908,-1758},
06914 { -499,-1168,-1238,-1408,-1258},
06915 { -989,-1658,-1728,-1898,-1748},
06916 { -789,-1458,-1528,-1698,-1548}},
06917 /* UG.AG..CG */
06918 {{ DEF, -719, -789, -959, -809},
06919 {-1079,-1748,-1818,-1988,-1838},
06920 { -569,-1238,-1308,-1478,-1328},
06921 { -989,-1658,-1728,-1898,-1748},
06922 { -859,-1528,-1598,-1768,-1618}},
06923 /* UG.AU..CG */
06924 {{ DEF, -719, -789, -959, -809},
06925 {-1079,-1748,-1818,-1988,-1838},
06926 { -719,-1388,-1458,-1628,-1478},
06927 { -989,-1658,-1728,-1898,-1748},
06928 { -909,-1578,-1648,-1818,-1668}}},
06929 /* UG.C@..CG */
06930 {{{ DEF, -479, -479, -359, -479},
06931 { -100, -529, -529, -409, -529},
06932 { -100, -529, -529, -409, -529},
06933 { -100, -529, -529, -409, -529},
06934 { -100, -529, -529, -409, -529}},
06935 /* UG.CA..CG */
06936 {{ DEF, -479, -479, -359, -479},
06937 {-1079,-1508,-1508,-1388,-1508},
06938 { -569, -998, -998, -878, -998},
06939 { -989,-1418,-1418,-1298,-1418},
06940 { -859,-1288,-1288,-1168,-1288}},
06941 /* UG.CC..CG */
06942 {{ DEF, -479, -479, -359, -479},
06943 { -999,-1428,-1428,-1308,-1428},
06944 { -499, -928, -928, -808, -928},
06945 { -989,-1418,-1418,-1298,-1418},
06946 { -789,-1218,-1218,-1098,-1218}},
06947 /* UG.CG..CG */
06948 {{ DEF, -479, -479, -359, -479},
06949 {-1079,-1508,-1508,-1388,-1508},
06950 { -569, -998, -998, -878, -998},
06951 { -989,-1418,-1418,-1298,-1418},
06952 { -859,-1288,-1288,-1168,-1288}},
06953 /* UG.CU..CG */
06954 {{ DEF, -479, -479, -359, -479},
06955 {-1079,-1508,-1508,-1388,-1508},
06956 { -719,-1148,-1148,-1028,-1148},
06957 { -989,-1418,-1418,-1298,-1418},
06958 { -909,-1338,-1338,-1218,-1338}}},
06959 /* UG.G@..CG */
06960 {{{ DEF, -659, -809, -919, -809},
06961 { -100, -709, -859, -969, -859},
06962 { -100, -709, -859, -969, -859},
06963 { -100, -709, -859, -969, -859},
06964 { -100, -709, -859, -969, -859}},
06965 /* UG.GA..CG */
06966 {{ DEF, -659, -809, -919, -809},
06967 {-1079,-1688,-1838,-1948,-1838},
06968 { -569,-1178,-1328,-1438,-1328},
06969 { -989,-1598,-1748,-1858,-1748},
06970 { -859,-1468,-1618,-1728,-1618}},
06971 /* UG.GC..CG */
06972 {{ DEF, -659, -809, -919, -809},
06973 { -999,-1608,-1758,-1868,-1758},
06974 { -499,-1108,-1258,-1368,-1258},
06975 { -989,-1598,-1748,-1858,-1748},
06976 { -789,-1398,-1548,-1658,-1548}},
06977 /* UG.GG..CG */
06978 {{ DEF, -659, -809, -919, -809},
06979 {-1079,-1688,-1838,-1948,-1838},
06980 { -569,-1178,-1328,-1438,-1328},
06981 { -989,-1598,-1748,-1858,-1748},
06982 { -859,-1468,-1618,-1728,-1618}},
06983 /* UG.GU..CG */
06984 {{ DEF, -659, -809, -919, -809},
06985 {-1079,-1688,-1838,-1948,-1838},
06986 { -719,-1328,-1478,-1588,-1478},
06987 { -989,-1598,-1748,-1858,-1748},
06988 { -909,-1518,-1668,-1778,-1668}}},
06989 /* UG.U@..CG */
06990 {{{ DEF, -549, -439, -549, -359},
06991 { -100, -599, -489, -599, -409},
06992 { -100, -599, -489, -599, -409},
06993 { -100, -599, -489, -599, -409},
06994 { -100, -599, -489, -599, -409}},
06995 /* UG.UA..CG */
06996 {{ DEF, -549, -439, -549, -359},
06997 {-1079,-1578,-1468,-1578,-1388},
06998 { -569,-1068, -958,-1068, -878},
```

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06999 { -989,-1488,-1378,-1488,-1298},
07000 { -859,-1358,-1248,-1358,-1168}},
07001 /* UG.UC..CG */
07002 {{ DEF, -549, -439, -549, -359},
07003 { -999,-1498,-1388,-1498,-1308},
07004 { -499, -998, -888, -998, -808},
07005 { -989,-1488,-1378,-1488,-1298},
07006 { -789,-1288,-1178,-1288,-1098}},
07007 /* UG.UG..CG */
07008 {{ DEF, -549, -439, -549, -359},
07009 {-1079,-1578,-1468,-1578,-1388},
07010 { -569,-1068, -958,-1068, -878},
07011 { -989,-1488,-1378,-1488,-1298},
07012 { -859,-1358,-1248,-1358,-1168}},
07013 /* UG.UU..CG */
07014 {{ DEF, -549, -439, -549, -359},
07015 {-1079,-1578,-1468,-1578,-1388},
07016 { -719,-1218,-1108,-1218,-1028},
07017 { -989,-1488,-1378,-1488,-1298},
07018 { -909,-1408,-1298,-1408,-1218}}}},
07019 /* UG.@@..GC */
07020 {{{ 0, 0, 0, 0, 0},
07021 { DEF, DEF, DEF, DEF, DEF},
07022 { DEF, DEF, DEF, DEF, DEF},
07023 { DEF, DEF, DEF, DEF, DEF},
07024 { DEF, DEF, DEF, DEF, DEF}},
07025 /* UG.@A..GC */
07026 {{ 0, 0, 0, 0, 0},
07027 { -519, -519, -519, -519, -519},
07028 { -719, -719, -719, -719, -719},
07029 { -709, -709, -709, -709, -709},
07030 { -499, -499, -499, -499, -499}},
07031 /* UG.@C..GC */
07032 {{ 0, 0, 0, 0, 0},
07033 { -879, -879, -879, -879, -879},
07034 { -309, -309, -309, -309, -309},
07035 { -739, -739, -739, -739, -739},
07036 { -499, -499, -499, -499, -499}},
07037 /* UG.@G..GC */
07038 {{ 0, 0, 0, 0, 0},
07039 { -559, -559, -559, -559, -559},
07040 { -309, -309, -309, -309, -309},
07041 { -619, -619, -619, -619, -619},
07042 { -499, -499, -499, -499, -499}},
07043 /* UG.@U..GC */
07044 {{ 0, 0, 0, 0, 0},
07045 { -879, -879, -879, -879, -879},
07046 { -389, -389, -389, -389, -389},
07047 { -739, -739, -739, -739, -739},
07048 { -569, -569, -569, -569, -569}},
07049 /* UG.@@..GC */
07050 {{{ DEF, -719, -789, -959, -809},
07051 { -100, -769, -839,-1009, -859},
07052 { -100, -769, -839,-1009, -859},
07053 { -100, -769, -839,-1009, -859},
07054 { -100, -769, -839,-1009, -859}},
07055 /* UG.AA..GC */
07056 {{ DEF, -719, -789, -959, -809},
07057 { -569,-1238,-1308,-1478,-1328},
07058 { -769,-1438,-1508,-1678,-1528},
07059 { -759,-1428,-1498,-1668,-1518},
07060 { -549,-1218,-1288,-1458,-1308}},
07061 /* UG.AC..GC */
07062 {{ DEF, -719, -789, -959, -809},
07063 { -929,-1598,-1668,-1838,-1688},
07064 { -359,-1028,-1098,-1268,-1118},
07065 { -789,-1458,-1528,-1698,-1548},
07066 { -549,-1218,-1288,-1458,-1308}},
07067 /* UG.AG..GC */
07068 {{ DEF, -719, -789, -959, -809},
07069 { -609,-1278,-1348,-1518,-1368},
07070 { -359,-1028,-1098,-1268,-1118},
07071 { -669,-1338,-1408,-1578,-1428},
07072 { -549,-1218,-1288,-1458,-1308}},
07073 /* UG.AU..GC */
07074 {{ DEF, -719, -789, -959, -809},
07075 { -929,-1598,-1668,-1838,-1688},
07076 { -439,-1108,-1178,-1348,-1198},
07077 { -789,-1458,-1528,-1698,-1548},
07078 { -619,-1288,-1358,-1528,-1378}}}},
07079 /* UG.C@..GC */
07080 {{{ DEF, -479, -479, -359, -479},
07081 { -100, -529, -529, -409, -529},
07082 { -100, -529, -529, -409, -529},
07083 { -100, -529, -529, -409, -529},
07084 { -100, -529, -529, -409, -529}},
07085 /* UG.CA..GC */

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07086 {{ DEF, -479, -479, -359, -479},
07087 { -569, -998, -998, -878, -998},
07088 { -769, -1198, -1198, -1078, -1198},
07089 { -759, -1188, -1188, -1068, -1188},
07090 { -549, -978, -978, -858, -978}},
07091 /* UG.CC..GC */
07092 {{ DEF, -479, -479, -359, -479},
07093 { -929, -1358, -1358, -1238, -1358},
07094 { -359, -788, -788, -668, -788},
07095 { -789, -1218, -1218, -1098, -1218},
07096 { -549, -978, -978, -858, -978}},
07097 /* UG.CG..GC */
07098 {{ DEF, -479, -479, -359, -479},
07099 { -609, -1038, -1038, -918, -1038},
07100 { -359, -788, -788, -668, -788},
07101 { -669, -1098, -1098, -978, -1098},
07102 { -549, -978, -978, -858, -978}},
07103 /* UG.CU..GC */
07104 {{ DEF, -479, -479, -359, -479},
07105 { -929, -1358, -1358, -1238, -1358},
07106 { -439, -868, -868, -748, -868},
07107 { -789, -1218, -1218, -1098, -1218},
07108 { -619, -1048, -1048, -928, -1048}}},
07109 /* UG.G@..GC */
07110 {{{ DEF, -659, -809, -919, -809},
07111 { -100, -709, -859, -969, -859},
07112 { -100, -709, -859, -969, -859},
07113 { -100, -709, -859, -969, -859},
07114 { -100, -709, -859, -969, -859}},
07115 /* UG.GA..GC */
07116 {{ DEF, -659, -809, -919, -809},
07117 { -569, -1178, -1328, -1438, -1328},
07118 { -769, -1378, -1528, -1638, -1528},
07119 { -759, -1368, -1518, -1628, -1518},
07120 { -549, -1158, -1308, -1418, -1308}},
07121 /* UG.GC..GC */
07122 {{ DEF, -659, -809, -919, -809},
07123 { -929, -1538, -1688, -1798, -1688},
07124 { -359, -968, -1118, -1228, -1118},
07125 { -789, -1398, -1548, -1658, -1548},
07126 { -549, -1158, -1308, -1418, -1308}},
07127 /* UG.GG..GC */
07128 {{ DEF, -659, -809, -919, -809},
07129 { -609, -1218, -1368, -1478, -1368},
07130 { -359, -968, -1118, -1228, -1118},
07131 { -669, -1278, -1428, -1538, -1428},
07132 { -549, -1158, -1308, -1418, -1308}},
07133 /* UG.GU..GC */
07134 {{ DEF, -659, -809, -919, -809},
07135 { -929, -1538, -1688, -1798, -1688},
07136 { -439, -1048, -1198, -1308, -1198},
07137 { -789, -1398, -1548, -1658, -1548},
07138 { -619, -1228, -1378, -1488, -1378}}},
07139 /* UG.U@..GC */
07140 {{{ DEF, -549, -439, -549, -359},
07141 { -100, -599, -489, -599, -409},
07142 { -100, -599, -489, -599, -409},
07143 { -100, -599, -489, -599, -409},
07144 { -100, -599, -489, -599, -409}},
07145 /* UG.UA..GC */
07146 {{ DEF, -549, -439, -549, -359},
07147 { -569, -1068, -958, -1068, -878},
07148 { -769, -1268, -1158, -1268, -1078},
07149 { -759, -1258, -1148, -1258, -1068},
07150 { -549, -1048, -938, -1048, -858}},
07151 /* UG.UC..GC */
07152 {{ DEF, -549, -439, -549, -359},
07153 { -929, -1428, -1318, -1428, -1238},
07154 { -359, -858, -748, -858, -668},
07155 { -789, -1288, -1178, -1288, -1098},
07156 { -549, -1048, -938, -1048, -858}},
07157 /* UG.UG..GC */
07158 {{ DEF, -549, -439, -549, -359},
07159 { -609, -1108, -998, -1108, -918},
07160 { -359, -858, -748, -858, -668},
07161 { -669, -1168, -1058, -1168, -978},
07162 { -549, -1048, -938, -1048, -858}},
07163 /* UG.UU..GC */
07164 {{ DEF, -549, -439, -549, -359},
07165 { -929, -1428, -1318, -1428, -1238},
07166 { -439, -938, -828, -938, -748},
07167 { -789, -1288, -1178, -1288, -1098},
07168 { -619, -1118, -1008, -1118, -928}}}},
07169 /* UG.@@..GU */
07170 {{{ 0, 0, 0, 0, 0},
07171 { DEF, DEF, DEF, DEF, DEF},
07172 { DEF, DEF, DEF, DEF, DEF},
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07173 { DEF, DEF, DEF, DEF, DEF},
07174 { DEF, DEF, DEF, DEF, DEF}},
07175 /* UG.@A..GU */
07176 {{ 0, 0, 0, 0, 0},
07177 {-429, -429, -429, -429, -429},
07178 {-259, -259, -259, -259, -259},
07179 {-339, -339, -339, -339, -339},
07180 {-329, -329, -329, -329, -329}},
07181 /* UG.@C..GU */
07182 {{ 0, 0, 0, 0, 0},
07183 {-599, -599, -599, -599, -599},
07184 {-239, -239, -239, -239, -239},
07185 {-689, -689, -689, -689, -689},
07186 {-329, -329, -329, -329, -329}},
07187 /* UG.@G..GU */
07188 {{ 0, 0, 0, 0, 0},
07189 {-599, -599, -599, -599, -599},
07190 {-239, -239, -239, -239, -239},
07191 {-689, -689, -689, -689, -689},
07192 {-329, -329, -329, -329, -329}},
07193 /* UG.@U..GU */
07194 {{ 0, 0, 0, 0, 0},
07195 {-599, -599, -599, -599, -599},
07196 {-239, -239, -239, -239, -239},
07197 {-689, -689, -689, -689, -689},
07198 {-329, -329, -329, -329, -329}},
07199 /* UG.A@..GU */
07200 {{{ DEF, -719, -789, -959, -809},
07201 {-100, -769, -839, -1009, -859},
07202 {-100, -769, -839, -1009, -859},
07203 {-100, -769, -839, -1009, -859},
07204 {-100, -769, -839, -1009, -859}},
07205 /* UG.AA..GU */
07206 {{ DEF, -719, -789, -959, -809},
07207 {-479, -1148, -1218, -1388, -1238},
07208 {-309, -978, -1048, -1218, -1068},
07209 {-389, -1058, -1128, -1298, -1148},
07210 {-379, -1048, -1118, -1288, -1138}},
07211 /* UG.AC..GU */
07212 {{ DEF, -719, -789, -959, -809},
07213 {-649, -1318, -1388, -1558, -1408},
07214 {-289, -958, -1028, -1198, -1048},
07215 {-739, -1408, -1478, -1648, -1498},
07216 {-379, -1048, -1118, -1288, -1138}},
07217 /* UG.AG..GU */
07218 {{ DEF, -719, -789, -959, -809},
07219 {-649, -1318, -1388, -1558, -1408},
07220 {-289, -958, -1028, -1198, -1048},
07221 {-739, -1408, -1478, -1648, -1498},
07222 {-379, -1048, -1118, -1288, -1138}},
07223 /* UG.AU..GU */
07224 {{ DEF, -719, -789, -959, -809},
07225 {-649, -1318, -1388, -1558, -1408},
07226 {-289, -958, -1028, -1198, -1048},
07227 {-739, -1408, -1478, -1648, -1498},
07228 {-379, -1048, -1118, -1288, -1138}},
07229 /* UG.C@..GU */
07230 {{{ DEF, -479, -479, -359, -479},
07231 {-100, -529, -529, -409, -529},
07232 {-100, -529, -529, -409, -529},
07233 {-100, -529, -529, -409, -529},
07234 {-100, -529, -529, -409, -529}},
07235 /* UG.CA..GU */
07236 {{ DEF, -479, -479, -359, -479},
07237 {-479, -908, -908, -788, -908},
07238 {-309, -738, -738, -618, -738},
07239 {-389, -818, -818, -698, -818},
07240 {-379, -808, -808, -688, -808}},
07241 /* UG.CC..GU */
07242 {{ DEF, -479, -479, -359, -479},
07243 {-649, -1078, -1078, -958, -1078},
07244 {-289, -718, -718, -598, -718},
07245 {-739, -1168, -1168, -1048, -1168},
07246 {-379, -808, -808, -688, -808}},
07247 /* UG.CG..GU */
07248 {{ DEF, -479, -479, -359, -479},
07249 {-649, -1078, -1078, -958, -1078},
07250 {-289, -718, -718, -598, -718},
07251 {-739, -1168, -1168, -1048, -1168},
07252 {-379, -808, -808, -688, -808}},
07253 /* UG.CU..GU */
07254 {{ DEF, -479, -479, -359, -479},
07255 {-649, -1078, -1078, -958, -1078},
07256 {-289, -718, -718, -598, -718},
07257 {-739, -1168, -1168, -1048, -1168},
07258 {-379, -808, -808, -688, -808}},
07259 /* UG.G@..GU */

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07260 {{ { DEF, -659, -809, -919, -809},
07261 { -100, -709, -859, -969, -859},
07262 { -100, -709, -859, -969, -859},
07263 { -100, -709, -859, -969, -859},
07264 { -100, -709, -859, -969, -859}},
07265 /* UG.GA..GU */
07266 {{ DEF, -659, -809, -919, -809},
07267 { -479,-1088,-1238,-1348,-1238},
07268 { -309, -918,-1068,-1178,-1068},
07269 { -389, -998,-1148,-1258,-1148},
07270 { -379, -988,-1138,-1248,-1138}},
07271 /* UG.GC..GU */
07272 {{ DEF, -659, -809, -919, -809},
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07701 { -939,-1368,-1368,-1248,-1368},
07702 { -329, -758, -758, -638, -758}},
07703 /* UG.CU..UA */
07704 {{ DEF, -479, -479, -359, -479},
07705 { -639,-1068,-1068, -948,-1068},
07706 { -229, -658, -658, -538, -658},
07707 { -729,-1158,-1158,-1038,-1158},
07708 { -190, -619, -619, -499, -619}}},
07709 /* UG.G@..UA */
07710 {{{ DEF, -659, -809, -919, -809},
07711 { -100, -709, -859, -969, -859},
07712 { -100, -709, -859, -969, -859},
07713 { -100, -709, -859, -969, -859},
07714 { -100, -709, -859, -969, -859}},
07715 /* UG.GA..UA */
07716 {{ DEF, -659, -809, -919, -809},
07717 { -449,-1058,-1208,-1318,-1208},
07718 { -479,-1088,-1238,-1348,-1238},
07719 { -429,-1038,-1188,-1298,-1188},
07720 { -329, -938,-1088,-1198,-1088}},
07721 /* UG.GC..UA */
07722 {{ DEF, -659, -809, -919, -809},
07723 { -679,-1288,-1438,-1548,-1438},
07724 { -559,-1168,-1318,-1428,-1318},
07725 { -729,-1338,-1488,-1598,-1488},
07726 { -189, -798, -948,-1058, -948}},
07727 /* UG.GG..UA */
07728 {{ DEF, -659, -809, -919, -809},
07729 { -939,-1548,-1698,-1808,-1698},
07730 { -249, -858,-1008,-1118,-1008},
07731 { -939,-1548,-1698,-1808,-1698},
07732 { -329, -938,-1088,-1198,-1088}},
07733 /* UG.GU..UA */
07734 {{ DEF, -659, -809, -919, -809},
07735 { -639,-1248,-1398,-1508,-1398},
07736 { -229, -838, -988,-1098, -988},
07737 { -729,-1338,-1488,-1598,-1488},
07738 { -190, -799, -949,-1059, -949}}},
07739 /* UG.U@..UA */
07740 {{{ DEF, -549, -439, -549, -359},
07741 { -100, -599, -489, -599, -409},
07742 { -100, -599, -489, -599, -409},
07743 { -100, -599, -489, -599, -409},
07744 { -100, -599, -489, -599, -409}},
07745 /* UG.UA..UA */
07746 {{ DEF, -549, -439, -549, -359},
07747 { -449, -948, -838, -948, -758},
07748 { -479, -978, -868, -978, -788},
07749 { -429, -928, -818, -928, -738},
07750 { -329, -828, -718, -828, -638}},
07751 /* UG.UC..UA */
07752 {{ DEF, -549, -439, -549, -359},
07753 { -679,-1178,-1068,-1178, -988},
07754 { -559,-1058, -948,-1058, -868},
07755 { -729,-1228,-1118,-1228,-1038},
07756 { -189, -688, -578, -688, -498}},
07757 /* UG.UG..UA */
07758 {{ DEF, -549, -439, -549, -359},
07759 { -939,-1438,-1328,-1438,-1248},
07760 { -249, -748, -638, -748, -558},
07761 { -939,-1438,-1328,-1438,-1248},
07762 { -329, -828, -718, -828, -638}},
07763 /* UG.UU..UA */
07764 {{ DEF, -549, -439, -549, -359},
07765 { -639,-1138,-1028,-1138, -948},
07766 { -229, -728, -618, -728, -538},
07767 { -729,-1228,-1118,-1228,-1038},
07768 { -190, -689, -579, -689, -499}}},
07769 /* UG.@@..@ */
07770 {{{ DEF, DEF, DEF, DEF, DEF},
07771 { DEF, DEF, DEF, DEF, DEF},
07772 { DEF, DEF, DEF, DEF, DEF},
07773 { DEF, DEF, DEF, DEF, DEF},
07774 { DEF, DEF, DEF, DEF, DEF}},
07775 /* UG.@A..@ */
07776 {{ DEF, DEF, DEF, DEF, DEF},
07777 { DEF, DEF, DEF, DEF, DEF},
07778 { DEF, DEF, DEF, DEF, DEF},
07779 { DEF, DEF, DEF, DEF, DEF},
07780 { DEF, DEF, DEF, DEF, DEF}},
07781 /* UG.@C..@ */

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07782 {{ DEF, DEF, DEF, DEF, DEF},
07783 { DEF, DEF, DEF, DEF, DEF},
07784 { DEF, DEF, DEF, DEF, DEF},
07785 { DEF, DEF, DEF, DEF, DEF},
07786 { DEF, DEF, DEF, DEF, DEF}},
07787 /* UG. @G.. @ */
07788 {{ DEF, DEF, DEF, DEF, DEF},
07789 { DEF, DEF, DEF, DEF, DEF},
07790 { DEF, DEF, DEF, DEF, DEF},
07791 { DEF, DEF, DEF, DEF, DEF},
07792 { DEF, DEF, DEF, DEF, DEF}},
07793 /* UG. @U.. @ */
07794 {{ DEF, DEF, DEF, DEF, DEF},
07795 { DEF, DEF, DEF, DEF, DEF},
07796 { DEF, DEF, DEF, DEF, DEF},
07797 { DEF, DEF, DEF, DEF, DEF},
07798 { DEF, DEF, DEF, DEF, DEF}},
07799 /* UG. @A@.. @ */
07800 {{{ -100, -769, -839, -1009, -859},
07801 { -100, -769, -839, -1009, -859},
07802 { -100, -769, -839, -1009, -859},
07803 { -100, -769, -839, -1009, -859},
07804 { -100, -769, -839, -1009, -859}},
07805 /* UG. @A.. @ */
07806 {{ -100, -769, -839, -1009, -859},
07807 { -100, -769, -839, -1009, -859},
07808 { -100, -769, -839, -1009, -859},
07809 { -100, -769, -839, -1009, -859},
07810 { -100, -769, -839, -1009, -859}},
07811 /* UG. @C.. @ */
07812 {{ -100, -769, -839, -1009, -859},
07813 { -100, -769, -839, -1009, -859},
07814 { -100, -769, -839, -1009, -859},
07815 { -100, -769, -839, -1009, -859},
07816 { -100, -769, -839, -1009, -859}},
07817 /* UG. @G.. @ */
07818 {{ -100, -769, -839, -1009, -859},
07819 { -100, -769, -839, -1009, -859},
07820 { -100, -769, -839, -1009, -859},
07821 { -100, -769, -839, -1009, -859},
07822 { -100, -769, -839, -1009, -859}},
07823 /* UG. @U.. @ */
07824 {{ -100, -769, -839, -1009, -859},
07825 { -100, -769, -839, -1009, -859},
07826 { -100, -769, -839, -1009, -859},
07827 { -100, -769, -839, -1009, -859},
07828 { -100, -769, -839, -1009, -859}},
07829 /* UG. @C@.. @ */
07830 {{{ -100, -529, -529, -409, -529},
07831 { -100, -529, -529, -409, -529},
07832 { -100, -529, -529, -409, -529},
07833 { -100, -529, -529, -409, -529},
07834 { -100, -529, -529, -409, -529}},
07835 /* UG. @A.. @ */
07836 {{ -100, -529, -529, -409, -529},
07837 { -100, -529, -529, -409, -529},
07838 { -100, -529, -529, -409, -529},
07839 { -100, -529, -529, -409, -529},
07840 { -100, -529, -529, -409, -529}},
07841 /* UG. @C.. @ */
07842 {{ -100, -529, -529, -409, -529},
07843 { -100, -529, -529, -409, -529},
07844 { -100, -529, -529, -409, -529},
07845 { -100, -529, -529, -409, -529},
07846 { -100, -529, -529, -409, -529}},
07847 /* UG. @G.. @ */
07848 {{ -100, -529, -529, -409, -529},
07849 { -100, -529, -529, -409, -529},
07850 { -100, -529, -529, -409, -529},
07851 { -100, -529, -529, -409, -529},
07852 { -100, -529, -529, -409, -529}},
07853 /* UG. @U.. @ */
07854 {{ -100, -529, -529, -409, -529},
07855 { -100, -529, -529, -409, -529},
07856 { -100, -529, -529, -409, -529},
07857 { -100, -529, -529, -409, -529},
07858 { -100, -529, -529, -409, -529}},
07859 /* UG. @G@.. @ */
07860 {{{ -100, -709, -859, -969, -859},
07861 { -100, -709, -859, -969, -859},
07862 { -100, -709, -859, -969, -859},
07863 { -100, -709, -859, -969, -859},
07864 { -100, -709, -859, -969, -859}},
07865 /* UG. @A.. @ */
07866 {{ -100, -709, -859, -969, -859},
07867 { -100, -709, -859, -969, -859},
07868 { -100, -709, -859, -969, -859},
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07869 { -100, -709, -859, -969, -859},
07870 { -100, -709, -859, -969, -859}},
07871 /* UG.GC.. @ */
07872 {{ -100, -709, -859, -969, -859},
07873 { -100, -709, -859, -969, -859},
07874 { -100, -709, -859, -969, -859},
07875 { -100, -709, -859, -969, -859},
07876 { -100, -709, -859, -969, -859}},
07877 /* UG.GG.. @ */
07878 {{ -100, -709, -859, -969, -859},
07879 { -100, -709, -859, -969, -859},
07880 { -100, -709, -859, -969, -859},
07881 { -100, -709, -859, -969, -859},
07882 { -100, -709, -859, -969, -859}},
07883 /* UG.GU.. @ */
07884 {{ -100, -709, -859, -969, -859},
07885 { -100, -709, -859, -969, -859},
07886 { -100, -709, -859, -969, -859},
07887 { -100, -709, -859, -969, -859},
07888 { -100, -709, -859, -969, -859}},
07889 /* UG.U@.. @ */
07890 {{{ -100, -599, -489, -599, -409},
07891 { -100, -599, -489, -599, -409},
07892 { -100, -599, -489, -599, -409},
07893 { -100, -599, -489, -599, -409},
07894 { -100, -599, -489, -599, -409}},
07895 /* UG.UA.. @ */
07896 {{ -100, -599, -489, -599, -409},
07897 { -100, -599, -489, -599, -409},
07898 { -100, -599, -489, -599, -409},
07899 { -100, -599, -489, -599, -409},
07900 { -100, -599, -489, -599, -409}},
07901 /* UG.UC.. @ */
07902 {{ -100, -599, -489, -599, -409},
07903 { -100, -599, -489, -599, -409},
07904 { -100, -599, -489, -599, -409},
07905 { -100, -599, -489, -599, -409},
07906 { -100, -599, -489, -599, -409}},
07907 /* UG.UG.. @ */
07908 {{ -100, -599, -489, -599, -409},
07909 { -100, -599, -489, -599, -409},
07910 { -100, -599, -489, -599, -409},
07911 { -100, -599, -489, -599, -409},
07912 { -100, -599, -489, -599, -409}},
07913 /* UG.UU.. @ */
07914 {{{ -100, -599, -489, -599, -409},
07915 { -100, -599, -489, -599, -409},
07916 { -100, -599, -489, -599, -409},
07917 { -100, -599, -489, -599, -409},
07918 { -100, -599, -489, -599, -409}}}},
07919 { /* noPair */ {{{0}}}},
07920 /* AU.@A..CG */
07921 {{{ 0, 0, 0, 0, 0},
07922 { DEF, DEF, DEF, DEF, DEF},
07923 { DEF, DEF, DEF, DEF, DEF},
07924 { DEF, DEF, DEF, DEF, DEF},
07925 { DEF, DEF, DEF, DEF, DEF}},
07926 /* AU.@A..CG */
07927 {{ 0, 0, 0, 0, 0},
07928 {-1029,-1029,-1029,-1029,-1029},
07929 { -519, -519, -519, -519, -519},
07930 { -939, -939, -939, -939, -939},
07931 { -809, -809, -809, -809, -809}},
07932 /* AU.@C..CG */
07933 {{ 0, 0, 0, 0, 0},
07934 { -949, -949, -949, -949, -949},
07935 { -449, -449, -449, -449, -449},
07936 { -939, -939, -939, -939, -939},
07937 { -739, -739, -739, -739, -739}},
07938 /* AU.@G..CG */
07939 {{{ 0, 0, 0, 0, 0},
07940 {-1029,-1029,-1029,-1029,-1029},
07941 { -519, -519, -519, -519, -519},
07942 { -939, -939, -939, -939, -939},
07943 { -809, -809, -809, -809, -809}},
07944 /* AU.@U..CG */
07945 {{{ 0, 0, 0, 0, 0},
07946 {-1029,-1029,-1029,-1029,-1029},
07947 { -669, -669, -669, -669, -669},
07948 { -939, -939, -939, -939, -939},
07949 { -859, -859, -859, -859, -859}}}},
07950 /* AU.@A..CG */
07951 {{{ DEF, -429, -599, -599, -599},
07952 { -100, -479, -649, -649, -649},
07953 { -100, -479, -649, -649, -649},
07954 { -100, -479, -649, -649, -649},
07955 { -100, -479, -649, -649, -649}},

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07956 /* AU.AA..CG */
07957 {{ DEF, -429, -599, -599, -599},
07958 {-1079,-1458,-1628,-1628,-1628},
07959 {-569, -948,-1118,-1118,-1118},
07960 {-989,-1368,-1538,-1538,-1538},
07961 {-859,-1238,-1408,-1408,-1408}},
07962 /* AU.AC..CG */
07963 {{ DEF, -429, -599, -599, -599},
07964 {-999,-1378,-1548,-1548,-1548},
07965 {-499, -878,-1048,-1048,-1048},
07966 {-989,-1368,-1538,-1538,-1538},
07967 {-789,-1168,-1338,-1338,-1338}},
07968 /* AU.AG..CG */
07969 {{ DEF, -429, -599, -599, -599},
07970 {-1079,-1458,-1628,-1628,-1628},
07971 {-569, -948,-1118,-1118,-1118},
07972 {-989,-1368,-1538,-1538,-1538},
07973 {-859,-1238,-1408,-1408,-1408}},
07974 /* AU.AU..CG */
07975 {{ DEF, -429, -599, -599, -599},
07976 {-1079,-1458,-1628,-1628,-1628},
07977 {-719,-1098,-1268,-1268,-1268},
07978 {-989,-1368,-1538,-1538,-1538},
07979 {-909,-1288,-1458,-1458,-1458}}},
07980 /* AU.C@..CG */
07981 {{{ DEF, -259, -239, -239, -239},
07982 {-100, -309, -289, -289, -289},
07983 {-100, -309, -289, -289, -289},
07984 {-100, -309, -289, -289, -289},
07985 {-100, -309, -289, -289, -289}}},
07986 /* AU.CA..CG */
07987 {{ DEF, -259, -239, -239, -239},
07988 {-1079,-1288,-1268,-1268,-1268},
07989 {-569, -778, -758, -758, -758},
07990 {-989,-1198,-1178,-1178,-1178},
07991 {-859,-1068,-1048,-1048,-1048}},
07992 /* AU.CC..CG */
07993 {{ DEF, -259, -239, -239, -239},
07994 {-999,-1208,-1188,-1188,-1188},
07995 {-499, -708, -688, -688, -688},
07996 {-989,-1198,-1178,-1178,-1178},
07997 {-789, -998, -978, -978, -978}},
07998 /* AU.CG..CG */
07999 {{ DEF, -259, -239, -239, -239},
08000 {-1079,-1288,-1268,-1268,-1268},
08001 {-569, -778, -758, -758, -758},
08002 {-989,-1198,-1178,-1178,-1178},
08003 {-859,-1068,-1048,-1048,-1048}},
08004 /* AU.CU..CG */
08005 {{ DEF, -259, -239, -239, -239},
08006 {-1079,-1288,-1268,-1268,-1268},
08007 {-719, -928, -908, -908, -908},
08008 {-989,-1198,-1178,-1178,-1178},
08009 {-909,-1118,-1098,-1098,-1098}}},
08010 /* AU.G@..CG */
08011 {{{ DEF, -339, -689, -689, -689},
08012 {-100, -389, -739, -739, -739},
08013 {-100, -389, -739, -739, -739},
08014 {-100, -389, -739, -739, -739},
08015 {-100, -389, -739, -739, -739}}},
08016 /* AU.GA..CG */
08017 {{ DEF, -339, -689, -689, -689},
08018 {-1079,-1368,-1718,-1718,-1718},
08019 {-569, -858,-1208,-1208,-1208},
08020 {-989,-1278,-1628,-1628,-1628},
08021 {-859,-1148,-1498,-1498,-1498}},
08022 /* AU.GC..CG */
08023 {{ DEF, -339, -689, -689, -689},
08024 {-999,-1288,-1638,-1638,-1638},
08025 {-499, -788,-1138,-1138,-1138},
08026 {-989,-1278,-1628,-1628,-1628},
08027 {-789,-1078,-1428,-1428,-1428}},
08028 /* AU.GG..CG */
08029 {{ DEF, -339, -689, -689, -689},
08030 {-1079,-1368,-1718,-1718,-1718},
08031 {-569, -858,-1208,-1208,-1208},
08032 {-989,-1278,-1628,-1628,-1628},
08033 {-859,-1148,-1498,-1498,-1498}},
08034 /* AU.GU..CG */
08035 {{{ DEF, -339, -689, -689, -689},
08036 {-1079,-1368,-1718,-1718,-1718},
08037 {-719,-1008,-1358,-1358,-1358},
08038 {-989,-1278,-1628,-1628,-1628},
08039 {-909,-1198,-1548,-1548,-1548}}},
08040 /* AU.U@..CG */
08041 {{{ DEF, -329, -329, -329, -329},
08042 {-100, -379, -379, -379, -379},
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08043 { -100, -379, -379, -379, -379},
08044 { -100, -379, -379, -379, -379},
08045 { -100, -379, -379, -379, -379}},
08046 /* AU.UA..CG */
08047 {{ DEF, -329, -329, -329, -329},
08048 {-1079,-1358,-1358,-1358,-1358},
08049 {-569, -848, -848, -848, -848},
08050 {-989,-1268,-1268,-1268,-1268},
08051 {-859,-1138,-1138,-1138,-1138}},
08052 /* AU.UC..CG */
08053 {{ DEF, -329, -329, -329, -329},
08054 {-999,-1278,-1278,-1278,-1278},
08055 {-499, -778, -778, -778, -778},
08056 {-989,-1268,-1268,-1268,-1268},
08057 {-789,-1068,-1068,-1068,-1068}},
08058 /* AU.UG..CG */
08059 {{ DEF, -329, -329, -329, -329},
08060 {-1079,-1358,-1358,-1358,-1358},
08061 {-569, -848, -848, -848, -848},
08062 {-989,-1268,-1268,-1268,-1268},
08063 {-859,-1138,-1138,-1138,-1138}},
08064 /* AU.UU..CG */
08065 {{ DEF, -329, -329, -329, -329},
08066 {-1079,-1358,-1358,-1358,-1358},
08067 {-719, -998, -998, -998, -998},
08068 {-989,-1268,-1268,-1268,-1268},
08069 {-909,-1188,-1188,-1188,-1188}}}},
08070 /* AU.@@..GC */
08071 {{{ 0, 0, 0, 0, 0},
08072 { DEF, DEF, DEF, DEF, DEF},
08073 { DEF, DEF, DEF, DEF, DEF},
08074 { DEF, DEF, DEF, DEF, DEF},
08075 { DEF, DEF, DEF, DEF, DEF}}},
08076 /* AU.@A..GC */
08077 {{ 0, 0, 0, 0, 0},
08078 {-519, -519, -519, -519, -519},
08079 {-719, -719, -719, -719, -719},
08080 {-709, -709, -709, -709, -709},
08081 {-499, -499, -499, -499, -499}},
08082 /* AU.@C..GC */
08083 {{ 0, 0, 0, 0, 0},
08084 {-879, -879, -879, -879, -879},
08085 {-309, -309, -309, -309, -309},
08086 {-739, -739, -739, -739, -739},
08087 {-499, -499, -499, -499, -499}},
08088 /* AU.@G..GC */
08089 {{ 0, 0, 0, 0, 0},
08090 {-559, -559, -559, -559, -559},
08091 {-309, -309, -309, -309, -309},
08092 {-619, -619, -619, -619, -619},
08093 {-499, -499, -499, -499, -499}},
08094 /* AU.@U..GC */
08095 {{{ 0, 0, 0, 0, 0},
08096 {-879, -879, -879, -879, -879},
08097 {-389, -389, -389, -389, -389},
08098 {-739, -739, -739, -739, -739},
08099 {-569, -569, -569, -569, -569}}}},
08100 /* AU.A@..GC */
08101 {{{ DEF, -429, -599, -599, -599},
08102 {-100, -479, -649, -649, -649},
08103 {-100, -479, -649, -649, -649},
08104 {-100, -479, -649, -649, -649},
08105 {-100, -479, -649, -649, -649}},
08106 /* AU.AA..GC */
08107 {{ DEF, -429, -599, -599, -599},
08108 {-569, -948,-1118,-1118,-1118},
08109 {-769,-1148,-1318,-1318,-1318},
08110 {-759,-1138,-1308,-1308,-1308},
08111 {-549, -928,-1098,-1098,-1098}},
08112 /* AU.AC..GC */
08113 {{ DEF, -429, -599, -599, -599},
08114 {-929,-1308,-1478,-1478,-1478},
08115 {-359, -738, -908, -908, -908},
08116 {-789,-1168,-1338,-1338,-1338},
08117 {-549, -928,-1098,-1098,-1098}},
08118 /* AU.AG..GC */
08119 {{ DEF, -429, -599, -599, -599},
08120 {-609, -988,-1158,-1158,-1158},
08121 {-359, -738, -908, -908, -908},
08122 {-669,-1048,-1218,-1218,-1218},
08123 {-549, -928,-1098,-1098,-1098}},
08124 /* AU.AU..GC */
08125 {{{ DEF, -429, -599, -599, -599},
08126 {-929,-1308,-1478,-1478,-1478},
08127 {-439, -818, -988, -988, -988},
08128 {-789,-1168,-1338,-1338,-1338},
08129 {-619, -998,-1168,-1168,-1168}}}},

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08130 /* AU.C@.GC */
08131 {{ DEF, -259, -239, -239, -239},
08132 { -100, -309, -289, -289, -289},
08133 { -100, -309, -289, -289, -289},
08134 { -100, -309, -289, -289, -289},
08135 { -100, -309, -289, -289, -289}},
08136 /* AU.CA.GC */
08137 {{ DEF, -259, -239, -239, -239},
08138 { -569, -778, -758, -758, -758},
08139 { -769, -978, -958, -958, -958},
08140 { -759, -968, -948, -948, -948},
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08651 { -379, -658, -658, -658, -658}},
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08652 /* AU.UC..AU */
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08718 /* AU.AG..UA */
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08729 { -190, -569, -739, -739, -739}}},
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09085 /* UA.GU.CG */
09086 {{ DEF, -379, -679, -889, -679},

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09833 { -939, -1268, -1568, -1778, -1568},
09834 { -329, -658, -958, -1168, -958}},
09835 /* UA.GU..UA */
09836 {{ DEF, -379, -679, -889, -679},
09837 { -639, -968, -1268, -1478, -1268},
09838 { -229, -558, -858, -1068, -858},
09839 { -729, -1058, -1358, -1568, -1358},
09840 { -190, -519, -819, -1029, -819}}},
09841 /* UA.U@..UA */
09842 {{{ DEF, -279, -139, -279, -140},
09843 { -100, -329, -189, -329, -190},
09844 { -100, -329, -189, -329, -190},
09845 { -100, -329, -189, -329, -190},
09846 { -100, -329, -189, -329, -190}},
09847 /* UA.UA..UA */
09848 {{ DEF, -279, -139, -279, -140},
09849 { -449, -678, -538, -678, -539},
09850 { -479, -708, -568, -708, -569},
09851 { -429, -658, -518, -658, -519},
09852 { -329, -558, -418, -558, -419}},
09853 /* UA.UC..UA */
09854 {{ DEF, -279, -139, -279, -140},
09855 { -679, -908, -768, -908, -769},
09856 { -559, -788, -648, -788, -649},
09857 { -729, -958, -818, -958, -819},
09858 { -189, -418, -278, -418, -279}},
09859 /* UA.UG..UA */
09860 {{ DEF, -279, -139, -279, -140},
09861 { -939, -1168, -1028, -1168, -1029},
09862 { -249, -478, -338, -478, -339},
09863 { -939, -1168, -1028, -1168, -1029},
09864 { -329, -558, -418, -558, -419}},
09865 /* UA.UU..UA */
09866 {{ DEF, -279, -139, -279, -140},
09867 { -639, -868, -728, -868, -729},
09868 { -229, -458, -318, -458, -319},
09869 { -729, -958, -818, -958, -819},

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09870 { -190, -419, -279, -419, -280}}},
09871 /* UA.@@.. @ */
09872 {{{ DEF, DEF, DEF, DEF, DEF, DEF},
09873 { DEF, DEF, DEF, DEF, DEF, DEF},
09874 { DEF, DEF, DEF, DEF, DEF, DEF},
09875 { DEF, DEF, DEF, DEF, DEF, DEF},
09876 { DEF, DEF, DEF, DEF, DEF, DEF}},
09877 /* UA.@A.. @ */
09878 {{ DEF, DEF, DEF, DEF, DEF, DEF},
09879 { DEF, DEF, DEF, DEF, DEF, DEF},
09880 { DEF, DEF, DEF, DEF, DEF, DEF},
09881 { DEF, DEF, DEF, DEF, DEF, DEF},
09882 { DEF, DEF, DEF, DEF, DEF, DEF}},
09883 /* UA.@C.. @ */
09884 {{ DEF, DEF, DEF, DEF, DEF, DEF},
09885 { DEF, DEF, DEF, DEF, DEF, DEF},
09886 { DEF, DEF, DEF, DEF, DEF, DEF},
09887 { DEF, DEF, DEF, DEF, DEF, DEF},
09888 { DEF, DEF, DEF, DEF, DEF, DEF}},
09889 /* UA.@G.. @ */
09890 {{ DEF, DEF, DEF, DEF, DEF, DEF},
09891 { DEF, DEF, DEF, DEF, DEF, DEF},
09892 { DEF, DEF, DEF, DEF, DEF, DEF},
09893 { DEF, DEF, DEF, DEF, DEF, DEF},
09894 { DEF, DEF, DEF, DEF, DEF, DEF}},
09895 /* UA.@U.. @ */
09896 {{ DEF, DEF, DEF, DEF, DEF, DEF},
09897 { DEF, DEF, DEF, DEF, DEF, DEF},
09898 { DEF, DEF, DEF, DEF, DEF, DEF},
09899 { DEF, DEF, DEF, DEF, DEF, DEF},
09900 { DEF, DEF, DEF, DEF, DEF, DEF}},
09901 /* UA.A@.. @ */
09902 {{{ -100, -449, -679, -939, -639},
09903 { -100, -449, -679, -939, -639},
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09907 /* UA.AA.. @ */
09908 {{ -100, -449, -679, -939, -639},
09909 { -100, -449, -679, -939, -639},
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09912 { -100, -449, -679, -939, -639}},
09913 /* UA.AC.. @ */
09914 {{ -100, -449, -679, -939, -639},
09915 { -100, -449, -679, -939, -639},
09916 { -100, -449, -679, -939, -639},
09917 { -100, -449, -679, -939, -639},
09918 { -100, -449, -679, -939, -639}},
09919 /* UA.AG.. @ */
09920 {{ -100, -449, -679, -939, -639},
09921 { -100, -449, -679, -939, -639},
09922 { -100, -449, -679, -939, -639},
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09924 { -100, -449, -679, -939, -639}},
09925 /* UA.AU.. @ */
09926 {{ -100, -449, -679, -939, -639},
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09928 { -100, -449, -679, -939, -639},
09929 { -100, -449, -679, -939, -639},
09930 { -100, -449, -679, -939, -639}}},
09931 /* UA.C@.. @ */
09932 {{{ -100, -479, -559, -249, -229},
09933 { -100, -479, -559, -249, -229},
09934 { -100, -479, -559, -249, -229},
09935 { -100, -479, -559, -249, -229},
09936 { -100, -479, -559, -249, -229}},
09937 /* UA.CA.. @ */
09938 {{ -100, -479, -559, -249, -229},
09939 { -100, -479, -559, -249, -229},
09940 { -100, -479, -559, -249, -229},
09941 { -100, -479, -559, -249, -229},
09942 { -100, -479, -559, -249, -229}},
09943 /* UA.CC.. @ */
09944 {{ -100, -479, -559, -249, -229},
09945 { -100, -479, -559, -249, -229},
09946 { -100, -479, -559, -249, -229},
09947 { -100, -479, -559, -249, -229},
09948 { -100, -479, -559, -249, -229}},
09949 /* UA.CG.. @ */
09950 {{ -100, -479, -559, -249, -229},
09951 { -100, -479, -559, -249, -229},
09952 { -100, -479, -559, -249, -229},
09953 { -100, -479, -559, -249, -229},
09954 { -100, -479, -559, -249, -229}},
09955 /* UA.CU.. @ */
09956 {{ -100, -479, -559, -249, -229},
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09957 { -100, -479, -559, -249, -229},
09958 { -100, -479, -559, -249, -229},
09959 { -100, -479, -559, -249, -229},
09960 { -100, -479, -559, -249, -229}},
09961 /* UA.G@.. @ */
09962 {{{ -100, -429, -729, -939, -729},
09963 { -100, -429, -729, -939, -729},
09964 { -100, -429, -729, -939, -729},
09965 { -100, -429, -729, -939, -729},
09966 { -100, -429, -729, -939, -729}},
09967 /* UA.GA.. @ */
09968 {{{ -100, -429, -729, -939, -729},
09969 { -100, -429, -729, -939, -729},
09970 { -100, -429, -729, -939, -729},
09971 { -100, -429, -729, -939, -729},
09972 { -100, -429, -729, -939, -729}},
09973 /* UA.GC.. @ */
09974 {{{ -100, -429, -729, -939, -729},
09975 { -100, -429, -729, -939, -729},
09976 { -100, -429, -729, -939, -729},
09977 { -100, -429, -729, -939, -729},
09978 { -100, -429, -729, -939, -729}},
09979 /* UA.GG.. @ */
09980 {{{ -100, -429, -729, -939, -729},
09981 { -100, -429, -729, -939, -729},
09982 { -100, -429, -729, -939, -729},
09983 { -100, -429, -729, -939, -729},
09984 { -100, -429, -729, -939, -729}},
09985 /* UA.GU.. @ */
09986 {{{ -100, -429, -729, -939, -729},
09987 { -100, -429, -729, -939, -729},
09988 { -100, -429, -729, -939, -729},
09989 { -100, -429, -729, -939, -729},
09990 { -100, -429, -729, -939, -729}},
09991 /* UA.U@.. @ */
09992 {{{ -100, -329, -189, -329, -190},
09993 { -100, -329, -189, -329, -190},
09994 { -100, -329, -189, -329, -190},
09995 { -100, -329, -189, -329, -190},
09996 { -100, -329, -189, -329, -190}},
09997 /* UA.UA.. @ */
09998 {{{ -100, -329, -189, -329, -190},
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10002 { -100, -329, -189, -329, -190}},
10003 /* UA.UC.. @ */
10004 {{{ -100, -329, -189, -329, -190},
10005 { -100, -329, -189, -329, -190},
10006 { -100, -329, -189, -329, -190},
10007 { -100, -329, -189, -329, -190},
10008 { -100, -329, -189, -329, -190}},
10009 /* UA.UG.. @ */
10010 {{{ -100, -329, -189, -329, -190},
10011 { -100, -329, -189, -329, -190},
10012 { -100, -329, -189, -329, -190},
10013 { -100, -329, -189, -329, -190},
10014 { -100, -329, -189, -329, -190}},
10015 /* UA.UU.. @ */
10016 {{{ -100, -329, -189, -329, -190},
10017 { -100, -329, -189, -329, -190},
10018 { -100, -329, -189, -329, -190},
10019 { -100, -329, -189, -329, -190},
10020 { -100, -329, -189, -329, -190}}}},
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10022 /* @.@@..CG */
10023 {{{{ DEF, DEF, DEF, DEF, DEF},
10024 { -100, -100, -100, -100, -100},
10025 { -100, -100, -100, -100, -100},
10026 { -100, -100, -100, -100, -100},
10027 { -100, -100, -100, -100, -100}},
10028 /* @.@A..CG */
10029 {{{ DEF, DEF, DEF, DEF, DEF},
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10033 { -859, -859, -859, -859, -859}},
10034 /* @.@C..CG */
10035 {{{ DEF, DEF, DEF, DEF, DEF},
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10037 { -499, -499, -499, -499, -499},
10038 { -989, -989, -989, -989, -989},
10039 { -789, -789, -789, -789, -789}},
10040 /* @.@G..CG */
10041 {{{ DEF, DEF, DEF, DEF, DEF},
10042 {-1079,-1079,-1079,-1079,-1079},
10043 { -569, -569, -569, -569, -569},

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10044 { -989, -989, -989, -989, -989},
10045 { -859, -859, -859, -859, -859}},
10046 /* @.U..CG */
10047 {{ DEF, DEF, DEF, DEF, DEF},
10048 {-1079,-1079,-1079,-1079,-1079},
10049 { -719, -719, -719, -719, -719},
10050 { -989, -989, -989, -989, -989},
10051 { -909, -909, -909, -909, -909}}},
10052 /* @.A@..CG */
10053 {{{ DEF, DEF, DEF, DEF, DEF},
10054 { -100, -100, -100, -100, -100},
10055 { -100, -100, -100, -100, -100},
10056 { -100, -100, -100, -100, -100},
10057 { -100, -100, -100, -100, -100}},
10058 /* @.AA..CG */
10059 {{ DEF, DEF, DEF, DEF, DEF},
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10063 { -859, -859, -859, -859, -859}},
10064 /* @.AC..CG */
10065 {{ DEF, DEF, DEF, DEF, DEF},
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10069 { -789, -789, -789, -789, -789}},
10070 /* @.AG..CG */
10071 {{ DEF, DEF, DEF, DEF, DEF},
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10074 { -989, -989, -989, -989, -989},
10075 { -859, -859, -859, -859, -859}},
10076 /* @.AU..CG */
10077 {{ DEF, DEF, DEF, DEF, DEF},
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10081 { -909, -909, -909, -909, -909}}},
10082 /* @.C@..CG */
10083 {{{ DEF, DEF, DEF, DEF, DEF},
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10085 { -100, -100, -100, -100, -100},
10086 { -100, -100, -100, -100, -100},
10087 { -100, -100, -100, -100, -100}},
10088 /* @.CA..CG */
10089 {{ DEF, DEF, DEF, DEF, DEF},
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10091 { -569, -569, -569, -569, -569},
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10093 { -859, -859, -859, -859, -859}},
10094 /* @.CC..CG */
10095 {{ DEF, DEF, DEF, DEF, DEF},
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10099 { -789, -789, -789, -789, -789}},
10100 /* @.CG..CG */
10101 {{ DEF, DEF, DEF, DEF, DEF},
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10104 { -989, -989, -989, -989, -989},
10105 { -859, -859, -859, -859, -859}},
10106 /* @.CU..CG */
10107 {{ DEF, DEF, DEF, DEF, DEF},
10108 {-1079,-1079,-1079,-1079,-1079},
10109 { -719, -719, -719, -719, -719},
10110 { -989, -989, -989, -989, -989},
10111 { -909, -909, -909, -909, -909}}},
10112 /* @.G@..CG */
10113 {{{ DEF, DEF, DEF, DEF, DEF},
10114 { -100, -100, -100, -100, -100},
10115 { -100, -100, -100, -100, -100},
10116 { -100, -100, -100, -100, -100},
10117 { -100, -100, -100, -100, -100}},
10118 /* @.GA..CG */
10119 {{ DEF, DEF, DEF, DEF, DEF},
10120 {-1079,-1079,-1079,-1079,-1079},
10121 { -569, -569, -569, -569, -569},
10122 { -989, -989, -989, -989, -989},
10123 { -859, -859, -859, -859, -859}},
10124 /* @.GC..CG */
10125 {{ DEF, DEF, DEF, DEF, DEF},
10126 { -999, -999, -999, -999, -999},
10127 { -499, -499, -499, -499, -499},
10128 { -989, -989, -989, -989, -989},
10129 { -789, -789, -789, -789, -789}},
10130 /* @.GG..CG */
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10131 {{ DEF, DEF, DEF, DEF, DEF},
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10133 { -569, -569, -569, -569, -569},
10134 { -989, -989, -989, -989, -989},
10135 { -859, -859, -859, -859, -859}},
10136 /* @.GU..CG */
10137 {{ DEF, DEF, DEF, DEF, DEF},
10138 {-1079,-1079,-1079,-1079,-1079},
10139 { -719, -719, -719, -719, -719},
10140 { -989, -989, -989, -989, -989},
10141 { -909, -909, -909, -909, -909}},
10142 /* @.U@..CG */
10143 {{{ DEF, DEF, DEF, DEF, DEF},
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10145 { -100, -100, -100, -100, -100},
10146 { -100, -100, -100, -100, -100},
10147 { -100, -100, -100, -100, -100}},
10148 /* @.UA..CG */
10149 {{ DEF, DEF, DEF, DEF, DEF},
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10151 { -569, -569, -569, -569, -569},
10152 { -989, -989, -989, -989, -989},
10153 { -859, -859, -859, -859, -859}},
10154 /* @.UC..CG */
10155 {{ DEF, DEF, DEF, DEF, DEF},
10156 { -999, -999, -999, -999, -999},
10157 { -499, -499, -499, -499, -499},
10158 { -989, -989, -989, -989, -989},
10159 { -789, -789, -789, -789, -789}},
10160 /* @.UG..CG */
10161 {{ DEF, DEF, DEF, DEF, DEF},
10162 {-1079,-1079,-1079,-1079,-1079},
10163 { -569, -569, -569, -569, -569},
10164 { -989, -989, -989, -989, -989},
10165 { -859, -859, -859, -859, -859}},
10166 /* @.UU..CG */
10167 {{ DEF, DEF, DEF, DEF, DEF},
10168 {-1079,-1079,-1079,-1079,-1079},
10169 { -719, -719, -719, -719, -719},
10170 { -989, -989, -989, -989, -989},
10171 { -909, -909, -909, -909, -909}}},
10172 /* @.@@..GC */
10173 {{{ DEF, DEF, DEF, DEF, DEF},
10174 { -100, -100, -100, -100, -100},
10175 { -100, -100, -100, -100, -100},
10176 { -100, -100, -100, -100, -100},
10177 { -100, -100, -100, -100, -100}},
10178 /* @.@A..GC */
10179 {{ DEF, DEF, DEF, DEF, DEF},
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10181 { -769, -769, -769, -769, -769},
10182 { -759, -759, -759, -759, -759},
10183 { -549, -549, -549, -549, -549}},
10184 /* @.@C..GC */
10185 {{ DEF, DEF, DEF, DEF, DEF},
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10187 { -359, -359, -359, -359, -359},
10188 { -789, -789, -789, -789, -789},
10189 { -549, -549, -549, -549, -549}},
10190 /* @.@G..GC */
10191 {{ DEF, DEF, DEF, DEF, DEF},
10192 { -609, -609, -609, -609, -609},
10193 { -359, -359, -359, -359, -359},
10194 { -669, -669, -669, -669, -669},
10195 { -549, -549, -549, -549, -549}},
10196 /* @.@U..GC */
10197 {{ DEF, DEF, DEF, DEF, DEF},
10198 { -929, -929, -929, -929, -929},
10199 { -439, -439, -439, -439, -439},
10200 { -789, -789, -789, -789, -789},
10201 { -619, -619, -619, -619, -619}}},
10202 /* @.@A@..GC */
10203 {{{ DEF, DEF, DEF, DEF, DEF},
10204 { -100, -100, -100, -100, -100},
10205 { -100, -100, -100, -100, -100},
10206 { -100, -100, -100, -100, -100},
10207 { -100, -100, -100, -100, -100}},
10208 /* @.AA..GC */
10209 {{ DEF, DEF, DEF, DEF, DEF},
10210 { -569, -569, -569, -569, -569},
10211 { -769, -769, -769, -769, -769},
10212 { -759, -759, -759, -759, -759},
10213 { -549, -549, -549, -549, -549}},
10214 /* @.AC..GC */
10215 {{ DEF, DEF, DEF, DEF, DEF},
10216 { -929, -929, -929, -929, -929},
10217 { -359, -359, -359, -359, -359},
```

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10218 { -789, -789, -789, -789, -789},
10219 { -549, -549, -549, -549, -549}},
10220 /* @.AG..GC */
10221 {{ DEF, DEF, DEF, DEF, DEF},
10222 { -609, -609, -609, -609, -609},
10223 { -359, -359, -359, -359, -359},
10224 { -669, -669, -669, -669, -669},
10225 { -549, -549, -549, -549, -549}},
10226 /* @.AU..GC */
10227 {{ DEF, DEF, DEF, DEF, DEF},
10228 { -929, -929, -929, -929, -929},
10229 { -439, -439, -439, -439, -439},
10230 { -789, -789, -789, -789, -789},
10231 { -619, -619, -619, -619, -619}}},
10232 /* @.C@..GC */
10233 {{{ DEF, DEF, DEF, DEF, DEF},
10234 { -100, -100, -100, -100, -100},
10235 { -100, -100, -100, -100, -100},
10236 { -100, -100, -100, -100, -100},
10237 { -100, -100, -100, -100, -100}},
10238 /* @.CA..GC */
10239 {{ DEF, DEF, DEF, DEF, DEF},
10240 { -569, -569, -569, -569, -569},
10241 { -769, -769, -769, -769, -769},
10242 { -759, -759, -759, -759, -759},
10243 { -549, -549, -549, -549, -549}},
10244 /* @.CC..GC */
10245 {{ DEF, DEF, DEF, DEF, DEF},
10246 { -929, -929, -929, -929, -929},
10247 { -359, -359, -359, -359, -359},
10248 { -789, -789, -789, -789, -789},
10249 { -549, -549, -549, -549, -549}},
10250 /* @.CG..GC */
10251 {{ DEF, DEF, DEF, DEF, DEF},
10252 { -609, -609, -609, -609, -609},
10253 { -359, -359, -359, -359, -359},
10254 { -669, -669, -669, -669, -669},
10255 { -549, -549, -549, -549, -549}},
10256 /* @.CU..GC */
10257 {{ DEF, DEF, DEF, DEF, DEF},
10258 { -929, -929, -929, -929, -929},
10259 { -439, -439, -439, -439, -439},
10260 { -789, -789, -789, -789, -789},
10261 { -619, -619, -619, -619, -619}}},
10262 /* @.G@..GC */
10263 {{{ DEF, DEF, DEF, DEF, DEF},
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10710 { -739, -739, -739, -739, -739 },
10711 { -379, -379, -379, -379, -379 },
10712 /* @.G@..AU */
10713 {{ DEF, DEF, DEF, DEF, DEF },
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10715 { -100, -100, -100, -100, -100 },
10716 { -100, -100, -100, -100, -100 },
10717 { -100, -100, -100, -100, -100 },
10718 /* @.GA..AU */
10719 {{ DEF, DEF, DEF, DEF, DEF },
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10721 { -309, -309, -309, -309, -309 },
10722 { -389, -389, -389, -389, -389 },
10723 { -379, -379, -379, -379, -379 },
10724 /* @.GC..AU */
10725 {{ DEF, DEF, DEF, DEF, DEF },
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10727 { -289, -289, -289, -289, -289 },
10728 { -739, -739, -739, -739, -739 },
10729 { -379, -379, -379, -379, -379 },
10730 /* @.GG..AU */
10731 {{ DEF, DEF, DEF, DEF, DEF },
10732 { -649, -649, -649, -649, -649 },
10733 { -289, -289, -289, -289, -289 },
10734 { -739, -739, -739, -739, -739 },
10735 { -379, -379, -379, -379, -379 },
10736 /* @.GU..AU */
10737 {{ DEF, DEF, DEF, DEF, DEF },
10738 { -649, -649, -649, -649, -649 },
10739 { -289, -289, -289, -289, -289 },
```



```
10740 { -739, -739, -739, -739, -739},
10741 { -379, -379, -379, -379, -379}},
10742 /* @.U@..AU */
10743 {{ DEF, DEF, DEF, DEF, DEF},
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10747 { -100, -100, -100, -100, -100}},
10748 /* @.UA..AU */
10749 {{ DEF, DEF, DEF, DEF, DEF},
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10752 { -389, -389, -389, -389, -389},
10753 { -379, -379, -379, -379, -379}},
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10759 { -379, -379, -379, -379, -379}},
10760 /* @.UG..AU */
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10765 { -379, -379, -379, -379, -379}},
10766 /* @.UU..AU */
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10769 { -289, -289, -289, -289, -289},
10770 { -739, -739, -739, -739, -739},
10771 { -379, -379, -379, -379, -379}}}},
10772 /* @.@@..UA */
10773 {{{ DEF, DEF, DEF, DEF, DEF},
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10776 { -100, -100, -100, -100, -100},
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10778 /* @.A@..UA */
10779 {{ DEF, DEF, DEF, DEF, DEF},
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10782 { -429, -429, -429, -429, -429},
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10784 /* @.C@..UA */
10785 {{ DEF, DEF, DEF, DEF, DEF},
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10787 { -559, -559, -559, -559, -559},
10788 { -729, -729, -729, -729, -729},
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10790 /* @.G@..UA */
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10796 /* @.U@..UA */
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10800 { -729, -729, -729, -729, -729},
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10803 {{{ DEF, DEF, DEF, DEF, DEF},
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10807 { -100, -100, -100, -100, -100}},
10808 /* @.AA..UA */
10809 {{ DEF, DEF, DEF, DEF, DEF},
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10811 { -479, -479, -479, -479, -479},
10812 { -429, -429, -429, -429, -429},
10813 { -329, -329, -329, -329, -329}},
10814 /* @.AC..UA */
10815 {{ DEF, DEF, DEF, DEF, DEF},
10816 { -679, -679, -679, -679, -679},
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10819 { -189, -189, -189, -189, -189}},
10820 /* @.AG..UA */
10821 {{ DEF, DEF, DEF, DEF, DEF},
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10824 { -939, -939, -939, -939, -939},
10825 { -329, -329, -329, -329, -329}},
10826 /* @.AU..UA */
```

```
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10832 /* @.C@.UA */
10833 {{{ DEF, DEF, DEF, DEF, DEF},
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10835 { -100, -100, -100, -100, -100},
10836 { -100, -100, -100, -100, -100},
10837 { -100, -100, -100, -100, -100}},
10838 /* @.CA..UA */
10839 {{ DEF, DEF, DEF, DEF, DEF},
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10842 { -429, -429, -429, -429, -429},
10843 { -329, -329, -329, -329, -329}},
10844 /* @.CC..UA */
10845 {{ DEF, DEF, DEF, DEF, DEF},
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10849 { -189, -189, -189, -189, -189}},
10850 /* @.CG..UA */
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10856 /* @.CU..UA */
10857 {{ DEF, DEF, DEF, DEF, DEF},
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10863 {{{ DEF, DEF, DEF, DEF, DEF},
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10866 { -100, -100, -100, -100, -100},
10867 { -100, -100, -100, -100, -100}},
10868 /* @.GA..UA */
10869 {{ DEF, DEF, DEF, DEF, DEF},
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10898 /* @.UA..UA */
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10909 { -189, -189, -189, -189, -189}},
10910 /* @.UG..UA */
10911 {{ DEF, DEF, DEF, DEF, DEF},
10912 { -939, -939, -939, -939, -939},
10913 { -249, -249, -249, -249, -249},
```

```
10914 { -939, -939, -939, -939, -939},
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10922 /* @.@@.. @ */
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10928 /* @.A@.. @ */
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10930 { -100, -100, -100, -100, -100},
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10934 /* @.C@.. @ */
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10940 /* @.G@.. @ */
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10946 /* @.U@.. @ */
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10952 /* @.A@.. @ */
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10958 /* @.AA@.. @ */
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10964 /* @.AC@.. @ */
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10970 /* @.AG@.. @ */
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10981 { -100, -100, -100, -100, -100}},
10982 /* @.C@.. @ */
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10987 { -100, -100, -100, -100, -100}},
10988 /* @.CA@.. @ */
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10994 /* @.CC@.. @ */
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10999 { -100, -100, -100, -100, -100}},
11000 /* @.CG@.. @ */
```

```

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11006 /* @.CU.. @ */
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11012 /* @.G@.. @ */
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11018 /* @.GA.. @ */
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11024 /* @.GC.. @ */
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11030 /* @.GG.. @ */
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11036 /* @.GU.. @ */
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11041 { -100, -100, -100, -100, -100}},
11042 /* @.U@.. @ */
11043 {{{ -100, -100, -100, -100, -100},
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11047 { -100, -100, -100, -100, -100}},
11048 /* @.UA.. @ */
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11054 /* @.UC.. @ */
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11059 { -100, -100, -100, -100, -100}},
11060 /* @.UG.. @ */
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11064 { -100, -100, -100, -100, -100},
11065 { -100, -100, -100, -100, -100}},
11066 /* @.UU.. @ */
11067 {{ -100, -100, -100, -100, -100},
11068 { -100, -100, -100, -100, -100},
11069 { -100, -100, -100, -100, -100},
11070 { -100, -100, -100, -100, -100},
11071 { -100, -100, -100, -100, -100}}}}};
11072
11073

```

11.88 intl11.h

```

00001 PUBLIC int intl11_37[NBPAIRS+1][NBPAIRS+1][5][5] =
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00003 , { INF, INF, INF, INF, INF } /* NP,NP,A */
00004 , { INF, INF, INF, INF, INF } /* NP,NP,C */
00005 , { INF, INF, INF, INF, INF } /* NP,NP,G */
00006 , { INF, INF, INF, INF, INF } /* NP,NP,U */
00007 }
00008 , {{{ INF, INF, INF, INF, INF } /* NP,CG,E */
00009 , { INF, INF, INF, INF, INF } /* NP,CG,A */

```

```
00010 , { INF, INF, INF, INF, INF } /* NP,CG,C */
00011 , { INF, INF, INF, INF, INF } /* NP,CG,G */
00012 , { INF, INF, INF, INF, INF } /* NP,CG,U */
00013 }
00014 , { { INF, INF, INF, INF, INF } /* NP,GC,E */
00015 , { INF, INF, INF, INF, INF } /* NP,GC,A */
00016 , { INF, INF, INF, INF, INF } /* NP,GC,C */
00017 , { INF, INF, INF, INF, INF } /* NP,GC,G */
00018 , { INF, INF, INF, INF, INF } /* NP,GC,U */
00019 }
00020 , { { INF, INF, INF, INF, INF } /* NP,GU,E */
00021 , { INF, INF, INF, INF, INF } /* NP,GU,A */
00022 , { INF, INF, INF, INF, INF } /* NP,GU,C */
00023 , { INF, INF, INF, INF, INF } /* NP,GU,G */
00024 , { INF, INF, INF, INF, INF } /* NP,GU,U */
00025 }
00026 , { { INF, INF, INF, INF, INF } /* NP,UG,E */
00027 , { INF, INF, INF, INF, INF } /* NP,UG,A */
00028 , { INF, INF, INF, INF, INF } /* NP,UG,C */
00029 , { INF, INF, INF, INF, INF } /* NP,UG,G */
00030 , { INF, INF, INF, INF, INF } /* NP,UG,U */
00031 }
00032 , { { INF, INF, INF, INF, INF } /* NP,AU,E */
00033 , { INF, INF, INF, INF, INF } /* NP,AU,A */
00034 , { INF, INF, INF, INF, INF } /* NP,AU,C */
00035 , { INF, INF, INF, INF, INF } /* NP,AU,G */
00036 , { INF, INF, INF, INF, INF } /* NP,AU,U */
00037 }
00038 , { { INF, INF, INF, INF, INF } /* NP,UA,E */
00039 , { INF, INF, INF, INF, INF } /* NP,UA,A */
00040 , { INF, INF, INF, INF, INF } /* NP,UA,C */
00041 , { INF, INF, INF, INF, INF } /* NP,UA,G */
00042 , { INF, INF, INF, INF, INF } /* NP,UA,U */
00043 }
00044 , { { INF, INF, INF, INF, INF } /* NP,NN,E */
00045 , { INF, INF, INF, INF, INF } /* NP,NN,A */
00046 , { INF, INF, INF, INF, INF } /* NP,NN,C */
00047 , { INF, INF, INF, INF, INF } /* NP,NN,G */
00048 , { INF, INF, INF, INF, INF } /* NP,NN,U */
00049 }
00050 }
00051 , { { { INF, INF, INF, INF, INF } /* CG,NP,E */
00052 , { INF, INF, INF, INF, INF } /* CG,NP,A */
00053 , { INF, INF, INF, INF, INF } /* CG,NP,C */
00054 , { INF, INF, INF, INF, INF } /* CG,NP,G */
00055 , { INF, INF, INF, INF, INF } /* CG,NP,U */
00056 }
00057 , { { 90, 90, 50, 50, 50 } /* CG,CG,E */
00058 , { 90, 90, 50, 50, 50 } /* CG,CG,A */
00059 , { 50, 50, 50, 50, 50 } /* CG,CG,C */
00060 , { 50, 50, 50, -140, 50 } /* CG,CG,G */
00061 , { 50, 50, 50, 50, 40 } /* CG,CG,U */
00062 }
00063 , { { 90, 90, 50, 50, 60 } /* CG,GC,E */
00064 , { 90, 90, -40, 50, 50 } /* CG,GC,A */
00065 , { 60, 30, 50, 50, 60 } /* CG,GC,C */
00066 , { 50, -10, 50, -220, 50 } /* CG,GC,G */
00067 , { 50, 50, 0, 50, -10 } /* CG,GC,U */
00068 }
00069 , { { 120, 120, 120, 120, 120 } /* CG,GU,E */
00070 , { 120, 60, 50, 120, 120 } /* CG,GU,A */
00071 , { 120, 120, 120, 120, 120 } /* CG,GU,C */
00072 , { 120, -20, 120, -140, 120 } /* CG,GU,G */
00073 , { 120, 120, 100, 120, 110 } /* CG,GU,U */
00074 }
00075 , { { 220, 220, 170, 120, 120 } /* CG,UG,E */
00076 , { 220, 220, 130, 120, 120 } /* CG,UG,A */
00077 , { 170, 120, 170, 120, 120 } /* CG,UG,C */
00078 , { 120, 120, 120, -140, 120 } /* CG,UG,G */
00079 , { 120, 120, 120, 120, 110 } /* CG,UG,U */
00080 }
00081 , { { 120, 120, 120, 120, 120 } /* CG,AU,E */
00082 , { 120, 120, 120, 120, 120 } /* CG,AU,A */
00083 , { 120, 120, 120, 120, 120 } /* CG,AU,C */
00084 , { 120, 120, 120, -140, 120 } /* CG,AU,G */
00085 , { 120, 120, 120, 120, 80 } /* CG,AU,U */
00086 }
00087 , { { 120, 120, 120, 120, 120 } /* CG,UA,E */
00088 , { 120, 120, 120, 120, 120 } /* CG,UA,A */
00089 , { 120, 120, 120, 120, 120 } /* CG,UA,C */
00090 , { 120, 120, 120, -140, 120 } /* CG,UA,G */
00091 , { 120, 120, 120, 120, 120 } /* CG,UA,U */
00092 }
00093 , { { 220, 220, 170, 120, 120 } /* CG,NN,E */
00094 , { 220, 220, 130, 120, 120 } /* CG,NN,A */
00095 , { 170, 120, 170, 120, 120 } /* CG,NN,C */
00096 , { 120, 120, 120, -140, 120 } /* CG,NN,G */
```

```

00097 ,{ 120, 120, 120, 120, 120} /* CG,NN,U */
00098 }
00099 }
00100 ,{{ INF, INF, INF, INF, INF} /* GC,NP,E */
00101 ,{ INF, INF, INF, INF, INF} /* GC,NP,A */
00102 ,{ INF, INF, INF, INF, INF} /* GC,NP,C */
00103 ,{ INF, INF, INF, INF, INF} /* GC,NP,G */
00104 ,{ INF, INF, INF, INF, INF} /* GC,NP,U */
00105 }
00106 ,{{ 90, 90, 60, 50, 50} /* GC,CG,E */
00107 ,{ 90, 90, 30, -10, 50} /* GC,CG,A */
00108 ,{ 50, -40, 50, 50, 0} /* GC,CG,C */
00109 ,{ 50, 50, 50, -220, 50} /* GC,CG,G */
00110 ,{ 60, 50, 60, 50, -10} /* GC,CG,U */
00111 }
00112 ,{{ 80, 80, 50, 50, 50} /* GC,GC,E */
00113 ,{ 80, 80, 50, 50, 50} /* GC,GC,A */
00114 ,{ 50, 50, 50, 50, 50} /* GC,GC,C */
00115 ,{ 50, 50, 50, -230, 50} /* GC,GC,G */
00116 ,{ 50, 50, 50, 50, -60} /* GC,GC,U */
00117 }
00118 ,{{ 190, 190, 120, 150, 150} /* GC,GU,E */
00119 ,{ 190, 190, 120, 150, 120} /* GC,GU,A */
00120 ,{ 120, 120, 120, 120, 120} /* GC,GU,C */
00121 ,{ 120, 120, 120, -140, 120} /* GC,GU,G */
00122 ,{ 150, 120, 120, 120, 150} /* GC,GU,U */
00123 }
00124 ,{{ 160, 160, 120, 120, 120} /* GC,UG,E */
00125 ,{ 160, 160, 120, 100, 120} /* GC,UG,A */
00126 ,{ 120, 120, 120, 120, 120} /* GC,UG,C */
00127 ,{ 120, 120, 120, -140, 120} /* GC,UG,G */
00128 ,{ 120, 120, 120, 120, 70} /* GC,UG,U */
00129 }
00130 ,{{ 120, 120, 120, 120, 120} /* GC,AU,E */
00131 ,{ 120, 120, 120, 120, 120} /* GC,AU,A */
00132 ,{ 120, 120, 120, 120, 120} /* GC,AU,C */
00133 ,{ 120, 120, 120, -140, 120} /* GC,AU,G */
00134 ,{ 120, 120, 120, 120, 80} /* GC,AU,U */
00135 }
00136 ,{{ 120, 120, 120, 120, 120} /* GC,UA,E */
00137 ,{ 120, 120, 120, 120, 120} /* GC,UA,A */
00138 ,{ 120, 120, 120, 120, 120} /* GC,UA,C */
00139 ,{ 120, 120, 120, -140, 120} /* GC,UA,G */
00140 ,{ 120, 120, 120, 120, 120} /* GC,UA,U */
00141 }
00142 ,{{ 190, 190, 120, 150, 150} /* GC,NN,E */
00143 ,{ 190, 190, 120, 150, 120} /* GC,NN,A */
00144 ,{ 120, 120, 120, 120, 120} /* GC,NN,C */
00145 ,{ 120, 120, 120, -140, 120} /* GC,NN,G */
00146 ,{ 150, 120, 120, 120, 150} /* GC,NN,U */
00147 }
00148 }
00149 ,{{ INF, INF, INF, INF, INF} /* GU,NP,E */
00150 ,{ INF, INF, INF, INF, INF} /* GU,NP,A */
00151 ,{ INF, INF, INF, INF, INF} /* GU,NP,C */
00152 ,{ INF, INF, INF, INF, INF} /* GU,NP,G */
00153 ,{ INF, INF, INF, INF, INF} /* GU,NP,U */
00154 }
00155 ,{{ 120, 120, 120, 120, 120} /* GU,CG,E */
00156 ,{ 120, 60, 120, -20, 120} /* GU,CG,A */
00157 ,{ 120, 50, 120, 120, 100} /* GU,CG,C */
00158 ,{ 120, 120, 120, -140, 120} /* GU,CG,G */
00159 ,{ 120, 120, 120, 120, 110} /* GU,CG,U */
00160 }
00161 ,{{ 190, 190, 120, 120, 150} /* GU,GC,E */
00162 ,{ 190, 190, 120, 120, 120} /* GU,GC,A */
00163 ,{ 120, 120, 120, 120, 120} /* GU,GC,C */
00164 ,{ 150, 150, 120, -140, 120} /* GU,GC,G */
00165 ,{ 150, 120, 120, 120, 150} /* GU,GC,U */
00166 }
00167 ,{{ 190, 190, 190, 190, 190} /* GU,GU,E */
00168 ,{ 190, 190, 190, 190, 190} /* GU,GU,A */
00169 ,{ 190, 190, 190, 190, 190} /* GU,GU,C */
00170 ,{ 190, 190, 190, -70, 190} /* GU,GU,G */
00171 ,{ 190, 190, 190, 190, 120} /* GU,GU,U */
00172 }
00173 ,{{ 190, 190, 190, 190, 190} /* GU,UG,E */
00174 ,{ 190, 190, 190, 190, 190} /* GU,UG,A */
00175 ,{ 190, 190, 190, 190, 190} /* GU,UG,C */
00176 ,{ 190, 190, 190, -70, 190} /* GU,UG,G */
00177 ,{ 190, 190, 190, 190, 160} /* GU,UG,U */
00178 }
00179 ,{{ 190, 190, 190, 190, 190} /* GU,AU,E */
00180 ,{ 190, 190, 190, 190, 190} /* GU,AU,A */
00181 ,{ 190, 190, 190, 190, 190} /* GU,AU,C */
00182 ,{ 190, 190, 190, -70, 190} /* GU,AU,G */
00183 ,{ 190, 190, 190, 190, 120} /* GU,AU,U */

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00184 }
00185 ,{{ 190, 190, 190, 190, 190} /* GU,UA,E */
00186 ,{ 190, 190, 190, 190, 190} /* GU,UA,A */
00187 ,{ 190, 190, 190, 190, 190} /* GU,UA,C */
00188 ,{ 190, 190, 190, -70, 190} /* GU,UA,G */
00189 ,{ 190, 190, 190, 190, 160} /* GU,UA,U */
00190 }
00191 ,{{ 190, 190, 190, 190, 190} /* GU,NN,E */
00192 ,{ 190, 190, 190, 190, 190} /* GU,NN,A */
00193 ,{ 190, 190, 190, 190, 190} /* GU,NN,C */
00194 ,{ 190, 190, 190, -70, 190} /* GU,NN,G */
00195 ,{ 190, 190, 190, 190, 160} /* GU,NN,U */
00196 }
00197 }
00198 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E */
00199 ,{ INF, INF, INF, INF, INF} /* UG,NP,A */
00200 ,{ INF, INF, INF, INF, INF} /* UG,NP,C */
00201 ,{ INF, INF, INF, INF, INF} /* UG,NP,G */
00202 ,{ INF, INF, INF, INF, INF} /* UG,NP,U */
00203 }
00204 ,{{ 220, 220, 170, 120, 120} /* UG,CG,E */
00205 ,{ 220, 220, 120, 120, 120} /* UG,CG,A */
00206 ,{ 170, 130, 170, 120, 120} /* UG,CG,C */
00207 ,{ 120, 120, 120, -140, 120} /* UG,CG,G */
00208 ,{ 120, 120, 120, 120, 110} /* UG,CG,U */
00209 }
00210 ,{{ 160, 160, 120, 120, 120} /* UG,GC,E */
00211 ,{ 160, 160, 120, 120, 120} /* UG,GC,A */
00212 ,{ 120, 120, 120, 120, 120} /* UG,GC,C */
00213 ,{ 120, 100, 120, -140, 120} /* UG,GC,G */
00214 ,{ 120, 120, 120, 120, 70} /* UG,GC,U */
00215 }
00216 ,{{ 190, 190, 190, 190, 190} /* UG,GU,E */
00217 ,{ 190, 190, 190, 190, 190} /* UG,GU,A */
00218 ,{ 190, 190, 190, 190, 190} /* UG,GU,C */
00219 ,{ 190, 190, 190, -70, 190} /* UG,GU,G */
00220 ,{ 190, 190, 190, 190, 160} /* UG,GU,U */
00221 }
00222 ,{{ 190, 190, 190, 190, 190} /* UG,UG,E */
00223 ,{ 190, 190, 190, 190, 190} /* UG,UG,A */
00224 ,{ 190, 190, 190, 190, 190} /* UG,UG,C */
00225 ,{ 190, 190, 190, -70, 190} /* UG,UG,G */
00226 ,{ 190, 190, 190, 190, 190} /* UG,UG,U */
00227 }
00228 ,{{ 190, 190, 190, 190, 190} /* UG,AU,E */
00229 ,{ 190, 190, 190, 190, 190} /* UG,AU,A */
00230 ,{ 190, 190, 190, 190, 190} /* UG,AU,C */
00231 ,{ 190, 190, 190, -70, 190} /* UG,AU,G */
00232 ,{ 190, 190, 190, 190, 160} /* UG,AU,U */
00233 }
00234 ,{{ 190, 190, 190, 190, 190} /* UG,UA,E */
00235 ,{ 190, 190, 190, 190, 190} /* UG,UA,A */
00236 ,{ 190, 190, 190, 190, 190} /* UG,UA,C */
00237 ,{ 190, 190, 190, -70, 190} /* UG,UA,G */
00238 ,{ 190, 190, 190, 190, 190} /* UG,UA,U */
00239 }
00240 ,{{ 220, 220, 190, 190, 190} /* UG,NN,E */
00241 ,{ 220, 220, 190, 190, 190} /* UG,NN,A */
00242 ,{ 190, 190, 190, 190, 190} /* UG,NN,C */
00243 ,{ 190, 190, 190, -70, 190} /* UG,NN,G */
00244 ,{ 190, 190, 190, 190, 190} /* UG,NN,U */
00245 }
00246 }
00247 ,{{{ INF, INF, INF, INF, INF} /* AU,NP,E */
00248 ,{ INF, INF, INF, INF, INF} /* AU,NP,A */
00249 ,{ INF, INF, INF, INF, INF} /* AU,NP,C */
00250 ,{ INF, INF, INF, INF, INF} /* AU,NP,G */
00251 ,{ INF, INF, INF, INF, INF} /* AU,NP,U */
00252 }
00253 ,{{ 120, 120, 120, 120, 120} /* AU,CG,E */
00254 ,{ 120, 120, 120, 120, 120} /* AU,CG,A */
00255 ,{ 120, 120, 120, 120, 120} /* AU,CG,C */
00256 ,{ 120, 120, 120, -140, 120} /* AU,CG,G */
00257 ,{ 120, 120, 120, 120, 80} /* AU,CG,U */
00258 }
00259 ,{{ 120, 120, 120, 120, 120} /* AU,GC,E */
00260 ,{ 120, 120, 120, 120, 120} /* AU,GC,A */
00261 ,{ 120, 120, 120, 120, 120} /* AU,GC,C */
00262 ,{ 120, 120, 120, -140, 120} /* AU,GC,G */
00263 ,{ 120, 120, 120, 120, 80} /* AU,GC,U */
00264 }
00265 ,{{ 190, 190, 190, 190, 190} /* AU,GU,E */
00266 ,{ 190, 190, 190, 190, 190} /* AU,GU,A */
00267 ,{ 190, 190, 190, 190, 190} /* AU,GU,C */
00268 ,{ 190, 190, 190, -70, 190} /* AU,GU,G */
00269 ,{ 190, 190, 190, 190, 120} /* AU,GU,U */
00270 }
```

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00271 ,{{ 190, 190, 190, 190, 190} /* AU,UG,E */
00272 ,{ 190, 190, 190, 190, 190} /* AU,UG,A */
00273 ,{ 190, 190, 190, 190, 190} /* AU,UG,C */
00274 ,{ 190, 190, 190, -70, 190} /* AU,UG,G */
00275 ,{ 190, 190, 190, 190, 160} /* AU,UG,U */
00276 }
00277 ,{{ 190, 190, 190, 190, 190} /* AU,AU,E */
00278 ,{ 190, 190, 190, 190, 190} /* AU,AU,A */
00279 ,{ 190, 190, 190, 190, 190} /* AU,AU,C */
00280 ,{ 190, 190, 190, -70, 190} /* AU,AU,G */
00281 ,{ 190, 190, 190, 190, 120} /* AU,AU,U */
00282 }
00283 ,{{ 190, 190, 190, 190, 190} /* AU,UA,E */
00284 ,{ 190, 190, 190, 190, 190} /* AU,UA,A */
00285 ,{ 190, 190, 190, 190, 190} /* AU,UA,C */
00286 ,{ 190, 190, 190, -70, 190} /* AU,UA,G */
00287 ,{ 190, 190, 190, 190, 150} /* AU,UA,U */
00288 }
00289 ,{{ 190, 190, 190, 190, 190} /* AU,NN,E */
00290 ,{ 190, 190, 190, 190, 190} /* AU,NN,A */
00291 ,{ 190, 190, 190, 190, 190} /* AU,NN,C */
00292 ,{ 190, 190, 190, -70, 190} /* AU,NN,G */
00293 ,{ 190, 190, 190, 190, 160} /* AU,NN,U */
00294 }
00295 }
00296 ,{{{ INF, INF, INF, INF, INF} /* UA,NP,E */
00297 ,{ INF, INF, INF, INF, INF} /* UA,NP,A */
00298 ,{ INF, INF, INF, INF, INF} /* UA,NP,C */
00299 ,{ INF, INF, INF, INF, INF} /* UA,NP,G */
00300 ,{ INF, INF, INF, INF, INF} /* UA,NP,U */
00301 }
00302 ,{{ 120, 120, 120, 120, 120} /* UA,CG,E */
00303 ,{ 120, 120, 120, 120, 120} /* UA,CG,A */
00304 ,{ 120, 120, 120, 120, 120} /* UA,CG,C */
00305 ,{ 120, 120, 120, -140, 120} /* UA,CG,G */
00306 ,{ 120, 120, 120, 120, 120} /* UA,CG,U */
00307 }
00308 ,{{ 120, 120, 120, 120, 120} /* UA,GC,E */
00309 ,{ 120, 120, 120, 120, 120} /* UA,GC,A */
00310 ,{ 120, 120, 120, 120, 120} /* UA,GC,C */
00311 ,{ 120, 120, 120, -140, 120} /* UA,GC,G */
00312 ,{ 120, 120, 120, 120, 120} /* UA,GC,U */
00313 }
00314 ,{{ 190, 190, 190, 190, 190} /* UA,GU,E */
00315 ,{ 190, 190, 190, 190, 190} /* UA,GU,A */
00316 ,{ 190, 190, 190, 190, 190} /* UA,GU,C */
00317 ,{ 190, 190, 190, -70, 190} /* UA,GU,G */
00318 ,{ 190, 190, 190, 190, 160} /* UA,GU,U */
00319 }
00320 ,{{ 190, 190, 190, 190, 190} /* UA,UG,E */
00321 ,{ 190, 190, 190, 190, 190} /* UA,UG,A */
00322 ,{ 190, 190, 190, 190, 190} /* UA,UG,C */
00323 ,{ 190, 190, 190, -70, 190} /* UA,UG,G */
00324 ,{ 190, 190, 190, 190, 190} /* UA,UG,U */
00325 }
00326 ,{{ 190, 190, 190, 190, 190} /* UA,AU,E */
00327 ,{ 190, 190, 190, 190, 190} /* UA,AU,A */
00328 ,{ 190, 190, 190, 190, 190} /* UA,AU,C */
00329 ,{ 190, 190, 190, -70, 190} /* UA,AU,G */
00330 ,{ 190, 190, 190, 190, 150} /* UA,AU,U */
00331 }
00332 ,{{ 190, 190, 190, 190, 190} /* UA,UA,E */
00333 ,{ 190, 190, 190, 190, 190} /* UA,UA,A */
00334 ,{ 190, 190, 190, 190, 190} /* UA,UA,C */
00335 ,{ 190, 190, 190, -70, 190} /* UA,UA,G */
00336 ,{ 190, 190, 190, 190, 170} /* UA,UA,U */
00337 }
00338 ,{{ 190, 190, 190, 190, 190} /* UA,NN,E */
00339 ,{ 190, 190, 190, 190, 190} /* UA,NN,A */
00340 ,{ 190, 190, 190, 190, 190} /* UA,NN,C */
00341 ,{ 190, 190, 190, -70, 190} /* UA,NN,G */
00342 ,{ 190, 190, 190, 190, 190} /* UA,NN,U */
00343 }
00344 }
00345 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E */
00346 ,{ INF, INF, INF, INF, INF} /* NN,NP,A */
00347 ,{ INF, INF, INF, INF, INF} /* NN,NP,C */
00348 ,{ INF, INF, INF, INF, INF} /* NN,NP,G */
00349 ,{ INF, INF, INF, INF, INF} /* NN,NP,U */
00350 }
00351 ,{{ 220, 220, 170, 120, 120} /* NN,CG,E */
00352 ,{ 220, 220, 120, 120, 120} /* NN,CG,A */
00353 ,{ 170, 130, 120, 120, 120} /* NN,CG,C */
00354 ,{ 120, 120, 120, -140, 120} /* NN,CG,G */
00355 ,{ 120, 120, 120, 120, 120} /* NN,CG,U */
00356 }
00357 ,{{ 190, 190, 120, 120, 150} /* NN,GC,E */

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00358 , { 190, 190, 120, 120, 120} /* NN,GC,A */
00359 , { 120, 120, 120, 120, 120} /* NN,GC,C */
00360 , { 150, 150, 120, -140, 120} /* NN,GC,G */
00361 , { 150, 120, 120, 120, 150} /* NN,GC,U */
00362 }
00363 , { { 190, 190, 190, 190, 190} /* NN,GU,E */
00364 , { 190, 190, 190, 190, 190} /* NN,GU,A */
00365 , { 190, 190, 190, 190, 190} /* NN,GU,C */
00366 , { 190, 190, 190, -70, 190} /* NN,GU,G */
00367 , { 190, 190, 190, 190, 160} /* NN,GU,U */
00368 }
00369 , { { 220, 220, 190, 190, 190} /* NN,UG,E */
00370 , { 220, 220, 190, 190, 190} /* NN,UG,A */
00371 , { 190, 190, 190, 190, 190} /* NN,UG,C */
00372 , { 190, 190, 190, -70, 190} /* NN,UG,G */
00373 , { 190, 190, 190, 190, 190} /* NN,UG,U */
00374 }
00375 , { { 190, 190, 190, 190, 190} /* NN,AU,E */
00376 , { 190, 190, 190, 190, 190} /* NN,AU,A */
00377 , { 190, 190, 190, 190, 190} /* NN,AU,C */
00378 , { 190, 190, 190, -70, 190} /* NN,AU,G */
00379 , { 190, 190, 190, 190, 160} /* NN,AU,U */
00380 }
00381 , { { 190, 190, 190, 190, 190} /* NN,UA,E */
00382 , { 190, 190, 190, 190, 190} /* NN,UA,A */
00383 , { 190, 190, 190, 190, 190} /* NN,UA,C */
00384 , { 190, 190, 190, -70, 190} /* NN,UA,G */
00385 , { 190, 190, 190, 190, 190} /* NN,UA,U */
00386 }
00387 , { { 220, 220, 190, 190, 190} /* NN,NN,E */
00388 , { 220, 220, 190, 190, 190} /* NN,NN,A */
00389 , { 190, 190, 190, 190, 190} /* NN,NN,C */
00390 , { 190, 190, 190, -70, 190} /* NN,NN,G */
00391 , { 190, 190, 190, 190, 190} /* NN,NN,U */
00392 }
00393 } };
00394

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11.89 intl11_D.h

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00001 PUBLIC int intl11_37_D[NBPAIRS+1][NBPAIRS+1][5][5] =
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00003 , { INF, INF, INF, INF, INF} /* NP,NP,A */
00004 , { INF, INF, INF, INF, INF} /* NP,NP,C */
00005 , { INF, INF, INF, INF, INF} /* NP,NP,G */
00006 , { INF, INF, INF, INF, INF} /* NP,NP,T */
00007 }
00008 , { { INF, INF, INF, INF, INF} /* NP,CG,E */
00009 , { INF, INF, INF, INF, INF} /* NP,CG,A */
00010 , { INF, INF, INF, INF, INF} /* NP,CG,C */
00011 , { INF, INF, INF, INF, INF} /* NP,CG,G */
00012 , { INF, INF, INF, INF, INF} /* NP,CG,T */
00013 }
00014 , { { INF, INF, INF, INF, INF} /* NP,GC,E */
00015 , { INF, INF, INF, INF, INF} /* NP,GC,A */
00016 , { INF, INF, INF, INF, INF} /* NP,GC,C */
00017 , { INF, INF, INF, INF, INF} /* NP,GC,G */
00018 , { INF, INF, INF, INF, INF} /* NP,GC,T */
00019 }
00020 , { { INF, INF, INF, INF, INF} /* NP,GT,E */
00021 , { INF, INF, INF, INF, INF} /* NP,GT,A */
00022 , { INF, INF, INF, INF, INF} /* NP,GT,C */
00023 , { INF, INF, INF, INF, INF} /* NP,GT,G */
00024 , { INF, INF, INF, INF, INF} /* NP,GT,T */
00025 }
00026 , { { INF, INF, INF, INF, INF} /* NP,TG,E */
00027 , { INF, INF, INF, INF, INF} /* NP,TG,A */
00028 , { INF, INF, INF, INF, INF} /* NP,TG,C */
00029 , { INF, INF, INF, INF, INF} /* NP,TG,G */
00030 , { INF, INF, INF, INF, INF} /* NP,TG,T */
00031 }
00032 , { { INF, INF, INF, INF, INF} /* NP,AT,E */
00033 , { INF, INF, INF, INF, INF} /* NP,AT,A */
00034 , { INF, INF, INF, INF, INF} /* NP,AT,C */
00035 , { INF, INF, INF, INF, INF} /* NP,AT,G */
00036 , { INF, INF, INF, INF, INF} /* NP,AT,T */
00037 }
00038 , { { INF, INF, INF, INF, INF} /* NP,TA,E */
00039 , { INF, INF, INF, INF, INF} /* NP,TA,A */
00040 , { INF, INF, INF, INF, INF} /* NP,TA,C */
00041 , { INF, INF, INF, INF, INF} /* NP,TA,G */
00042 , { INF, INF, INF, INF, INF} /* NP,TA,T */
00043 }
00044 , { { INF, INF, INF, INF, INF} /* NP,NN,E */
00045 , { INF, INF, INF, INF, INF} /* NP,NN,A */

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00046 ,{ INF, INF, INF, INF, INF} /* NP,NN,C */
00047 ,{ INF, INF, INF, INF, INF} /* NP,NN,G */
00048 ,{ INF, INF, INF, INF, INF} /* NP,NN,T */
00049 }
00050 }
00051 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,E */
00052 ,{ INF, INF, INF, INF, INF} /* CG,NP,A */
00053 ,{ INF, INF, INF, INF, INF} /* CG,NP,C */
00054 ,{ INF, INF, INF, INF, INF} /* CG,NP,G */
00055 ,{ INF, INF, INF, INF, INF} /* CG,NP,T */
00056 }
00057 ,{{{ 200, 150, 150, 200, 200} /* CG,CG,E */
00058 ,{ 150, 90, 150, 10, 100} /* CG,CG,A */
00059 ,{ 150, 150, 140, 100, 100} /* CG,CG,C */
00060 ,{ 200, 10, 100, -30, 200} /* CG,CG,G */
00061 ,{ 200, 100, 100, 200, -20} /* CG,CG,T */
00062 }
00063 ,{{{ 200, 160, 150, 200, 200} /* CG,GC,E */
00064 ,{ 120, 60, 120, -50, 100} /* CG,GC,A */
00065 ,{ 160, 160, 150, 100, 160} /* CG,GC,C */
00066 ,{ 200, -10, 100, -130, 200} /* CG,GC,G */
00067 ,{ 200, 100, 100, 200, 30} /* CG,GC,T */
00068 }
00069 ,{{{ 260, 260, 250, 200, 260} /* CG,GT,E */
00070 ,{ 220, 160, 220, 50, 100} /* CG,GT,A */
00071 ,{ 260, 260, 250, 100, 260} /* CG,GT,C */
00072 ,{ 200, 90, 100, -30, 200} /* CG,GT,G */
00073 ,{ 200, 100, 200, 200, 130} /* CG,GT,T */
00074 }
00075 ,{{{ 250, 250, 250, 200, 200} /* CG,TG,E */
00076 ,{ 250, 190, 250, 110, 100} /* CG,TG,A */
00077 ,{ 250, 250, 240, 100, 200} /* CG,TG,C */
00078 ,{ 200, 110, 100, 70, 200} /* CG,TG,G */
00079 ,{ 200, 100, 200, 200, 80} /* CG,TG,T */
00080 }
00081 ,{{{ 200, 170, 200, 200, 200} /* CG,AT,E */
00082 ,{ 150, 100, 150, 10, 100} /* CG,AT,A */
00083 ,{ 200, 170, 200, 100, 140} /* CG,AT,C */
00084 ,{ 200, 30, 100, -30, 200} /* CG,AT,G */
00085 ,{ 200, 100, 100, 200, 60} /* CG,AT,T */
00086 }
00087 ,{{{ 210, 170, 210, 200, 200} /* CG,TA,E */
00088 ,{ 210, 110, 210, 80, 100} /* CG,TA,A */
00089 ,{ 180, 170, 180, 100, 140} /* CG,TA,C */
00090 ,{ 200, 50, 100, 30, 200} /* CG,TA,G */
00091 ,{ 200, 100, 140, 200, 60} /* CG,TA,T */
00092 }
00093 ,{{{ 260, 260, 250, 200, 260} /* CG,NN,E */
00094 ,{ 250, 190, 250, 110, 100} /* CG,NN,A */
00095 ,{ 260, 260, 250, 100, 260} /* CG,NN,C */
00096 ,{ 200, 110, 100, 70, 200} /* CG,NN,G */
00097 ,{ 200, 100, 200, 200, 130} /* CG,NN,T */
00098 }
00099 }
00100 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E */
00101 ,{ INF, INF, INF, INF, INF} /* GC,NP,A */
00102 ,{ INF, INF, INF, INF, INF} /* GC,NP,C */
00103 ,{ INF, INF, INF, INF, INF} /* GC,NP,G */
00104 ,{ INF, INF, INF, INF, INF} /* GC,NP,T */
00105 }
00106 ,{{{ 200, 120, 160, 200, 200} /* GC,CG,E */
00107 ,{ 160, 60, 160, -10, 100} /* GC,CG,A */
00108 ,{ 150, 120, 150, 100, 100} /* GC,CG,C */
00109 ,{ 200, -50, 100, -130, 200} /* GC,CG,G */
00110 ,{ 200, 100, 160, 200, 30} /* GC,CG,T */
00111 }
00112 ,{{{ 200, 130, 160, 200, 200} /* GC,GC,E */
00113 ,{ 130, 30, 130, -80, 100} /* GC,GC,A */
00114 ,{ 160, 130, 160, 100, 160} /* GC,GC,C */
00115 ,{ 200, -80, 100, -220, 200} /* GC,GC,G */
00116 ,{ 200, 100, 160, 200, 90} /* GC,GC,T */
00117 }
00118 ,{{{ 260, 230, 260, 200, 260} /* GC,GT,E */
00119 ,{ 230, 130, 230, 20, 100} /* GC,GT,A */
00120 ,{ 260, 230, 260, 100, 260} /* GC,GT,C */
00121 ,{ 200, 20, 100, -120, 200} /* GC,GT,G */
00122 ,{ 260, 100, 260, 200, 190} /* GC,GT,T */
00123 }
00124 ,{{{ 260, 220, 260, 200, 200} /* GC,TG,E */
00125 ,{ 260, 160, 260, 90, 100} /* GC,TG,A */
00126 ,{ 250, 220, 250, 100, 200} /* GC,TG,C */
00127 ,{ 200, 50, 100, -30, 200} /* GC,TG,G */
00128 ,{ 260, 100, 260, 200, 130} /* GC,TG,T */
00129 }
00130 ,{{{ 210, 140, 210, 200, 200} /* GC,AT,E */
00131 ,{ 160, 80, 160, -20, 100} /* GC,AT,A */
00132 ,{ 210, 140, 210, 100, 140} /* GC,AT,C */

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```
00133 ,{ 200, -40, 100, -120, 200} /* GC,AT,G */
00134 ,{ 200, 100, 160, 200, 110} /* GC,AT,T */
00135 }
00136 ,{{ 210, 140, 210, 200, 200} /* GC,TA,E */
00137 ,{ 210, 90, 210, 50, 100} /* GC,TA,A */
00138 ,{ 180, 140, 180, 100, 140} /* GC,TA,C */
00139 ,{ 200, -10, 100, -70, 200} /* GC,TA,G */
00140 ,{ 200, 100, 200, 200, 110} /* GC,TA,T */
00141 }
00142 ,{{ 260, 230, 260, 200, 260} /* GC,NN,E */
00143 ,{ 260, 160, 260, 90, 100} /* GC,NN,A */
00144 ,{ 260, 230, 260, 100, 260} /* GC,NN,C */
00145 ,{ 200, 50, 100, -30, 200} /* GC,NN,G */
00146 ,{ 260, 100, 260, 200, 190} /* GC,NN,T */
00147 }
00148 }
00149 ,{{{ INF, INF, INF, INF, INF} /* GT,NP,E */
00150 ,{ INF, INF, INF, INF, INF} /* GT,NP,A */
00151 ,{ INF, INF, INF, INF, INF} /* GT,NP,C */
00152 ,{ INF, INF, INF, INF, INF} /* GT,NP,G */
00153 ,{ INF, INF, INF, INF, INF} /* GT,NP,T */
00154 }
00155 ,{{ 260, 220, 260, 200, 200} /* GT,CG,E */
00156 ,{ 260, 160, 260, 90, 100} /* GT,CG,A */
00157 ,{ 250, 220, 250, 100, 200} /* GT,CG,C */
00158 ,{ 200, 50, 100, -30, 200} /* GT,CG,G */
00159 ,{ 260, 100, 260, 200, 130} /* GT,CG,T */
00160 }
00161 ,{{ 260, 230, 260, 200, 260} /* GT,GC,E */
00162 ,{ 230, 130, 230, 20, 100} /* GT,GC,A */
00163 ,{ 260, 230, 260, 100, 260} /* GT,GC,C */
00164 ,{ 200, 20, 100, -120, 200} /* GT,GC,G */
00165 ,{ 260, 100, 260, 200, 190} /* GT,GC,T */
00166 }
00167 ,{{ 300, 300, 300, 300, 300} /* GT,GT,E */
00168 ,{ 300, 300, 300, 300, 300} /* GT,GT,A */
00169 ,{ 300, 300, 300, 300, 300} /* GT,GT,C */
00170 ,{ 300, 300, 300, 300, 300} /* GT,GT,G */
00171 ,{ 300, 300, 300, 300, 300} /* GT,GT,T */
00172 }
00173 ,{{ 300, 300, 300, 300, 300} /* GT,TG,E */
00174 ,{ 300, 300, 300, 300, 300} /* GT,TG,A */
00175 ,{ 300, 300, 300, 300, 300} /* GT,TG,C */
00176 ,{ 300, 300, 300, 300, 300} /* GT,TG,G */
00177 ,{ 300, 300, 300, 300, 300} /* GT,TG,T */
00178 }
00179 ,{{ 310, 240, 310, 200, 240} /* GT,AT,E */
00180 ,{ 260, 180, 260, 80, 100} /* GT,AT,A */
00181 ,{ 310, 240, 310, 100, 240} /* GT,AT,C */
00182 ,{ 200, 60, 100, -20, 200} /* GT,AT,G */
00183 ,{ 260, 100, 260, 200, 210} /* GT,AT,T */
00184 }
00185 ,{{ 310, 240, 310, 200, 240} /* GT,TA,E */
00186 ,{ 310, 190, 310, 150, 100} /* GT,TA,A */
00187 ,{ 280, 240, 280, 100, 240} /* GT,TA,C */
00188 ,{ 200, 90, 100, 30, 200} /* GT,TA,G */
00189 ,{ 300, 100, 300, 200, 210} /* GT,TA,T */
00190 }
00191 ,{{ 310, 300, 310, 300, 300} /* GT,NN,E */
00192 ,{ 310, 300, 310, 300, 300} /* GT,NN,A */
00193 ,{ 310, 300, 310, 300, 300} /* GT,NN,C */
00194 ,{ 300, 300, 300, 300, 300} /* GT,NN,G */
00195 ,{ 300, 300, 300, 300, 300} /* GT,NN,T */
00196 }
00197 }
00198 ,{{{ INF, INF, INF, INF, INF} /* TG,NP,E */
00199 ,{ INF, INF, INF, INF, INF} /* TG,NP,A */
00200 ,{ INF, INF, INF, INF, INF} /* TG,NP,C */
00201 ,{ INF, INF, INF, INF, INF} /* TG,NP,G */
00202 ,{ INF, INF, INF, INF, INF} /* TG,NP,T */
00203 }
00204 ,{{ 250, 250, 250, 200, 200} /* TG,CG,E */
00205 ,{ 250, 190, 250, 110, 100} /* TG,CG,A */
00206 ,{ 250, 250, 240, 100, 200} /* TG,CG,C */
00207 ,{ 200, 110, 100, 70, 200} /* TG,CG,G */
00208 ,{ 200, 100, 200, 200, 80} /* TG,CG,T */
00209 }
00210 ,{{ 260, 260, 250, 200, 260} /* TG,GC,E */
00211 ,{ 220, 160, 220, 50, 100} /* TG,GC,A */
00212 ,{ 260, 260, 250, 100, 260} /* TG,GC,C */
00213 ,{ 200, 90, 100, -30, 200} /* TG,GC,G */
00214 ,{ 200, 100, 200, 200, 130} /* TG,GC,T */
00215 }
00216 ,{{ 300, 300, 300, 300, 300} /* TG,GT,E */
00217 ,{ 300, 300, 300, 300, 300} /* TG,GT,A */
00218 ,{ 300, 300, 300, 300, 300} /* TG,GT,C */
00219 ,{ 300, 300, 300, 300, 300} /* TG,GT,G */
00219 }
```

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00220 , { 300, 300, 300, 300, 300} /* TG,GT,T */
00221 }
00222 , { { 300, 300, 300, 300, 300} /* TG,TG,E */
00223 , { 300, 300, 300, 300, 300} /* TG,TG,A */
00224 , { 300, 300, 300, 300, 300} /* TG,TG,C */
00225 , { 300, 300, 300, 300, 300} /* TG,TG,G */
00226 , { 300, 300, 300, 300, 300} /* TG,TG,T */
00227 }
00228 , { { 300, 270, 300, 200, 240} /* TG,AT,E */
00229 , { 250, 200, 250, 110, 100} /* TG,AT,A */
00230 , { 300, 270, 300, 100, 240} /* TG,AT,C */
00231 , { 200, 130, 100, 70, 200} /* TG,AT,G */
00232 , { 200, 100, 200, 200, 160} /* TG,AT,T */
00233 }
00234 , { { 310, 270, 310, 200, 240} /* TG,TA,E */
00235 , { 310, 210, 310, 180, 100} /* TG,TA,A */
00236 , { 280, 270, 280, 100, 240} /* TG,TA,C */
00237 , { 200, 150, 100, 130, 200} /* TG,TA,G */
00238 , { 240, 100, 240, 200, 160} /* TG,TA,T */
00239 }
00240 , { { 310, 300, 310, 300, 300} /* TG,NN,E */
00241 , { 310, 300, 310, 300, 300} /* TG,NN,A */
00242 , { 300, 300, 300, 300, 300} /* TG,NN,C */
00243 , { 300, 300, 300, 300, 300} /* TG,NN,G */
00244 , { 300, 300, 300, 300, 300} /* TG,NN,T */
00245 }
00246 }
00247 , { { INF, INF, INF, INF, INF} /* AT,NP,E */
00248 , { INF, INF, INF, INF, INF} /* AT,NP,A */
00249 , { INF, INF, INF, INF, INF} /* AT,NP,C */
00250 , { INF, INF, INF, INF, INF} /* AT,NP,G */
00251 , { INF, INF, INF, INF, INF} /* AT,NP,T */
00252 }
00253 , { { 200, 150, 200, 200, 200} /* AT,CG,E */
00254 , { 170, 100, 170, 30, 100} /* AT,CG,A */
00255 , { 200, 150, 200, 100, 100} /* AT,CG,C */
00256 , { 200, 10, 100, -30, 200} /* AT,CG,G */
00257 , { 200, 100, 140, 200, 60} /* AT,CG,T */
00258 }
00259 , { { 210, 160, 210, 200, 200} /* AT,GC,E */
00260 , { 140, 80, 140, -40, 100} /* AT,GC,A */
00261 , { 210, 160, 210, 100, 160} /* AT,GC,C */
00262 , { 200, -20, 100, -120, 200} /* AT,GC,G */
00263 , { 200, 100, 140, 200, 110} /* AT,GC,T */
00264 }
00265 , { { 310, 260, 310, 200, 260} /* AT,GT,E */
00266 , { 240, 180, 240, 60, 100} /* AT,GT,A */
00267 , { 310, 260, 310, 100, 260} /* AT,GT,C */
00268 , { 200, 80, 100, -20, 200} /* AT,GT,G */
00269 , { 240, 100, 240, 200, 210} /* AT,GT,T */
00270 }
00271 , { { 300, 250, 300, 200, 200} /* AT,TG,E */
00272 , { 270, 200, 270, 130, 100} /* AT,TG,A */
00273 , { 300, 250, 300, 100, 200} /* AT,TG,C */
00274 , { 200, 110, 100, 70, 200} /* AT,TG,G */
00275 , { 240, 100, 240, 200, 160} /* AT,TG,T */
00276 }
00277 , { { 270, 170, 270, 200, 200} /* AT,AT,E */
00278 , { 170, 120, 170, 20, 100} /* AT,AT,A */
00279 , { 270, 170, 270, 100, 140} /* AT,AT,C */
00280 , { 200, 20, 100, -30, 200} /* AT,AT,G */
00281 , { 200, 100, 140, 200, 140} /* AT,AT,T */
00282 }
00283 , { { 240, 170, 240, 200, 200} /* AT,TA,E */
00284 , { 220, 130, 220, 90, 100} /* AT,TA,A */
00285 , { 240, 170, 240, 100, 140} /* AT,TA,C */
00286 , { 200, 40, 100, 30, 200} /* AT,TA,G */
00287 , { 200, 100, 170, 200, 140} /* AT,TA,T */
00288 }
00289 , { { 310, 260, 310, 200, 260} /* AT,NN,E */
00290 , { 270, 200, 270, 130, 100} /* AT,NN,A */
00291 , { 310, 260, 310, 100, 260} /* AT,NN,C */
00292 , { 200, 110, 100, 70, 200} /* AT,NN,G */
00293 , { 240, 100, 240, 200, 210} /* AT,NN,T */
00294 }
00295 }
00296 , { { INF, INF, INF, INF, INF} /* TA,NP,E */
00297 , { INF, INF, INF, INF, INF} /* TA,NP,A */
00298 , { INF, INF, INF, INF, INF} /* TA,NP,C */
00299 , { INF, INF, INF, INF, INF} /* TA,NP,G */
00300 , { INF, INF, INF, INF, INF} /* TA,NP,T */
00301 }
00302 , { { 210, 210, 180, 200, 200} /* TA,CG,E */
00303 , { 170, 110, 170, 50, 100} /* TA,CG,A */
00304 , { 210, 210, 180, 100, 140} /* TA,CG,C */
00305 , { 200, 80, 100, 30, 200} /* TA,CG,G */
00306 , { 200, 100, 140, 200, 60} /* TA,CG,T */

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00307 }
00308 ,{{ 210, 210, 180, 200, 200} /* TA,GC,E */
00309 ,{ 140, 90, 140, -10, 100} /* TA,GC,A */
00310 ,{ 210, 210, 180, 100, 200} /* TA,GC,C */
00311 ,{ 200, 50, 100, -70, 200} /* TA,GC,G */
00312 ,{ 200, 100, 140, 200, 110} /* TA,GC,T */
00313 }
00314 ,{{ 310, 310, 280, 200, 300} /* TA,GT,E */
00315 ,{ 240, 190, 240, 90, 100} /* TA,GT,A */
00316 ,{ 310, 310, 280, 100, 300} /* TA,GT,C */
00317 ,{ 200, 150, 100, 30, 200} /* TA,GT,G */
00318 ,{ 240, 100, 240, 200, 210} /* TA,GT,T */
00319 }
00320 ,{{ 310, 310, 280, 200, 240} /* TA,TG,E */
00321 ,{ 270, 210, 270, 150, 100} /* TA,TG,A */
00322 ,{ 310, 310, 280, 100, 240} /* TA,TG,C */
00323 ,{ 200, 180, 100, 130, 200} /* TA,TG,G */
00324 ,{ 240, 100, 240, 200, 160} /* TA,TG,T */
00325 }
00326 ,{{ 240, 220, 240, 200, 200} /* TA,AT,E */
00327 ,{ 170, 130, 170, 40, 100} /* TA,AT,A */
00328 ,{ 240, 220, 240, 100, 170} /* TA,AT,C */
00329 ,{ 200, 90, 100, 30, 200} /* TA,AT,G */
00330 ,{ 200, 100, 140, 200, 140} /* TA,AT,T */
00331 }
00332 ,{{ 230, 230, 230, 200, 200} /* TA,TA,E */
00333 ,{ 230, 140, 230, 120, 100} /* TA,TA,A */
00334 ,{ 230, 230, 210, 100, 170} /* TA,TA,C */
00335 ,{ 200, 120, 100, 90, 200} /* TA,TA,G */
00336 ,{ 200, 100, 170, 200, 140} /* TA,TA,T */
00337 }
00338 ,{{ 310, 310, 280, 200, 300} /* TA,NN,E */
00339 ,{ 270, 210, 270, 150, 100} /* TA,NN,A */
00340 ,{ 310, 310, 280, 100, 300} /* TA,NN,C */
00341 ,{ 200, 180, 100, 130, 200} /* TA,NN,G */
00342 ,{ 240, 100, 240, 200, 210} /* TA,NN,T */
00343 }
00344 }
00345 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E */
00346 ,{ INF, INF, INF, INF, INF} /* NN,NP,A */
00347 ,{ INF, INF, INF, INF, INF} /* NN,NP,C */
00348 ,{ INF, INF, INF, INF, INF} /* NN,NP,G */
00349 ,{ INF, INF, INF, INF, INF} /* NN,NP,T */
00350 }
00351 ,{{ 260, 250, 260, 200, 200} /* NN,CG,E */
00352 ,{ 260, 190, 260, 110, 100} /* NN,CG,A */
00353 ,{ 250, 250, 250, 100, 200} /* NN,CG,C */
00354 ,{ 200, 110, 100, 70, 200} /* NN,CG,G */
00355 ,{ 260, 100, 260, 200, 130} /* NN,CG,T */
00356 }
00357 ,{{ 260, 260, 260, 200, 260} /* NN,GC,E */
00358 ,{ 230, 160, 230, 50, 100} /* NN,GC,A */
00359 ,{ 260, 260, 260, 100, 260} /* NN,GC,C */
00360 ,{ 200, 90, 100, -30, 200} /* NN,GC,G */
00361 ,{ 260, 100, 260, 200, 190} /* NN,GC,T */
00362 }
00363 ,{{ 310, 310, 310, 300, 300} /* NN,GT,E */
00364 ,{ 300, 300, 300, 300, 300} /* NN,GT,A */
00365 ,{ 310, 310, 310, 300, 300} /* NN,GT,C */
00366 ,{ 300, 300, 300, 300, 300} /* NN,GT,G */
00367 ,{ 300, 300, 300, 300, 300} /* NN,GT,T */
00368 }
00369 ,{{ 310, 310, 300, 300, 300} /* NN,TG,E */
00370 ,{ 300, 300, 300, 300, 300} /* NN,TG,A */
00371 ,{ 310, 310, 300, 300, 300} /* NN,TG,C */
00372 ,{ 300, 300, 300, 300, 300} /* NN,TG,G */
00373 ,{ 300, 300, 300, 300, 300} /* NN,TG,T */
00374 }
00375 ,{{ 310, 270, 310, 200, 240} /* NN,AT,E */
00376 ,{ 260, 200, 260, 110, 100} /* NN,AT,A */
00377 ,{ 310, 270, 310, 100, 240} /* NN,AT,C */
00378 ,{ 200, 130, 100, 70, 200} /* NN,AT,G */
00379 ,{ 260, 100, 260, 200, 210} /* NN,AT,T */
00380 }
00381 ,{{ 310, 270, 310, 200, 240} /* NN,TA,E */
00382 ,{ 310, 210, 310, 180, 100} /* NN,TA,A */
00383 ,{ 280, 270, 280, 100, 240} /* NN,TA,C */
00384 ,{ 200, 150, 100, 130, 200} /* NN,TA,G */
00385 ,{ 300, 100, 300, 200, 210} /* NN,TA,T */
00386 }
00387 ,{{ 310, 310, 310, 300, 300} /* NN,NN,E */
00388 ,{ 310, 300, 310, 300, 300} /* NN,NN,A */
00389 ,{ 310, 310, 310, 300, 300} /* NN,NN,C */
00390 ,{ 300, 300, 300, 300, 300} /* NN,NN,G */
00391 ,{ 300, 300, 300, 300, 300} /* NN,NN,T */
00392 }
00393 };
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00394

11.90 int11_RD.h

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00001 PUBLIC int int11_37_RD[NBPAIRS+1][NBPAIRS+1][5][5] =
00002 {{{{ INF, INF, INF, INF, INF } /* NP,NP,E */
00003 ,{ INF, INF, INF, INF, INF } /* NP,NP,A */
00004 ,{ INF, INF, INF, INF, INF } /* NP,NP,C */
00005 ,{ INF, INF, INF, INF, INF } /* NP,NP,G */
00006 ,{ INF, INF, INF, INF, INF } /* NP,NP,U/T */
00007 }
00008 ,{{{ INF, INF, INF, INF, INF } /* NP,CG,E */
00009 ,{ INF, INF, INF, INF, INF } /* NP,CG,A */
00010 ,{ INF, INF, INF, INF, INF } /* NP,CG,C */
00011 ,{ INF, INF, INF, INF, INF } /* NP,CG,G */
00012 ,{ INF, INF, INF, INF, INF } /* NP,CG,U/T */
00013 }
00014 ,{{{ INF, INF, INF, INF, INF } /* NP,GC,E */
00015 ,{ INF, INF, INF, INF, INF } /* NP,GC,A */
00016 ,{ INF, INF, INF, INF, INF } /* NP,GC,C */
00017 ,{ INF, INF, INF, INF, INF } /* NP,GC,G */
00018 ,{ INF, INF, INF, INF, INF } /* NP,GC,U/T */
00019 }
00020 ,{{{ INF, INF, INF, INF, INF } /* NP,GT,E */
00021 ,{ INF, INF, INF, INF, INF } /* NP,GT,A */
00022 ,{ INF, INF, INF, INF, INF } /* NP,GT,C */
00023 ,{ INF, INF, INF, INF, INF } /* NP,GT,G */
00024 ,{ INF, INF, INF, INF, INF } /* NP,GT,U/T */
00025 }
00026 ,{{{ INF, INF, INF, INF, INF } /* NP,UG,E */
00027 ,{ INF, INF, INF, INF, INF } /* NP,UG,A */
00028 ,{ INF, INF, INF, INF, INF } /* NP,UG,C */
00029 ,{ INF, INF, INF, INF, INF } /* NP,UG,G */
00030 ,{ INF, INF, INF, INF, INF } /* NP,UG,U/T */
00031 }
00032 ,{{{ INF, INF, INF, INF, INF } /* NP,AT,E */
00033 ,{ INF, INF, INF, INF, INF } /* NP,AT,A */
00034 ,{ INF, INF, INF, INF, INF } /* NP,AT,C */
00035 ,{ INF, INF, INF, INF, INF } /* NP,AT,G */
00036 ,{ INF, INF, INF, INF, INF } /* NP,AT,U/T */
00037 }
00038 ,{{{ INF, INF, INF, INF, INF } /* NP,UA,E */
00039 ,{ INF, INF, INF, INF, INF } /* NP,UA,A */
00040 ,{ INF, INF, INF, INF, INF } /* NP,UA,C */
00041 ,{ INF, INF, INF, INF, INF } /* NP,UA,G */
00042 ,{ INF, INF, INF, INF, INF } /* NP,UA,U/T */
00043 }
00044 ,{{{ INF, INF, INF, INF, INF } /* NP,NN,E */
00045 ,{ INF, INF, INF, INF, INF } /* NP,NN,A */
00046 ,{ INF, INF, INF, INF, INF } /* NP,NN,C */
00047 ,{ INF, INF, INF, INF, INF } /* NP,NN,G */
00048 ,{ INF, INF, INF, INF, INF } /* NP,NN,U/T */
00049 }
00050 }
00051 ,{{{ INF, INF, INF, INF, INF } /* CG,NP,E */
00052 ,{ INF, INF, INF, INF, INF } /* CG,NP,A */
00053 ,{ INF, INF, INF, INF, INF } /* CG,NP,C */
00054 ,{ INF, INF, INF, INF, INF } /* CG,NP,G */
00055 ,{ INF, INF, INF, INF, INF } /* CG,NP,U/T */
00056 }
00057 ,{{{ 145, 120, 100, 125, 125 } /* CG,CG,E */
00058 ,{ 120, 90, 100, 30, 75 } /* CG,CG,A */
00059 ,{ 100, 100, 95, 75, 75 } /* CG,CG,C */
00060 ,{ 125, 30, 75, -85, 125 } /* CG,CG,G */
00061 ,{ 125, 75, 75, 125, 10 } /* CG,CG,U/T */
00062 }
00063 ,{{{ 145, 125, 100, 125, 130 } /* CG,GC,E */
00064 ,{ 105, 75, 40, 0, 75 } /* CG,GC,A */
00065 ,{ 110, 95, 100, 75, 110 } /* CG,GC,C */
00066 ,{ 125, -10, 75, -175, 125 } /* CG,GC,G */
00067 ,{ 125, 75, 50, 125, 10 } /* CG,GC,U/T */
00068 }
00069 ,{{{ 190, 190, 185, 160, 190 } /* CG,GT,E */
00070 ,{ 170, 110, 135, 85, 110 } /* CG,GT,A */
00071 ,{ 190, 190, 185, 110, 190 } /* CG,GT,C */
00072 ,{ 160, 35, 110, -85, 160 } /* CG,GT,G */
00073 ,{ 160, 110, 150, 160, 120 } /* CG,GT,U/T */
00074 }
00075 ,{{{ 235, 235, 210, 160, 160 } /* CG,UG,E */
00076 ,{ 235, 205, 190, 115, 110 } /* CG,UG,A */
00077 ,{ 210, 185, 205, 110, 160 } /* CG,UG,C */
00078 ,{ 160, 115, 110, -35, 160 } /* CG,UG,G */
00079 ,{ 160, 110, 160, 160, 95 } /* CG,UG,U/T */
00080 }
00081 ,{{{ 160, 145, 160, 160, 160 } /* CG,AT,E */

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00082 , { 135, 110, 135, 65, 110} /* CG,AT,A */
00083 , { 160, 145, 160, 110, 130} /* CG,AT,C */
00084 , { 160, 75, 110, -85, 160} /* CG,AT,G */
00085 , { 160, 110, 110, 160, 70} /* CG,AT,U/T */
00086 }
00087 , { { 165, 145, 165, 160, 160} /* CG,UA,E */
00088 , { 165, 115, 165, 100, 110} /* CG,UA,A */
00089 , { 150, 145, 150, 110, 130} /* CG,UA,C */
00090 , { 160, 85, 110, -55, 160} /* CG,UA,G */
00091 , { 160, 110, 130, 160, 90} /* CG,UA,U/T */
00092 }
00093 , { { 240, 240, 210, 160, 190} /* CG,NN,E */
00094 , { 235, 205, 190, 115, 110} /* CG,NN,A */
00095 , { 215, 190, 210, 110, 190} /* CG,NN,C */
00096 , { 160, 115, 110, -35, 160} /* CG,NN,G */
00097 , { 160, 110, 160, 160, 125} /* CG,NN,U/T */
00098 }
00099 }
00100 , { { { INF, INF, INF, INF, INF} /* GC,NP,E */
00101 , { INF, INF, INF, INF, INF} /* GC,NP,A */
00102 , { INF, INF, INF, INF, INF} /* GC,NP,C */
00103 , { INF, INF, INF, INF, INF} /* GC,NP,G */
00104 , { INF, INF, INF, INF, INF} /* GC,NP,U/T */
00105 }
00106 , { { 145, 105, 110, 125, 125} /* GC,CG,E */
00107 , { 125, 75, 95, -10, 75} /* GC,CG,A */
00108 , { 100, 40, 100, 75, 50} /* GC,CG,C */
00109 , { 125, 0, 75, -175, 125} /* GC,CG,G */
00110 , { 130, 75, 110, 125, 10} /* GC,CG,U/T */
00111 }
00112 , { { 140, 105, 105, 125, 125} /* GC,GC,E */
00113 , { 105, 55, 90, -15, 75} /* GC,GC,A */
00114 , { 105, 90, 105, 75, 105} /* GC,GC,C */
00115 , { 125, -15, 75, -225, 125} /* GC,GC,G */
00116 , { 125, 75, 105, 125, 15} /* GC,GC,U/T */
00117 }
00118 , { { 225, 210, 190, 175, 205} /* GC,GT,E */
00119 , { 210, 160, 175, 85, 110} /* GC,GT,A */
00120 , { 190, 175, 190, 110, 190} /* GC,GT,C */
00121 , { 160, 70, 110, -130, 160} /* GC,GT,G */
00122 , { 205, 110, 190, 160, 170} /* GC,GT,U/T */
00123 }
00124 , { { 210, 190, 190, 160, 160} /* GC,UG,E */
00125 , { 210, 160, 190, 95, 110} /* GC,UG,A */
00126 , { 185, 170, 185, 110, 160} /* GC,UG,C */
00127 , { 160, 85, 110, -85, 160} /* GC,UG,G */
00128 , { 190, 110, 190, 160, 100} /* GC,UG,U/T */
00129 }
00130 , { { 165, 130, 165, 160, 160} /* GC,AT,E */
00131 , { 140, 100, 140, 50, 110} /* GC,AT,A */
00132 , { 165, 130, 165, 110, 130} /* GC,AT,C */
00133 , { 160, 40, 110, -130, 160} /* GC,AT,G */
00134 , { 160, 110, 140, 160, 95} /* GC,AT,U/T */
00135 }
00136 , { { 165, 130, 165, 160, 160} /* GC,UA,E */
00137 , { 165, 105, 165, 85, 110} /* GC,UA,A */
00138 , { 150, 130, 150, 110, 130} /* GC,UA,C */
00139 , { 160, 55, 110, -105, 160} /* GC,UA,G */
00140 , { 160, 110, 160, 160, 115} /* GC,UA,U/T */
00141 }
00142 , { { 225, 210, 190, 175, 205} /* GC,NN,E */
00143 , { 225, 175, 190, 120, 110} /* GC,NN,A */
00144 , { 190, 175, 190, 110, 190} /* GC,NN,C */
00145 , { 160, 85, 110, -85, 160} /* GC,NN,G */
00146 , { 205, 110, 190, 160, 170} /* GC,NN,U/T */
00147 }
00148 }
00149 , { { { INF, INF, INF, INF, INF} /* GT,NP,E */
00150 , { INF, INF, INF, INF, INF} /* GT,NP,A */
00151 , { INF, INF, INF, INF, INF} /* GT,NP,C */
00152 , { INF, INF, INF, INF, INF} /* GT,NP,G */
00153 , { INF, INF, INF, INF, INF} /* GT,NP,U/T */
00154 }
00155 , { { 190, 170, 190, 160, 160} /* GT,CG,E */
00156 , { 190, 110, 190, 35, 110} /* GT,CG,A */
00157 , { 185, 135, 185, 110, 150} /* GT,CG,C */
00158 , { 160, 85, 110, -85, 160} /* GT,CG,G */
00159 , { 190, 110, 190, 160, 120} /* GT,CG,U/T */
00160 }
00161 , { { 225, 210, 190, 160, 205} /* GT,GC,E */
00162 , { 210, 160, 175, 70, 110} /* GT,GC,A */
00163 , { 190, 175, 190, 110, 190} /* GT,GC,C */
00164 , { 175, 85, 110, -130, 160} /* GT,GC,G */
00165 , { 205, 110, 190, 160, 170} /* GT,GC,U/T */
00166 }
00167 , { { 245, 245, 245, 245, 245} /* GT,GT,E */
00168 , { 245, 245, 245, 245, 245} /* GT,GT,A */

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00169 , { 245, 245, 245, 245, 245} /* GT,GT,C */
00170 , { 245, 245, 245, 115, 245} /* GT,GT,G */
00171 , { 245, 245, 245, 245, 210} /* GT,GT,U/T */
00172 }
00173 , { { 245, 245, 245, 245, 245} /* GT,UG,E */
00174 , { 245, 245, 245, 135, 245} /* GT,UG,A */
00175 , { 245, 245, 245, 245, 245} /* GT,UG,C */
00176 , { 245, 245, 245, 115, 245} /* GT,UG,G */
00177 , { 245, 245, 245, 245, 230} /* GT,UG,U/T */
00178 }
00179 , { { 250, 215, 250, 195, 215} /* GT,AT,E */
00180 , { 225, 185, 225, 135, 145} /* GT,AT,A */
00181 , { 250, 215, 250, 145, 215} /* GT,AT,C */
00182 , { 195, 125, 145, -45, 195} /* GT,AT,G */
00183 , { 225, 145, 225, 195, 165} /* GT,AT,U/T */
00184 }
00185 , { { 250, 215, 250, 195, 215} /* GT,UA,E */
00186 , { 250, 190, 250, 170, 145} /* GT,UA,A */
00187 , { 235, 215, 235, 145, 215} /* GT,UA,C */
00188 , { 195, 140, 145, -20, 195} /* GT,UA,G */
00189 , { 245, 145, 245, 195, 185} /* GT,UA,U/T */
00190 }
00191 , { { 250, 245, 250, 245, 245} /* GT,NN,E */
00192 , { 250, 245, 250, 245, 245} /* GT,NN,A */
00193 , { 250, 245, 250, 245, 245} /* GT,NN,C */
00194 , { 245, 245, 245, 115, 245} /* GT,NN,G */
00195 , { 245, 245, 245, 245, 230} /* GT,NN,U/T */
00196 }
00197 }
00198 , { { { INF, INF, INF, INF, INF} /* UG,NP,E */
00199 , { INF, INF, INF, INF, INF} /* UG,NP,A */
00200 , { INF, INF, INF, INF, INF} /* UG,NP,C */
00201 , { INF, INF, INF, INF, INF} /* UG,NP,G */
00202 , { INF, INF, INF, INF, INF} /* UG,NP,U/T */
00203 }
00204 , { { 235, 235, 210, 160, 160} /* UG,CG,E */
00205 , { 235, 205, 185, 115, 110} /* UG,CG,A */
00206 , { 210, 190, 205, 110, 160} /* UG,CG,C */
00207 , { 160, 115, 110, -35, 160} /* UG,CG,G */
00208 , { 160, 110, 160, 160, 95} /* UG,CG,U/T */
00209 }
00210 , { { 210, 210, 185, 160, 190} /* UG,GC,E */
00211 , { 190, 160, 170, 85, 110} /* UG,GC,A */
00212 , { 190, 190, 185, 110, 190} /* UG,GC,C */
00213 , { 160, 95, 110, -85, 160} /* UG,GC,G */
00214 , { 160, 110, 160, 160, 100} /* UG,GC,U/T */
00215 }
00216 , { { 245, 245, 245, 245, 245} /* UG,GT,E */
00217 , { 245, 245, 245, 245, 245} /* UG,GT,A */
00218 , { 245, 245, 245, 245, 245} /* UG,GT,C */
00219 , { 245, 245, 245, 115, 245} /* UG,GT,G */
00220 , { 245, 245, 245, 245, 230} /* UG,GT,U/T */
00221 }
00222 , { { 245, 245, 245, 245, 245} /* UG,UG,E */
00223 , { 245, 245, 245, 245, 245} /* UG,UG,A */
00224 , { 245, 245, 245, 245, 245} /* UG,UG,C */
00225 , { 245, 245, 245, 115, 245} /* UG,UG,G */
00226 , { 245, 245, 245, 245, 245} /* UG,UG,U/T */
00227 }
00228 , { { 245, 230, 245, 195, 215} /* UG,AT,E */
00229 , { 220, 195, 220, 150, 145} /* UG,AT,A */
00230 , { 245, 230, 245, 145, 215} /* UG,AT,C */
00231 , { 195, 160, 145, 0, 195} /* UG,AT,G */
00232 , { 195, 145, 195, 195, 160} /* UG,AT,U/T */
00233 }
00234 , { { 250, 230, 250, 195, 215} /* UG,UA,E */
00235 , { 250, 200, 250, 185, 145} /* UG,UA,A */
00236 , { 235, 230, 235, 145, 215} /* UG,UA,C */
00237 , { 195, 170, 145, 30, 195} /* UG,UA,G */
00238 , { 215, 145, 215, 195, 175} /* UG,UA,U/T */
00239 }
00240 , { { 265, 260, 250, 245, 245} /* UG,NN,E */
00241 , { 265, 260, 250, 245, 245} /* UG,NN,A */
00242 , { 245, 245, 245, 245, 245} /* UG,NN,C */
00243 , { 245, 245, 245, 115, 245} /* UG,NN,G */
00244 , { 245, 245, 245, 245, 245} /* UG,NN,U/T */
00245 }
00246 }
00247 , { { { INF, INF, INF, INF, INF} /* AT,NP,E */
00248 , { INF, INF, INF, INF, INF} /* AT,NP,A */
00249 , { INF, INF, INF, INF, INF} /* AT,NP,C */
00250 , { INF, INF, INF, INF, INF} /* AT,NP,G */
00251 , { INF, INF, INF, INF, INF} /* AT,NP,U/T */
00252 }
00253 , { { 160, 135, 160, 160, 160} /* AT,CG,E */
00254 , { 145, 110, 145, 75, 110} /* AT,CG,A */
00255 , { 160, 135, 160, 110, 110} /* AT,CG,C */

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00256 ,{ 160, 65, 110, -85, 160} /* AT,CG,G */
00257 ,{ 160, 110, 130, 160, 70} /* AT,CG,U/T */
00258 }
00259 ,{{ 165, 140, 165, 160, 160} /* AT,GC,E */
00260 ,{ 130, 100, 130, 40, 110} /* AT,GC,A */
00261 ,{ 165, 140, 165, 110, 140} /* AT,GC,C */
00262 ,{ 160, 50, 110, -130, 160} /* AT,GC,G */
00263 ,{ 160, 110, 130, 160, 95} /* AT,GC,U/T */
00264 }
00265 ,{{ 250, 225, 250, 195, 225} /* AT,GT,E */
00266 ,{ 215, 185, 215, 125, 145} /* AT,GT,A */
00267 ,{ 250, 225, 250, 145, 225} /* AT,GT,C */
00268 ,{ 195, 135, 145, -45, 195} /* AT,GT,G */
00269 ,{ 215, 145, 215, 195, 165} /* AT,GT,U/T */
00270 }
00271 ,{{ 245, 220, 245, 195, 195} /* AT,UG,E */
00272 ,{ 230, 195, 230, 160, 145} /* AT,UG,A */
00273 ,{ 245, 220, 245, 145, 195} /* AT,UG,C */
00274 ,{ 195, 150, 145, 0, 195} /* AT,UG,G */
00275 ,{ 215, 145, 215, 195, 160} /* AT,UG,U/T */
00276 }
00277 ,{{ 230, 180, 230, 195, 195} /* AT,AT,E */
00278 ,{ 180, 155, 180, 105, 145} /* AT,AT,A */
00279 ,{ 230, 180, 230, 145, 165} /* AT,AT,C */
00280 ,{ 195, 105, 145, -50, 195} /* AT,AT,G */
00281 ,{ 195, 145, 165, 195, 130} /* AT,AT,U/T */
00282 }
00283 ,{{ 215, 180, 215, 195, 195} /* AT,UA,E */
00284 ,{ 205, 160, 205, 140, 145} /* AT,UA,A */
00285 ,{ 215, 180, 215, 145, 165} /* AT,UA,C */
00286 ,{ 195, 115, 145, -20, 195} /* AT,UA,G */
00287 ,{ 195, 145, 180, 195, 145} /* AT,UA,U/T */
00288 }
00289 ,{{ 250, 225, 250, 195, 225} /* AT,NN,E */
00290 ,{ 230, 195, 230, 160, 145} /* AT,NN,A */
00291 ,{ 250, 225, 250, 145, 225} /* AT,NN,C */
00292 ,{ 195, 150, 145, 0, 195} /* AT,NN,G */
00293 ,{ 215, 145, 215, 195, 185} /* AT,NN,U/T */
00294 }
00295 }
00296 ,{{ INF, INF, INF, INF, INF} /* UA,NP,E */
00297 ,{ INF, INF, INF, INF, INF} /* UA,NP,A */
00298 ,{ INF, INF, INF, INF, INF} /* UA,NP,C */
00299 ,{ INF, INF, INF, INF, INF} /* UA,NP,G */
00300 ,{ INF, INF, INF, INF, INF} /* UA,NP,U/T */
00301 }
00302 ,{{ 165, 165, 150, 160, 160} /* UA,CG,E */
00303 ,{ 145, 115, 145, 85, 110} /* UA,CG,A */
00304 ,{ 165, 165, 150, 110, 130} /* UA,CG,C */
00305 ,{ 160, 100, 110, -55, 160} /* UA,CG,G */
00306 ,{ 160, 110, 130, 160, 90} /* UA,CG,U/T */
00307 }
00308 ,{{ 165, 165, 150, 160, 160} /* UA,GC,E */
00309 ,{ 130, 105, 130, 55, 110} /* UA,GC,A */
00310 ,{ 165, 165, 150, 110, 160} /* UA,GC,C */
00311 ,{ 160, 85, 110, -105, 160} /* UA,GC,G */
00312 ,{ 160, 110, 130, 160, 115} /* UA,GC,U/T */
00313 }
00314 ,{{ 250, 250, 235, 195, 245} /* UA,GT,E */
00315 ,{ 215, 190, 215, 140, 145} /* UA,GT,A */
00316 ,{ 250, 250, 235, 145, 245} /* UA,GT,C */
00317 ,{ 195, 170, 145, -20, 195} /* UA,GT,G */
00318 ,{ 215, 145, 215, 195, 185} /* UA,GT,U/T */
00319 }
00320 ,{{ 250, 250, 235, 195, 215} /* UA,UG,E */
00321 ,{ 230, 200, 230, 170, 145} /* UA,UG,A */
00322 ,{ 250, 250, 235, 145, 215} /* UA,UG,C */
00323 ,{ 195, 185, 145, 30, 195} /* UA,UG,G */
00324 ,{ 215, 145, 215, 195, 175} /* UA,UG,U/T */
00325 }
00326 ,{{ 215, 205, 215, 195, 195} /* UA,AT,E */
00327 ,{ 180, 160, 180, 115, 145} /* UA,AT,A */
00328 ,{ 215, 205, 215, 145, 180} /* UA,AT,C */
00329 ,{ 195, 140, 145, -20, 195} /* UA,AT,G */
00330 ,{ 195, 145, 165, 195, 145} /* UA,AT,U/T */
00331 }
00332 ,{{ 210, 210, 210, 195, 195} /* UA,UA,E */
00333 ,{ 210, 165, 210, 155, 145} /* UA,UA,A */
00334 ,{ 210, 210, 200, 145, 180} /* UA,UA,C */
00335 ,{ 195, 155, 145, 10, 195} /* UA,UA,G */
00336 ,{ 195, 145, 180, 195, 155} /* UA,UA,U/T */
00337 }
00338 ,{{ 250, 250, 235, 195, 245} /* UA,NN,E */
00339 ,{ 230, 200, 230, 170, 145} /* UA,NN,A */
00340 ,{ 250, 250, 235, 145, 245} /* UA,NN,C */
00341 ,{ 195, 185, 145, 30, 195} /* UA,NN,G */
00342 ,{ 215, 145, 215, 195, 200} /* UA,NN,U/T */
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00343     }
00344     }
00345     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,E */
00346     ,{ INF, INF, INF, INF, INF } /* NN,NP,A */
00347     ,{ INF, INF, INF, INF, INF } /* NN,NP,C */
00348     ,{ INF, INF, INF, INF, INF } /* NN,NP,G */
00349     ,{ INF, INF, INF, INF, INF } /* NN,NP,U/T */
00350     }
00351     ,{{ { 240, 235, 215, 160, 160 } /* NN,CG,E */
00352     ,{ 240, 205, 190, 115, 110 } /* NN,CG,A */
00353     ,{ 210, 190, 210, 110, 160 } /* NN,CG,C */
00354     ,{ 160, 115, 110, -35, 160 } /* NN,CG,G */
00355     ,{ 190, 110, 190, 160, 125 } /* NN,CG,U/T */
00356     }
00357     ,{{ { 225, 225, 190, 160, 205 } /* NN,GC,E */
00358     ,{ 210, 175, 175, 85, 110 } /* NN,GC,A */
00359     ,{ 190, 190, 190, 110, 190 } /* NN,GC,C */
00360     ,{ 175, 120, 110, -85, 160 } /* NN,GC,G */
00361     ,{ 205, 110, 190, 160, 170 } /* NN,GC,U/T */
00362     }
00363     ,{{ { 250, 250, 250, 245, 245 } /* NN,GT,E */
00364     ,{ 245, 245, 245, 245, 245 } /* NN,GT,A */
00365     ,{ 250, 250, 250, 245, 245 } /* NN,GT,C */
00366     ,{ 245, 245, 245, 115, 245 } /* NN,GT,G */
00367     ,{ 245, 245, 245, 245, 230 } /* NN,GT,U/T */
00368     }
00369     ,{{ { 265, 265, 245, 245, 245 } /* NN,UG,E */
00370     ,{ 260, 260, 245, 245, 245 } /* NN,UG,A */
00371     ,{ 250, 250, 245, 245, 245 } /* NN,UG,C */
00372     ,{ 245, 245, 245, 115, 245 } /* NN,UG,G */
00373     ,{ 245, 245, 245, 245, 245 } /* NN,UG,U/T */
00374     }
00375     ,{{ { 250, 230, 250, 195, 215 } /* NN,AT,E */
00376     ,{ 225, 195, 225, 150, 145 } /* NN,AT,A */
00377     ,{ 250, 230, 250, 145, 215 } /* NN,AT,C */
00378     ,{ 195, 160, 145, 0, 195 } /* NN,AT,G */
00379     ,{ 225, 145, 225, 195, 185 } /* NN,AT,U/T */
00380     }
00381     ,{{ { 250, 230, 250, 195, 215 } /* NN,UA,E */
00382     ,{ 250, 200, 250, 185, 145 } /* NN,UA,A */
00383     ,{ 235, 230, 235, 145, 215 } /* NN,UA,C */
00384     ,{ 195, 170, 145, 30, 195 } /* NN,UA,G */
00385     ,{ 245, 145, 245, 195, 200 } /* NN,UA,U/T */
00386     }
00387     ,{{ { 265, 265, 250, 245, 245 } /* NN,NN,E */
00388     ,{ 265, 260, 250, 245, 245 } /* NN,NN,A */
00389     ,{ 250, 250, 250, 245, 245 } /* NN,NN,C */
00390     ,{ 245, 245, 245, 115, 245 } /* NN,NN,G */
00391     ,{ 245, 245, 245, 245, 245 } /* NN,NN,U/T */
00392     }
00393     }};
00394

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11.91 intl11dH.h

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00001 PUBLIC int intl1_dH[NBPAIRS+1][NBPAIRS+1][5][5] =
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00003     ,{ INF, INF, INF, INF, INF } /* NP,NP,A */
00004     ,{ INF, INF, INF, INF, INF } /* NP,NP,C */
00005     ,{ INF, INF, INF, INF, INF } /* NP,NP,G */
00006     ,{ INF, INF, INF, INF, INF } /* NP,NP,U */
00007     }
00008     ,{{ { INF, INF, INF, INF, INF } /* NP,CG,E */
00009     ,{ INF, INF, INF, INF, INF } /* NP,CG,A */
00010     ,{ INF, INF, INF, INF, INF } /* NP,CG,C */
00011     ,{ INF, INF, INF, INF, INF } /* NP,CG,G */
00012     ,{ INF, INF, INF, INF, INF } /* NP,CG,U */
00013     }
00014     ,{{ { INF, INF, INF, INF, INF } /* NP,GC,E */
00015     ,{ INF, INF, INF, INF, INF } /* NP,GC,A */
00016     ,{ INF, INF, INF, INF, INF } /* NP,GC,C */
00017     ,{ INF, INF, INF, INF, INF } /* NP,GC,G */
00018     ,{ INF, INF, INF, INF, INF } /* NP,GC,U */
00019     }
00020     ,{{ { INF, INF, INF, INF, INF } /* NP,GU,E */
00021     ,{ INF, INF, INF, INF, INF } /* NP,GU,A */
00022     ,{ INF, INF, INF, INF, INF } /* NP,GU,C */
00023     ,{ INF, INF, INF, INF, INF } /* NP,GU,G */
00024     ,{ INF, INF, INF, INF, INF } /* NP,GU,U */
00025     }
00026     ,{{ { INF, INF, INF, INF, INF } /* NP,UG,E */
00027     ,{ INF, INF, INF, INF, INF } /* NP,UG,A */
00028     ,{ INF, INF, INF, INF, INF } /* NP,UG,C */
00029     ,{ INF, INF, INF, INF, INF } /* NP,UG,G */
00030     ,{ INF, INF, INF, INF, INF } /* NP,UG,U */

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00031 }
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00034 ,{ INF, INF, INF, INF, INF } /* NP,AU,C */
00035 ,{ INF, INF, INF, INF, INF } /* NP,AU,G */
00036 ,{ INF, INF, INF, INF, INF } /* NP,AU,U */
00037 }
00038 ,{{ INF, INF, INF, INF, INF } /* NP,UA,E */
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00041 ,{ INF, INF, INF, INF, INF } /* NP,UA,G */
00042 ,{ INF, INF, INF, INF, INF } /* NP,UA,U */
00043 }
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00045 ,{ INF, INF, INF, INF, INF } /* NP,NN,A */
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00047 ,{ INF, INF, INF, INF, INF } /* NP,NN,G */
00048 ,{ INF, INF, INF, INF, INF } /* NP,NN,U */
00049 }
00050 }
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00053 ,{ INF, INF, INF, INF, INF } /* CG,NP,C */
00054 ,{ INF, INF, INF, INF, INF } /* CG,NP,G */
00055 ,{ INF, INF, INF, INF, INF } /* CG,NP,U */
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00059 ,{ -1050, -1050, -1050, -1050, -1050 } /* CG,CG,C */
00060 ,{ -1050, -1050, -1050, -1840, -1050 } /* CG,CG,G */
00061 ,{ -1050, -1050, -1050, -1050, -1050 } /* CG,CG,U */
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00066 ,{ -1050, -1050, -1050, -1840, -1050 } /* CG,GC,G */
00067 ,{ -1050, -1050, -1050, -1050, -1390 } /* CG,GC,U */
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00070 ,{ -550, -550, -550, -550, -550 } /* CG,GU,A */
00071 ,{ -550, -550, -550, -550, -550 } /* CG,GU,C */
00072 ,{ -550, -550, -550, -1340, -550 } /* CG,GU,G */
00073 ,{ -550, -550, -550, -550, -890 } /* CG,GU,U */
00074 }
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00077 ,{ -550, -550, -550, -550, -550 } /* CG,UG,C */
00078 ,{ -550, -550, -550, -1340, -550 } /* CG,UG,G */
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00091 ,{ -550, -550, -550, -550, -550 } /* CG,UA,U */
00092 }
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00095 ,{ -550, -550, -550, -550, -550 } /* CG,NN,C */
00096 ,{ -550, -550, -550, -1340, -550 } /* CG,NN,G */
00097 ,{ -550, -550, -550, -550, -550 } /* CG,NN,U */
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00099 }
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00103 ,{ INF, INF, INF, INF, INF } /* GC,NP,G */
00104 ,{ INF, INF, INF, INF, INF } /* GC,NP,U */
00105 }
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00108 ,{ -1050, -1050, -1050, -1050, -1050 } /* GC,CG,C */
00109 ,{ -1050, -1050, -1050, -1840, -1050 } /* GC,CG,G */
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00113 ,{ -1050, -1050, -1050, -1050, -1050 } /* GC,GC,A */
00114 ,{ -1050, -1050, -1050, -1050, -1050 } /* GC,GC,C */
00115 ,{ -1050, -1050, -1050, -1840, -1050 } /* GC,GC,G */
00116 ,{ -1050, -1050, -1050, -1050, -1730 } /* GC,GC,U */
00117 }

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00119 ,{ -550, -550, -550, -550, -550} /* GC, GU, A */
00120 ,{ -550, -550, -550, -550, -550} /* GC, GU, C */
00121 ,{ -550, -550, -550, -1340, -550} /* GC, GU, G */
00122 ,{ -550, -550, -550, -550, -1230} /* GC, GU, U */
00123 }
00124 ,{{ -550, -550, -550, -550, -550} /* GC, UG, E */
00125 ,{ -550, -550, -550, -550, -550} /* GC, UG, A */
00126 ,{ -550, -550, -550, -550, -550} /* GC, UG, C */
00127 ,{ -550, -550, -550, -1340, -550} /* GC, UG, G */
00128 ,{ -550, -550, -550, -550, -890} /* GC, UG, U */
00129 }
00130 ,{{ -550, -550, -550, -550, -550} /* GC, AU, E */
00131 ,{ -550, -550, -550, -550, -550} /* GC, AU, A */
00132 ,{ -550, -550, -550, -550, -550} /* GC, AU, C */
00133 ,{ -550, -550, -550, -1340, -550} /* GC, AU, G */
00134 ,{ -550, -550, -550, -550, -1230} /* GC, AU, U */
00135 }
00136 ,{{ -550, -550, -550, -550, -550} /* GC, UA, E */
00137 ,{ -550, -550, -550, -550, -550} /* GC, UA, A */
00138 ,{ -550, -550, -550, -550, -550} /* GC, UA, C */
00139 ,{ -550, -550, -550, -1340, -550} /* GC, UA, G */
00140 ,{ -550, -550, -550, -550, -890} /* GC, UA, U */
00141 }
00142 ,{{ -550, -550, -550, -550, -550} /* GC, NN, E */
00143 ,{ -550, -550, -550, -550, -550} /* GC, NN, A */
00144 ,{ -550, -550, -550, -550, -550} /* GC, NN, C */
00145 ,{ -550, -550, -550, -1340, -550} /* GC, NN, G */
00146 ,{ -550, -550, -550, -550, -890} /* GC, NN, U */
00147 }
00148 }
00149 ,{{{ INF, INF, INF, INF, INF} /* GU, NP, E */
00150 ,{ INF, INF, INF, INF, INF} /* GU, NP, A */
00151 ,{ INF, INF, INF, INF, INF} /* GU, NP, C */
00152 ,{ INF, INF, INF, INF, INF} /* GU, NP, G */
00153 ,{ INF, INF, INF, INF, INF} /* GU, NP, U */
00154 }
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00156 ,{ -550, -550, -550, -550, -550} /* GU, CG, A */
00157 ,{ -550, -550, -550, -550, -550} /* GU, CG, C */
00158 ,{ -550, -550, -550, -1340, -550} /* GU, CG, G */
00159 ,{ -550, -550, -550, -550, -890} /* GU, CG, U */
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00161 ,{{ -550, -550, -550, -550, -550} /* GU, GC, E */
00162 ,{ -550, -550, -550, -550, -550} /* GU, GC, A */
00163 ,{ -550, -550, -550, -550, -550} /* GU, GC, C */
00164 ,{ -550, -550, -550, -1340, -550} /* GU, GC, G */
00165 ,{ -550, -550, -550, -550, -1230} /* GU, GC, U */
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00167 ,{{ -50, -50, -50, -50, -50} /* GU, GU, E */
00168 ,{ -50, -50, -50, -50, -50} /* GU, GU, A */
00169 ,{ -50, -50, -50, -50, -50} /* GU, GU, C */
00170 ,{ -50, -50, -50, -830, -50} /* GU, GU, G */
00171 ,{ -50, -50, -50, -50, -730} /* GU, GU, U */
00172 }
00173 ,{{ -50, -50, -50, -50, -50} /* GU, UG, E */
00174 ,{ -50, -50, -50, -50, -50} /* GU, UG, A */
00175 ,{ -50, -50, -50, -50, -50} /* GU, UG, C */
00176 ,{ -50, -50, -50, -830, -50} /* GU, UG, G */
00177 ,{ -50, -50, -50, -50, -390} /* GU, UG, U */
00178 }
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00181 ,{ -50, -50, -50, -50, -50} /* GU, AU, C */
00182 ,{ -50, -50, -50, -830, -50} /* GU, AU, G */
00183 ,{ -50, -50, -50, -50, -730} /* GU, AU, U */
00184 }
00185 ,{{ -50, -50, -50, -50, -50} /* GU, UA, E */
00186 ,{ -50, -50, -50, -50, -50} /* GU, UA, A */
00187 ,{ -50, -50, -50, -50, -50} /* GU, UA, C */
00188 ,{ -50, -50, -50, -830, -50} /* GU, UA, G */
00189 ,{ -50, -50, -50, -50, -390} /* GU, UA, U */
00190 }
00191 ,{{ -50, -50, -50, -50, -50} /* GU, NN, E */
00192 ,{ -50, -50, -50, -50, -50} /* GU, NN, A */
00193 ,{ -50, -50, -50, -50, -50} /* GU, NN, C */
00194 ,{ -50, -50, -50, -830, -50} /* GU, NN, G */
00195 ,{ -50, -50, -50, -50, -390} /* GU, NN, U */
00196 }
00197 }
00198 ,{{{ INF, INF, INF, INF, INF} /* UG, NP, E */
00199 ,{ INF, INF, INF, INF, INF} /* UG, NP, A */
00200 ,{ INF, INF, INF, INF, INF} /* UG, NP, C */
00201 ,{ INF, INF, INF, INF, INF} /* UG, NP, G */
00202 ,{ INF, INF, INF, INF, INF} /* UG, NP, U */
00203 }
00204 ,{{ -550, -550, -550, -550, -550} /* UG, CG, E */

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00207 , { -550, -550, -550, -1340, -550 } /* UG,CG,G */
00208 , { -550, -550, -550, -550, -550 } /* UG,CG,U */
00209 }
00210 , { { -550, -550, -550, -550, -550 } /* UG,GC,E */
00211 , { -550, -550, -550, -550, -550 } /* UG,GC,A */
00212 , { -550, -550, -550, -550, -550 } /* UG,GC,C */
00213 , { -550, -550, -550, -1340, -550 } /* UG,GC,G */
00214 , { -550, -550, -550, -550, -890 } /* UG,GC,U */
00215 }
00216 , { { -50, -50, -50, -50, -50 } /* UG,GU,E */
00217 , { -50, -50, -50, -50, -50 } /* UG,GU,A */
00218 , { -50, -50, -50, -50, -50 } /* UG,GU,C */
00219 , { -50, -50, -50, -830, -50 } /* UG,GU,G */
00220 , { -50, -50, -50, -50, -390 } /* UG,GU,U */
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00222 , { { -50, -50, -50, -50, -50 } /* UG,UG,E */
00223 , { -50, -50, -50, -50, -50 } /* UG,UG,A */
00224 , { -50, -50, -50, -50, -50 } /* UG,UG,C */
00225 , { -50, -50, -50, -830, -50 } /* UG,UG,G */
00226 , { -50, -50, -50, -50, -50 } /* UG,UG,U */
00227 }
00228 , { { -50, -50, -50, -50, -50 } /* UG,AU,E */
00229 , { -50, -50, -50, -50, -50 } /* UG,AU,A */
00230 , { -50, -50, -50, -50, -50 } /* UG,AU,C */
00231 , { -50, -50, -50, -830, -50 } /* UG,AU,G */
00232 , { -50, -50, -50, -50, -390 } /* UG,AU,U */
00233 }
00234 , { { -50, -50, -50, -50, -50 } /* UG,UA,E */
00235 , { -50, -50, -50, -50, -50 } /* UG,UA,A */
00236 , { -50, -50, -50, -50, -50 } /* UG,UA,C */
00237 , { -50, -50, -50, -830, -50 } /* UG,UA,G */
00238 , { -50, -50, -50, -50, -50 } /* UG,UA,U */
00239 }
00240 , { { -50, -50, -50, -50, -50 } /* UG,NN,E */
00241 , { -50, -50, -50, -50, -50 } /* UG,NN,A */
00242 , { -50, -50, -50, -50, -50 } /* UG,NN,C */
00243 , { -50, -50, -50, -830, -50 } /* UG,NN,G */
00244 , { -50, -50, -50, -50, -50 } /* UG,NN,U */
00245 }
00246 }
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00249 , { INF, INF, INF, INF, INF } /* AU,NP,C */
00250 , { INF, INF, INF, INF, INF } /* AU,NP,G */
00251 , { INF, INF, INF, INF, INF } /* AU,NP,U */
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00254 , { -550, -550, -550, -550, -550 } /* AU,CG,A */
00255 , { -550, -550, -550, -550, -550 } /* AU,CG,C */
00256 , { -550, -550, -550, -1340, -550 } /* AU,CG,G */
00257 , { -550, -550, -550, -550, -890 } /* AU,CG,U */
00258 }
00259 , { { -550, -550, -550, -550, -550 } /* AU,GC,E */
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00261 , { -550, -550, -550, -550, -550 } /* AU,GC,C */
00262 , { -550, -550, -550, -1340, -550 } /* AU,GC,G */
00263 , { -550, -550, -550, -550, -1230 } /* AU,GC,U */
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00267 , { -50, -50, -50, -50, -50 } /* AU,GU,C */
00268 , { -50, -50, -50, -830, -50 } /* AU,GU,G */
00269 , { -50, -50, -50, -50, -730 } /* AU,GU,U */
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00273 , { -50, -50, -50, -50, -50 } /* AU,UG,C */
00274 , { -50, -50, -50, -830, -50 } /* AU,UG,G */
00275 , { -50, -50, -50, -50, -390 } /* AU,UG,U */
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00279 , { -50, -50, -50, -50, -50 } /* AU,AU,C */
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00286 , { -50, -50, -50, -830, -50 } /* AU,UA,G */
00287 , { -50, -50, -50, -50, -390 } /* AU,UA,U */
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00293 , { -50, -50, -50, -50, -390} /* AU, NN, U */
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00295 }
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00297 , { INF, INF, INF, INF, INF} /* UA, NP, A */
00298 , { INF, INF, INF, INF, INF} /* UA, NP, C */
00299 , { INF, INF, INF, INF, INF} /* UA, NP, G */
00300 , { INF, INF, INF, INF, INF} /* UA, NP, U */
00301 }
00302 , { { -550, -550, -550, -550, -550} /* UA, CG, E */
00303 , { -550, -550, -550, -550, -550} /* UA, CG, A */
00304 , { -550, -550, -550, -550, -550} /* UA, CG, C */
00305 , { -550, -550, -550, -1340, -550} /* UA, CG, G */
00306 , { -550, -550, -550, -550, -550} /* UA, CG, U */
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00308 , { { -550, -550, -550, -550, -550} /* UA, GC, E */
00309 , { -550, -550, -550, -550, -550} /* UA, GC, A */
00310 , { -550, -550, -550, -550, -550} /* UA, GC, C */
00311 , { -550, -550, -550, -1340, -550} /* UA, GC, G */
00312 , { -550, -550, -550, -550, -890} /* UA, GC, U */
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00314 , { { -50, -50, -50, -50, -50} /* UA, GU, E */
00315 , { -50, -50, -50, -50, -50} /* UA, GU, A */
00316 , { -50, -50, -50, -50, -50} /* UA, GU, C */
00317 , { -50, -50, -50, -830, -50} /* UA, GU, G */
00318 , { -50, -50, -50, -50, -390} /* UA, GU, U */
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00322 , { -50, -50, -50, -50, -50} /* UA, UG, C */
00323 , { -50, -50, -50, -830, -50} /* UA, UG, G */
00324 , { -50, -50, -50, -50, -50} /* UA, UG, U */
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00326 , { { -50, -50, -50, -50, -50} /* UA, AU, E */
00327 , { -50, -50, -50, -50, -50} /* UA, AU, A */
00328 , { -50, -50, -50, -50, -50} /* UA, AU, C */
00329 , { -50, -50, -50, -830, -50} /* UA, AU, G */
00330 , { -50, -50, -50, -50, -390} /* UA, AU, U */
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00332 , { { -50, -50, -50, -50, -50} /* UA, UA, E */
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00334 , { -50, -50, -50, -50, -50} /* UA, UA, C */
00335 , { -50, -50, -50, -830, -50} /* UA, UA, G */
00336 , { -50, -50, -50, -50, -50} /* UA, UA, U */
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00338 , { { -50, -50, -50, -50, -50} /* UA, NN, E */
00339 , { -50, -50, -50, -50, -50} /* UA, NN, A */
00340 , { -50, -50, -50, -50, -50} /* UA, NN, C */
00341 , { -50, -50, -50, -830, -50} /* UA, NN, G */
00342 , { -50, -50, -50, -50, -50} /* UA, NN, U */
00343 }
00344 }
00345 , { { { INF, INF, INF, INF, INF} /* NN, NP, E */
00346 , { INF, INF, INF, INF, INF} /* NN, NP, A */
00347 , { INF, INF, INF, INF, INF} /* NN, NP, C */
00348 , { INF, INF, INF, INF, INF} /* NN, NP, G */
00349 , { INF, INF, INF, INF, INF} /* NN, NP, U */
00350 }
00351 , { { -550, -550, -550, -550, -550} /* NN, CG, E */
00352 , { -550, -550, -550, -550, -550} /* NN, CG, A */
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00354 , { -550, -550, -550, -1340, -550} /* NN, CG, G */
00355 , { -550, -550, -550, -550, -550} /* NN, CG, U */
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00358 , { -550, -550, -550, -550, -550} /* NN, GC, A */
00359 , { -550, -550, -550, -550, -550} /* NN, GC, C */
00360 , { -550, -550, -550, -1340, -550} /* NN, GC, G */
00361 , { -550, -550, -550, -550, -890} /* NN, GC, U */
00362 }
00363 , { { -50, -50, -50, -50, -50} /* NN, GU, E */
00364 , { -50, -50, -50, -50, -50} /* NN, GU, A */
00365 , { -50, -50, -50, -50, -50} /* NN, GU, C */
00366 , { -50, -50, -50, -830, -50} /* NN, GU, G */
00367 , { -50, -50, -50, -50, -390} /* NN, GU, U */
00368 }
00369 , { { -50, -50, -50, -50, -50} /* NN, UG, E */
00370 , { -50, -50, -50, -50, -50} /* NN, UG, A */
00371 , { -50, -50, -50, -50, -50} /* NN, UG, C */
00372 , { -50, -50, -50, -830, -50} /* NN, UG, G */
00373 , { -50, -50, -50, -50, -50} /* NN, UG, U */
00374 }
00375 , { { -50, -50, -50, -50, -50} /* NN, AU, E */
00376 , { -50, -50, -50, -50, -50} /* NN, AU, A */
00377 , { -50, -50, -50, -50, -50} /* NN, AU, C */
00378 , { -50, -50, -50, -830, -50} /* NN, AU, G */

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00379 , { -50, -50, -50, -50, -390} /* NN,AU,U */
00380 }
00381 , { { -50, -50, -50, -50, -50} /* NN,UA,E */
00382 , { -50, -50, -50, -50, -50} /* NN,UA,A */
00383 , { -50, -50, -50, -50, -50} /* NN,UA,C */
00384 , { -50, -50, -50, -830, -50} /* NN,UA,G */
00385 , { -50, -50, -50, -50, -50} /* NN,UA,U */
00386 }
00387 , { { -50, -50, -50, -50, -50} /* NN,NN,E */
00388 , { -50, -50, -50, -50, -50} /* NN,NN,A */
00389 , { -50, -50, -50, -50, -50} /* NN,NN,C */
00390 , { -50, -50, -50, -830, -50} /* NN,NN,G */
00391 , { -50, -50, -50, -50, -50} /* NN,NN,U */
00392 }
00393 } };
00394

```

11.92 intl11dH_D.h

```

00001 PUBLIC int intl1_dH_D[NBPAIRS+1][NBPAIRS+1][5][5] =
00002 {{{ { INF, INF, INF, INF, INF} /* NP,NP,E */
00003 , { INF, INF, INF, INF, INF} /* NP,NP,A */
00004 , { INF, INF, INF, INF, INF} /* NP,NP,C */
00005 , { INF, INF, INF, INF, INF} /* NP,NP,G */
00006 , { INF, INF, INF, INF, INF} /* NP,NP,T */
00007 }
00008 , { { INF, INF, INF, INF, INF} /* NP,CG,E */
00009 , { INF, INF, INF, INF, INF} /* NP,CG,A */
00010 , { INF, INF, INF, INF, INF} /* NP,CG,C */
00011 , { INF, INF, INF, INF, INF} /* NP,CG,G */
00012 , { INF, INF, INF, INF, INF} /* NP,CG,T */
00013 }
00014 , { { INF, INF, INF, INF, INF} /* NP,GC,E */
00015 , { INF, INF, INF, INF, INF} /* NP,GC,A */
00016 , { INF, INF, INF, INF, INF} /* NP,GC,C */
00017 , { INF, INF, INF, INF, INF} /* NP,GC,G */
00018 , { INF, INF, INF, INF, INF} /* NP,GC,T */
00019 }
00020 , { { INF, INF, INF, INF, INF} /* NP,GT,E */
00021 , { INF, INF, INF, INF, INF} /* NP,GT,A */
00022 , { INF, INF, INF, INF, INF} /* NP,GT,C */
00023 , { INF, INF, INF, INF, INF} /* NP,GT,G */
00024 , { INF, INF, INF, INF, INF} /* NP,GT,T */
00025 }
00026 , { { INF, INF, INF, INF, INF} /* NP,TG,E */
00027 , { INF, INF, INF, INF, INF} /* NP,TG,A */
00028 , { INF, INF, INF, INF, INF} /* NP,TG,C */
00029 , { INF, INF, INF, INF, INF} /* NP,TG,G */
00030 , { INF, INF, INF, INF, INF} /* NP,TG,T */
00031 }
00032 , { { INF, INF, INF, INF, INF} /* NP,AT,E */
00033 , { INF, INF, INF, INF, INF} /* NP,AT,A */
00034 , { INF, INF, INF, INF, INF} /* NP,AT,C */
00035 , { INF, INF, INF, INF, INF} /* NP,AT,G */
00036 , { INF, INF, INF, INF, INF} /* NP,AT,T */
00037 }
00038 , { { INF, INF, INF, INF, INF} /* NP,TA,E */
00039 , { INF, INF, INF, INF, INF} /* NP,TA,A */
00040 , { INF, INF, INF, INF, INF} /* NP,TA,C */
00041 , { INF, INF, INF, INF, INF} /* NP,TA,G */
00042 , { INF, INF, INF, INF, INF} /* NP,TA,T */
00043 }
00044 , { { INF, INF, INF, INF, INF} /* NP,NN,E */
00045 , { INF, INF, INF, INF, INF} /* NP,NN,A */
00046 , { INF, INF, INF, INF, INF} /* NP,NN,C */
00047 , { INF, INF, INF, INF, INF} /* NP,NN,G */
00048 , { INF, INF, INF, INF, INF} /* NP,NN,T */
00049 }
00050 }
00051 , { { { INF, INF, INF, INF, INF} /* CG,NP,E */
00052 , { INF, INF, INF, INF, INF} /* CG,NP,A */
00053 , { INF, INF, INF, INF, INF} /* CG,NP,C */
00054 , { INF, INF, INF, INF, INF} /* CG,NP,G */
00055 , { INF, INF, INF, INF, INF} /* CG,NP,T */
00056 }
00057 , { { 610, 610, 510, 610, 510} /* CG,CG,E */
00058 , { 610, 400, 510, 610, 510} /* CG,CG,A */
00059 , { 510, 510, 410, 510, 160} /* CG,CG,C */
00060 , { 610, 610, 510, 10, 510} /* CG,CG,G */
00061 , { 510, 510, 160, 510, -270} /* CG,CG,T */
00062 }
00063 , { { 930, 930, 750, 930, 460} /* CG,GC,E */
00064 , { 460, -60, 460, 130, 460} /* CG,GC,A */
00065 , { 930, 930, 750, 930, 190} /* CG,GC,C */
00066 , { 460, 390, 460, -90, 460} /* CG,GC,G */

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```

00067 , { 930, 930, 50, 930, 210} /* CG,GC,T */
00068 }
00069 , {{ 930, 930, 750, 930, 460} /* CG,GT,E */
00070 , { 460, -60, 460, 130, 460} /* CG,GT,A */
00071 , { 930, 930, 750, 930, 190} /* CG,GT,C */
00072 , { 460, 390, 460, -90, 460} /* CG,GT,G */
00073 , { 930, 930, 50, 930, 210} /* CG,GT,T */
00074 }
00075 , {{ 610, 610, 510, 610, 510} /* CG,TG,E */
00076 , { 610, 400, 510, 610, 510} /* CG,TG,A */
00077 , { 510, 510, 410, 510, 160} /* CG,TG,C */
00078 , { 610, 610, 510, 10, 510} /* CG,TG,G */
00079 , { 510, 510, 160, 510, -270} /* CG,TG,T */
00080 }
00081 , {{ 530, 500, 530, 390, 530} /* CG,AT,E */
00082 , { 530, 500, 530, -220, 530} /* CG,AT,A */
00083 , { 390, 390, 260, 390, -1230} /* CG,AT,C */
00084 , { 530, -630, 530, -990, 530} /* CG,AT,G */
00085 , { 390, 390, -490, 390, -750} /* CG,AT,T */
00086 }
00087 , {{ 1320, 1000, 1320, 1130, 1320} /* CG,TA,E */
00088 , { 1320, 1000, 1320, 1130, 1320} /* CG,TA,A */
00089 , { 960, 960, 590, 960, 10} /* CG,TA,C */
00090 , { 1320, 690, 1320, -110, 1320} /* CG,TA,G */
00091 , { 960, 960, 300, 960, 70} /* CG,TA,T */
00092 }
00093 , {{ 1320, 1000, 1320, 1130, 1320} /* CG,NN,E */
00094 , { 1320, 1000, 1320, 1130, 1320} /* CG,NN,A */
00095 , { 960, 960, 750, 960, 190} /* CG,NN,C */
00096 , { 1320, 690, 1320, 10, 1320} /* CG,NN,G */
00097 , { 960, 960, 300, 960, 210} /* CG,NN,T */
00098 }
00099 }
00100 , {{{ INF, INF, INF, INF, INF} /* GC,NP,E */
00101 , { INF, INF, INF, INF, INF} /* GC,NP,A */
00102 , { INF, INF, INF, INF, INF} /* GC,NP,C */
00103 , { INF, INF, INF, INF, INF} /* GC,NP,G */
00104 , { INF, INF, INF, INF, INF} /* GC,NP,T */
00105 }
00106 , {{ 930, 460, 930, 460, 930} /* GC,CG,E */
00107 , { 930, -60, 930, 390, 930} /* GC,CG,A */
00108 , { 750, 460, 750, 460, 50} /* GC,CG,C */
00109 , { 930, 130, 930, -90, 930} /* GC,CG,G */
00110 , { 460, 460, 190, 460, 210} /* GC,CG,T */
00111 }
00112 , {{ 600, 390, 600, 390, 390} /* GC,GC,E */
00113 , { 390, 260, 390, 240, 390} /* GC,GC,A */
00114 , { 600, 390, 600, 390, -60} /* GC,GC,C */
00115 , { 390, 240, 390, -280, 390} /* GC,GC,G */
00116 , { 390, 390, -60, 390, 30} /* GC,GC,T */
00117 }
00118 , {{ 600, 390, 600, 390, 390} /* GC,GT,E */
00119 , { 390, 260, 390, 240, 390} /* GC,GT,A */
00120 , { 600, 390, 600, 390, -60} /* GC,GT,C */
00121 , { 390, 240, 390, -280, 390} /* GC,GT,G */
00122 , { 390, 390, -60, 390, 30} /* GC,GT,T */
00123 }
00124 , {{ 930, 460, 930, 460, 930} /* GC,TG,E */
00125 , { 930, -60, 930, 390, 930} /* GC,TG,A */
00126 , { 750, 460, 750, 460, 50} /* GC,TG,C */
00127 , { 930, 130, 930, -90, 930} /* GC,TG,G */
00128 , { 460, 460, 190, 460, 210} /* GC,TG,T */
00129 }
00130 , {{ 1280, 1090, 1280, 1090, 1160} /* GC,AT,E */
00131 , { 1000, 1000, 410, 450, 410} /* GC,AT,A */
00132 , { 1280, 1090, 1280, 1090, 1160} /* GC,AT,C */
00133 , { 890, 890, 410, -500, 410} /* GC,AT,G */
00134 , { 1090, 1090, 130, 1090, 50} /* GC,AT,T */
00135 }
00136 , {{ 1320, 690, 1320, 1130, 1320} /* GC,TA,E */
00137 , { 1320, -140, 1320, 1130, 1320} /* GC,TA,A */
00138 , { 1290, 420, 1290, 420, -40} /* GC,TA,C */
00139 , { 1320, 690, 1320, 340, 1320} /* GC,TA,G */
00140 , { 420, 420, 370, 420, -1000} /* GC,TA,T */
00141 }
00142 , {{ 1320, 1090, 1320, 1130, 1320} /* GC,NN,E */
00143 , { 1320, 1000, 1320, 1130, 1320} /* GC,NN,A */
00144 , { 1290, 1090, 1290, 1090, 1160} /* GC,NN,C */
00145 , { 1320, 890, 1320, 340, 1320} /* GC,NN,G */
00146 , { 1090, 1090, 370, 1090, 210} /* GC,NN,T */
00147 }
00148 }
00149 , {{{ INF, INF, INF, INF, INF} /* GT,NP,E */
00150 , { INF, INF, INF, INF, INF} /* GT,NP,A */
00151 , { INF, INF, INF, INF, INF} /* GT,NP,C */
00152 , { INF, INF, INF, INF, INF} /* GT,NP,G */
00153 , { INF, INF, INF, INF, INF} /* GT,NP,T */

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```
00154 }
00155 ,{{ 930, 460, 930, 460, 930} /* GT,CG,E */
00156 ,{ 930, -60, 930, 390, 930} /* GT,CG,A */
00157 ,{ 750, 460, 750, 460, 50} /* GT,CG,C */
00158 ,{ 930, 130, 930, -90, 930} /* GT,CG,G */
00159 ,{ 460, 460, 190, 460, 210} /* GT,CG,T */
00160 }
00161 ,{{ 600, 390, 600, 390, 390} /* GT,GC,E */
00162 ,{ 390, 260, 390, 240, 390} /* GT,GC,A */
00163 ,{ 600, 390, 600, 390, -60} /* GT,GC,C */
00164 ,{ 390, 240, 390, -280, 390} /* GT,GC,G */
00165 ,{ 390, 390, -60, 390, 30} /* GT,GC,T */
00166 }
00167 ,{{ 600, 390, 600, 390, 390} /* GT,GT,E */
00168 ,{ 390, 260, 390, 240, 390} /* GT,GT,A */
00169 ,{ 600, 390, 600, 390, -60} /* GT,GT,C */
00170 ,{ 390, 240, 390, -280, 390} /* GT,GT,G */
00171 ,{ 390, 390, -60, 390, 30} /* GT,GT,T */
00172 }
00173 ,{{ 930, 460, 930, 460, 930} /* GT,TG,E */
00174 ,{ 930, -60, 930, 390, 930} /* GT,TG,A */
00175 ,{ 750, 460, 750, 460, 50} /* GT,TG,C */
00176 ,{ 930, 130, 930, -90, 930} /* GT,TG,G */
00177 ,{ 460, 460, 190, 460, 210} /* GT,TG,T */
00178 }
00179 ,{{ 1280, 1090, 1280, 1090, 1160} /* GT,AT,E */
00180 ,{ 1000, 1000, 410, 450, 410} /* GT,AT,A */
00181 ,{ 1280, 1090, 1280, 1090, 1160} /* GT,AT,C */
00182 ,{ 890, 890, 410, -500, 410} /* GT,AT,G */
00183 ,{ 1090, 1090, 130, 1090, 50} /* GT,AT,T */
00184 }
00185 ,{{ 1320, 690, 1320, 1130, 1320} /* GT,TA,E */
00186 ,{ 1320, -140, 1320, 1130, 1320} /* GT,TA,A */
00187 ,{ 1290, 420, 1290, 420, -40} /* GT,TA,C */
00188 ,{ 1320, 690, 1320, 340, 1320} /* GT,TA,G */
00189 ,{ 420, 420, 370, 420, -1000} /* GT,TA,T */
00190 }
00191 ,{{ 1320, 1090, 1320, 1130, 1320} /* GT,NN,E */
00192 ,{ 1320, 1000, 1320, 1130, 1320} /* GT,NN,A */
00193 ,{ 1290, 1090, 1290, 1090, 1160} /* GT,NN,C */
00194 ,{ 1320, 890, 1320, 340, 1320} /* GT,NN,G */
00195 ,{ 1090, 1090, 370, 1090, 210} /* GT,NN,T */
00196 }
00197 }
00198 ,{{{ INF, INF, INF, INF, INF} /* TG,NP,E */
00199 ,{ INF, INF, INF, INF, INF} /* TG,NP,A */
00200 ,{ INF, INF, INF, INF, INF} /* TG,NP,C */
00201 ,{ INF, INF, INF, INF, INF} /* TG,NP,G */
00202 ,{ INF, INF, INF, INF, INF} /* TG,NP,T */
00203 }
00204 ,{{ 610, 610, 510, 610, 510} /* TG,CG,E */
00205 ,{ 610, 400, 510, 610, 510} /* TG,CG,A */
00206 ,{ 510, 510, 410, 510, 160} /* TG,CG,C */
00207 ,{ 610, 610, 510, 10, 510} /* TG,CG,G */
00208 ,{ 510, 510, 160, 510, -270} /* TG,CG,T */
00209 }
00210 ,{{ 930, 930, 750, 930, 460} /* TG,GC,E */
00211 ,{ 460, -60, 460, 130, 460} /* TG,GC,A */
00212 ,{ 930, 930, 750, 930, 190} /* TG,GC,C */
00213 ,{ 460, 390, 460, -90, 460} /* TG,GC,G */
00214 ,{ 930, 930, 50, 930, 210} /* TG,GC,T */
00215 }
00216 ,{{ 930, 930, 750, 930, 460} /* TG,GT,E */
00217 ,{ 460, -60, 460, 130, 460} /* TG,GT,A */
00218 ,{ 930, 930, 750, 930, 190} /* TG,GT,C */
00219 ,{ 460, 390, 460, -90, 460} /* TG,GT,G */
00220 ,{ 930, 930, 50, 930, 210} /* TG,GT,T */
00221 }
00222 ,{{ 610, 610, 510, 610, 510} /* TG,TG,E */
00223 ,{ 610, 400, 510, 610, 510} /* TG,TG,A */
00224 ,{ 510, 510, 410, 510, 160} /* TG,TG,C */
00225 ,{ 610, 610, 510, 10, 510} /* TG,TG,G */
00226 ,{ 510, 510, 160, 510, -270} /* TG,TG,T */
00227 }
00228 ,{{ 530, 500, 530, 390, 530} /* TG,AT,E */
00229 ,{ 530, 500, 530, -220, 530} /* TG,AT,A */
00230 ,{ 390, 390, 260, 390, -1230} /* TG,AT,C */
00231 ,{ 530, -630, 530, -990, 530} /* TG,AT,G */
00232 ,{ 390, 390, -490, 390, -750} /* TG,AT,T */
00233 }
00234 ,{{ 1320, 1000, 1320, 1130, 1320} /* TG,TA,E */
00235 ,{ 1320, 1000, 1320, 1130, 1320} /* TG,TA,A */
00236 ,{ 960, 960, 590, 960, 10} /* TG,TA,C */
00237 ,{ 1320, 690, 1320, -110, 1320} /* TG,TA,G */
00238 ,{ 960, 960, 300, 960, 70} /* TG,TA,T */
00239 }
00240 ,{{ 1320, 1000, 1320, 1130, 1320} /* TG,NN,E */
```

```

00241 , { 1320, 1000, 1320, 1130, 1320} /* TG, NN, A */
00242 , { 960, 960, 750, 960, 190} /* TG, NN, C */
00243 , { 1320, 690, 1320, 10, 1320} /* TG, NN, G */
00244 , { 960, 960, 300, 960, 210} /* TG, NN, T */
00245 }
00246 }
00247 , { { INF, INF, INF, INF, INF} /* AT, NP, E */
00248 , { INF, INF, INF, INF, INF} /* AT, NP, A */
00249 , { INF, INF, INF, INF, INF} /* AT, NP, C */
00250 , { INF, INF, INF, INF, INF} /* AT, NP, G */
00251 , { INF, INF, INF, INF, INF} /* AT, NP, T */
00252 }
00253 , { { 530, 530, 390, 530, 390} /* AT, CG, E */
00254 , { 500, 500, 390, -630, 390} /* AT, CG, A */
00255 , { 530, 530, 260, 530, -490} /* AT, CG, C */
00256 , { 390, -220, 390, -990, 390} /* AT, CG, G */
00257 , { 530, 530, -1230, 530, -750} /* AT, CG, T */
00258 }
00259 , { { 1280, 1000, 1280, 890, 1090} /* AT, GC, E */
00260 , { 1090, 1000, 1090, 890, 1090} /* AT, GC, A */
00261 , { 1280, 410, 1280, 410, 130} /* AT, GC, C */
00262 , { 1090, 450, 1090, -500, 1090} /* AT, GC, G */
00263 , { 1160, 410, 1160, 410, 50} /* AT, GC, T */
00264 }
00265 , { { 1280, 1000, 1280, 890, 1090} /* AT, GT, E */
00266 , { 1090, 1000, 1090, 890, 1090} /* AT, GT, A */
00267 , { 1280, 410, 1280, 410, 130} /* AT, GT, C */
00268 , { 1090, 450, 1090, -500, 1090} /* AT, GT, G */
00269 , { 1160, 410, 1160, 410, 50} /* AT, GT, T */
00270 }
00271 , { { 530, 530, 390, 530, 390} /* AT, TG, E */
00272 , { 500, 500, 390, -630, 390} /* AT, TG, A */
00273 , { 530, 530, 260, 530, -490} /* AT, TG, C */
00274 , { 390, -220, 390, -990, 390} /* AT, TG, G */
00275 , { 530, 530, -1230, 530, -750} /* AT, TG, T */
00276 }
00277 , { { 980, 980, 980, 980, 980} /* AT, AT, E */
00278 , { 980, 490, 980, 710, 980} /* AT, AT, A */
00279 , { 980, 980, 750, 980, 430} /* AT, AT, C */
00280 , { 980, 710, 980, 410, 980} /* AT, AT, G */
00281 , { 980, 980, 430, 980, 570} /* AT, AT, T */
00282 }
00283 , { { 1470, 1290, 1470, 1070, 150} /* AT, TA, E */
00284 , { 1290, 1290, 150, 1070, 150} /* AT, TA, A */
00285 , { 1470, 1040, 1470, 1040, -160} /* AT, TA, C */
00286 , { 180, 180, 150, 160, 150} /* AT, TA, G */
00287 , { 1040, 1040, 350, 1040, -480} /* AT, TA, T */
00288 }
00289 , { { 1470, 1290, 1470, 1070, 1090} /* AT, NN, E */
00290 , { 1290, 1290, 1090, 1070, 1090} /* AT, NN, A */
00291 , { 1470, 1040, 1470, 1040, 430} /* AT, NN, C */
00292 , { 1090, 710, 1090, 410, 1090} /* AT, NN, G */
00293 , { 1160, 1040, 1160, 1040, 570} /* AT, NN, T */
00294 }
00295 }
00296 , { { INF, INF, INF, INF, INF} /* TA, NP, E */
00297 , { INF, INF, INF, INF, INF} /* TA, NP, A */
00298 , { INF, INF, INF, INF, INF} /* TA, NP, C */
00299 , { INF, INF, INF, INF, INF} /* TA, NP, G */
00300 , { INF, INF, INF, INF, INF} /* TA, NP, T */
00301 }
00302 , { { 1320, 1320, 960, 1320, 960} /* TA, CG, E */
00303 , { 1000, 1000, 960, 690, 960} /* TA, CG, A */
00304 , { 1320, 1320, 590, 1320, 300} /* TA, CG, C */
00305 , { 1130, 1130, 960, -110, 960} /* TA, CG, G */
00306 , { 1320, 1320, 10, 1320, 70} /* TA, CG, T */
00307 }
00308 , { { 1320, 1320, 1290, 1320, 420} /* TA, GC, E */
00309 , { 690, -140, 420, 690, 420} /* TA, GC, A */
00310 , { 1320, 1320, 1290, 1320, 370} /* TA, GC, C */
00311 , { 1130, 1130, 420, 340, 420} /* TA, GC, G */
00312 , { 1320, 1320, -40, 1320, -1000} /* TA, GC, T */
00313 }
00314 , { { 1320, 1320, 1290, 1320, 420} /* TA, GT, E */
00315 , { 690, -140, 420, 690, 420} /* TA, GT, A */
00316 , { 1320, 1320, 1290, 1320, 370} /* TA, GT, C */
00317 , { 1130, 1130, 420, 340, 420} /* TA, GT, G */
00318 , { 1320, 1320, -40, 1320, -1000} /* TA, GT, T */
00319 }
00320 , { { 1320, 1320, 960, 1320, 960} /* TA, TG, E */
00321 , { 1000, 1000, 960, 690, 960} /* TA, TG, A */
00322 , { 1320, 1320, 590, 1320, 300} /* TA, TG, C */
00323 , { 1130, 1130, 960, -110, 960} /* TA, TG, G */
00324 , { 1320, 1320, 10, 1320, 70} /* TA, TG, T */
00325 }
00326 , { { 1470, 1290, 1470, 180, 1040} /* TA, AT, E */
00327 , { 1290, 1290, 1040, 180, 1040} /* TA, AT, A */

```

```

00328 , { 1470, 150, 1470, 150, 350} /* TA,AT,C */
00329 , { 1070, 1070, 1040, 160, 1040} /* TA,AT,G */
00330 , { 150, 150, -160, 150, -480} /* TA,AT,T */
00331 }
00332 , { { 1740, 1430, 1740, 1430, 1430} /* TA,TA,E */
00333 , { 1430, 1210, 1430, 1190, 1430} /* TA,TA,A */
00334 , { 1740, 1430, 1740, 1430, 250} /* TA,TA,C */
00335 , { 1430, 1190, 1430, 840, 1430} /* TA,TA,G */
00336 , { 1430, 1430, 250, 1430, 620} /* TA,TA,T */
00337 }
00338 , { { 1740, 1430, 1740, 1430, 1430} /* TA,NN,E */
00339 , { 1430, 1290, 1430, 1190, 1430} /* TA,NN,A */
00340 , { 1740, 1430, 1740, 1430, 370} /* TA,NN,C */
00341 , { 1430, 1190, 1430, 840, 1430} /* TA,NN,G */
00342 , { 1430, 1430, 250, 1430, 620} /* TA,NN,T */
00343 }
00344 }
00345 , { { { INF, INF, INF, INF, INF} /* NN,NP,E */
00346 , { INF, INF, INF, INF, INF} /* NN,NP,A */
00347 , { INF, INF, INF, INF, INF} /* NN,NP,C */
00348 , { INF, INF, INF, INF, INF} /* NN,NP,G */
00349 , { INF, INF, INF, INF, INF} /* NN,NP,T */
00350 }
00351 , { { 1320, 1320, 960, 1320, 960} /* NN,CG,E */
00352 , { 1000, 1000, 960, 690, 960} /* NN,CG,A */
00353 , { 1320, 1320, 750, 1320, 300} /* NN,CG,C */
00354 , { 1130, 1130, 960, 10, 960} /* NN,CG,G */
00355 , { 1320, 1320, 190, 1320, 210} /* NN,CG,T */
00356 }
00357 , { { 1320, 1320, 1290, 1320, 1090} /* NN,GC,E */
00358 , { 1090, 1000, 1090, 890, 1090} /* NN,GC,A */
00359 , { 1320, 1320, 1290, 1320, 370} /* NN,GC,C */
00360 , { 1130, 1130, 1090, 340, 1090} /* NN,GC,G */
00361 , { 1320, 1320, 1160, 1320, 210} /* NN,GC,T */
00362 }
00363 , { { 1320, 1320, 1290, 1320, 1090} /* NN,GT,E */
00364 , { 1090, 1000, 1090, 890, 1090} /* NN,GT,A */
00365 , { 1320, 1320, 1290, 1320, 370} /* NN,GT,C */
00366 , { 1130, 1130, 1090, 340, 1090} /* NN,GT,G */
00367 , { 1320, 1320, 1160, 1320, 210} /* NN,GT,T */
00368 }
00369 , { { 1320, 1320, 960, 1320, 960} /* NN,TG,E */
00370 , { 1000, 1000, 960, 690, 960} /* NN,TG,A */
00371 , { 1320, 1320, 750, 1320, 300} /* NN,TG,C */
00372 , { 1130, 1130, 960, 10, 960} /* NN,TG,G */
00373 , { 1320, 1320, 190, 1320, 210} /* NN,TG,T */
00374 }
00375 , { { 1470, 1290, 1470, 1090, 1160} /* NN,AT,E */
00376 , { 1290, 1290, 1040, 710, 1040} /* NN,AT,A */
00377 , { 1470, 1090, 1470, 1090, 1160} /* NN,AT,C */
00378 , { 1070, 1070, 1040, 410, 1040} /* NN,AT,G */
00379 , { 1090, 1090, 430, 1090, 570} /* NN,AT,T */
00380 }
00381 , { { 1740, 1430, 1740, 1430, 1430} /* NN,TA,E */
00382 , { 1430, 1290, 1430, 1190, 1430} /* NN,TA,A */
00383 , { 1740, 1430, 1740, 1430, 250} /* NN,TA,C */
00384 , { 1430, 1190, 1430, 840, 1430} /* NN,TA,G */
00385 , { 1430, 1430, 370, 1430, 620} /* NN,TA,T */
00386 }
00387 , { { 1740, 1430, 1740, 1430, 1430} /* NN,NN,E */
00388 , { 1430, 1290, 1430, 1190, 1430} /* NN,NN,A */
00389 , { 1740, 1430, 1740, 1430, 1160} /* NN,NN,C */
00390 , { 1430, 1190, 1430, 840, 1430} /* NN,NN,G */
00391 , { 1430, 1430, 1160, 1430, 620} /* NN,NN,T */
00392 }
00393 } };
00394

```

11.93 intl11dH_RD.h

```

00001 PUBLIC int intl1_dH_RD[NBPAIRS+1][NBPAIRS+1][5][5] =
00002 { { { { INF, INF, INF, INF, INF} /* NP,NP,E */
00003 , { INF, INF, INF, INF, INF} /* NP,NP,A */
00004 , { INF, INF, INF, INF, INF} /* NP,NP,C */
00005 , { INF, INF, INF, INF, INF} /* NP,NP,G */
00006 , { INF, INF, INF, INF, INF} /* NP,NP,U/T */
00007 }
00008 , { { INF, INF, INF, INF, INF} /* NP,CG,E */
00009 , { INF, INF, INF, INF, INF} /* NP,CG,A */
00010 , { INF, INF, INF, INF, INF} /* NP,CG,C */
00011 , { INF, INF, INF, INF, INF} /* NP,CG,G */
00012 , { INF, INF, INF, INF, INF} /* NP,CG,U/T */
00013 }
00014 , { { INF, INF, INF, INF, INF} /* NP,GC,E */
00015 , { INF, INF, INF, INF, INF} /* NP,GC,A */

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```

00016 ,{ INF, INF, INF, INF, INF } /* NP,GC,C */
00017 ,{ INF, INF, INF, INF, INF } /* NP,GC,G */
00018 ,{ INF, INF, INF, INF, INF } /* NP,GC,U/T */
00019 }
00020 ,{{ INF, INF, INF, INF, INF } /* NP,GT,E */
00021 ,{ INF, INF, INF, INF, INF } /* NP,GT,A */
00022 ,{ INF, INF, INF, INF, INF } /* NP,GT,C */
00023 ,{ INF, INF, INF, INF, INF } /* NP,GT,G */
00024 ,{ INF, INF, INF, INF, INF } /* NP,GT,U/T */
00025 }
00026 ,{{ INF, INF, INF, INF, INF } /* NP,UG,E */
00027 ,{ INF, INF, INF, INF, INF } /* NP,UG,A */
00028 ,{ INF, INF, INF, INF, INF } /* NP,UG,C */
00029 ,{ INF, INF, INF, INF, INF } /* NP,UG,G */
00030 ,{ INF, INF, INF, INF, INF } /* NP,UG,U/T */
00031 }
00032 ,{{ INF, INF, INF, INF, INF } /* NP,AT,E */
00033 ,{ INF, INF, INF, INF, INF } /* NP,AT,A */
00034 ,{ INF, INF, INF, INF, INF } /* NP,AT,C */
00035 ,{ INF, INF, INF, INF, INF } /* NP,AT,G */
00036 ,{ INF, INF, INF, INF, INF } /* NP,AT,U/T */
00037 }
00038 ,{{ INF, INF, INF, INF, INF } /* NP,UA,E */
00039 ,{ INF, INF, INF, INF, INF } /* NP,UA,A */
00040 ,{ INF, INF, INF, INF, INF } /* NP,UA,C */
00041 ,{ INF, INF, INF, INF, INF } /* NP,UA,G */
00042 ,{ INF, INF, INF, INF, INF } /* NP,UA,U/T */
00043 }
00044 ,{{ INF, INF, INF, INF, INF } /* NP,NN,E */
00045 ,{ INF, INF, INF, INF, INF } /* NP,NN,A */
00046 ,{ INF, INF, INF, INF, INF } /* NP,NN,C */
00047 ,{ INF, INF, INF, INF, INF } /* NP,NN,G */
00048 ,{ INF, INF, INF, INF, INF } /* NP,NN,U/T */
00049 }
00050 }
00051 ,{{{ INF, INF, INF, INF, INF } /* CG,NP,E */
00052 ,{ INF, INF, INF, INF, INF } /* CG,NP,A */
00053 ,{ INF, INF, INF, INF, INF } /* CG,NP,C */
00054 ,{ INF, INF, INF, INF, INF } /* CG,NP,G */
00055 ,{ INF, INF, INF, INF, INF } /* CG,NP,U/T */
00056 }
00057 ,{{ -220, -220, -270, -220, -270 } /* CG,CG,E */
00058 ,{ -220, -325, -270, -220, -270 } /* CG,CG,A */
00059 ,{ -270, -270, -320, -270, -445 } /* CG,CG,C */
00060 ,{ -220, -220, -270, -915, -270 } /* CG,CG,G */
00061 ,{ -270, -270, -445, -270, -660 } /* CG,CG,U/T */
00062 }
00063 ,{{ -60, -60, -150, -60, -295 } /* CG,GC,E */
00064 ,{ -295, -555, -295, -460, -295 } /* CG,GC,A */
00065 ,{ -60, -60, -150, -60, -430 } /* CG,GC,C */
00066 ,{ -295, -330, -295, -965, -295 } /* CG,GC,G */
00067 ,{ -60, -60, -500, -60, -590 } /* CG,GC,U/T */
00068 }
00069 ,{{ 190, 190, 100, 190, -45 } /* CG,GT,E */
00070 ,{ -45, -305, -45, -210, -45 } /* CG,GT,A */
00071 ,{ 190, 190, 100, 190, -180 } /* CG,GT,C */
00072 ,{ -45, -80, -45, -715, -45 } /* CG,GT,G */
00073 ,{ 190, 190, -250, 190, -340 } /* CG,GT,U/T */
00074 }
00075 ,{{ 30, 30, -20, 30, -20 } /* CG,UG,E */
00076 ,{ 30, -75, -20, 30, -20 } /* CG,UG,A */
00077 ,{ -20, -20, -70, -20, -195 } /* CG,UG,C */
00078 ,{ 30, 30, -20, -665, -20 } /* CG,UG,G */
00079 ,{ -20, -20, -195, -20, -410 } /* CG,UG,U/T */
00080 }
00081 ,{{ -10, -25, -10, -80, -10 } /* CG,AT,E */
00082 ,{ -10, -25, -10, -385, -10 } /* CG,AT,A */
00083 ,{ -80, -80, -145, -80, -890 } /* CG,AT,C */
00084 ,{ -10, -590, -10, -1165, -10 } /* CG,AT,G */
00085 ,{ -80, -80, -520, -80, -820 } /* CG,AT,U/T */
00086 }
00087 ,{{ 385, 225, 385, 290, 385 } /* CG,UA,E */
00088 ,{ 385, 225, 385, 290, 385 } /* CG,UA,A */
00089 ,{ 205, 205, 20, 205, -270 } /* CG,UA,C */
00090 ,{ 385, 70, 385, -725, 385 } /* CG,UA,G */
00091 ,{ 205, 205, -125, 205, -240 } /* CG,UA,U/T */
00092 }
00093 ,{{ 385, 225, 385, 290, 385 } /* CG,NN,E */
00094 ,{ 385, 225, 385, 290, 385 } /* CG,NN,A */
00095 ,{ 205, 205, 100, 205, -180 } /* CG,NN,C */
00096 ,{ 385, 70, 385, -665, 385 } /* CG,NN,G */
00097 ,{ 205, 205, -125, 205, -170 } /* CG,NN,U/T */
00098 }
00099 }
00100 ,{{{ INF, INF, INF, INF, INF } /* GC,NP,E */
00101 ,{ INF, INF, INF, INF, INF } /* GC,NP,A */
00102 ,{ INF, INF, INF, INF, INF } /* GC,NP,C */

```

```
00103 ,{ INF, INF, INF, INF, INF} /* GC,NP,G */
00104 ,{ INF, INF, INF, INF, INF} /* GC,NP,U/T */
00105 }
00106 ,{{ -60, -295, -60, -295, -60} /* GC,CG,E */
00107 ,{ -60, -555, -60, -330, -60} /* GC,CG,A */
00108 ,{ -150, -295, -150, -295, -500} /* GC,CG,C */
00109 ,{ -60, -460, -60, -965, -60} /* GC,CG,G */
00110 ,{ -295, -295, -430, -295, -590} /* GC,CG,U/T */
00111 }
00112 ,{{ -225, -330, -225, -330, -330} /* GC,GC,E */
00113 ,{ -330, -395, -330, -405, -330} /* GC,GC,A */
00114 ,{ -225, -330, -225, -330, -555} /* GC,GC,C */
00115 ,{ -330, -405, -330, -1060, -330} /* GC,GC,G */
00116 ,{ -330, -330, -555, -330, -850} /* GC,GC,U/T */
00117 }
00118 ,{{ 25, -80, 25, -80, -80} /* GC,GT,E */
00119 ,{ -80, -145, -80, -155, -80} /* GC,GT,A */
00120 ,{ 25, -80, 25, -80, -305} /* GC,GT,C */
00121 ,{ -80, -155, -80, -810, -80} /* GC,GT,G */
00122 ,{ -80, -80, -305, -80, -600} /* GC,GT,U/T */
00123 }
00124 ,{{ 190, -45, 190, -45, 190} /* GC,UG,E */
00125 ,{ 190, -305, 190, -80, 190} /* GC,UG,A */
00126 ,{ 100, -45, 100, -45, -250} /* GC,UG,C */
00127 ,{ 190, -210, 190, -715, 190} /* GC,UG,G */
00128 ,{ -45, -45, -180, -45, -340} /* GC,UG,U/T */
00129 }
00130 ,{{ 365, 270, 365, 270, 305} /* GC,AT,E */
00131 ,{ 225, 225, -70, -50, -70} /* GC,AT,A */
00132 ,{ 365, 270, 365, 270, 305} /* GC,AT,C */
00133 ,{ 170, 170, -70, -920, -70} /* GC,AT,G */
00134 ,{ 270, 270, -210, 270, -590} /* GC,AT,U/T */
00135 }
00136 ,{{ 385, 70, 385, 290, 385} /* GC,UA,E */
00137 ,{ 385, -345, 385, 290, 385} /* GC,UA,A */
00138 ,{ 370, -65, 370, -65, -295} /* GC,UA,C */
00139 ,{ 385, 70, 385, -500, 385} /* GC,UA,G */
00140 ,{ -65, -65, -90, -65, -945} /* GC,UA,U/T */
00141 }
00142 ,{{ 385, 270, 385, 290, 385} /* GC,NN,E */
00143 ,{ 385, 225, 385, 290, 385} /* GC,NN,A */
00144 ,{ 370, 270, 370, 270, 305} /* GC,NN,C */
00145 ,{ 385, 170, 385, -500, 385} /* GC,NN,G */
00146 ,{ 270, 270, -90, 270, -340} /* GC,NN,U/T */
00147 }
00148 }
00149 ,{{{ INF, INF, INF, INF, INF} /* GT,NP,E */
00150 ,{ INF, INF, INF, INF, INF} /* GT,NP,A */
00151 ,{ INF, INF, INF, INF, INF} /* GT,NP,C */
00152 ,{ INF, INF, INF, INF, INF} /* GT,NP,G */
00153 ,{ INF, INF, INF, INF, INF} /* GT,NP,U/T */
00154 }
00155 ,{{ 190, -45, 190, -45, 190} /* GT,CG,E */
00156 ,{ 190, -305, 190, -80, 190} /* GT,CG,A */
00157 ,{ 100, -45, 100, -45, -250} /* GT,CG,C */
00158 ,{ 190, -210, 190, -715, 190} /* GT,CG,G */
00159 ,{ -45, -45, -180, -45, -340} /* GT,CG,U/T */
00160 }
00161 ,{{ 25, -80, 25, -80, -80} /* GT,GC,E */
00162 ,{ -80, -145, -80, -155, -80} /* GT,GC,A */
00163 ,{ 25, -80, 25, -80, -305} /* GT,GC,C */
00164 ,{ -80, -155, -80, -810, -80} /* GT,GC,G */
00165 ,{ -80, -80, -305, -80, -600} /* GT,GC,U/T */
00166 }
00167 ,{{ 275, 170, 275, 170, 170} /* GT,GT,E */
00168 ,{ 170, 105, 170, 95, 170} /* GT,GT,A */
00169 ,{ 275, 170, 275, 170, -55} /* GT,GT,C */
00170 ,{ 170, 95, 170, -555, 170} /* GT,GT,G */
00171 ,{ 170, 170, -55, 170, -350} /* GT,GT,U/T */
00172 }
00173 ,{{ 440, 205, 440, 205, 440} /* GT,UG,E */
00174 ,{ 440, -55, 440, 170, 440} /* GT,UG,A */
00175 ,{ 350, 205, 350, 205, 0} /* GT,UG,C */
00176 ,{ 440, 40, 440, -460, 440} /* GT,UG,G */
00177 ,{ 205, 205, 70, 205, -90} /* GT,UG,U/T */
00178 }
00179 ,{{ 615, 520, 615, 520, 555} /* GT,AT,E */
00180 ,{ 475, 475, 180, 200, 180} /* GT,AT,A */
00181 ,{ 615, 520, 615, 520, 555} /* GT,AT,C */
00182 ,{ 420, 420, 180, -665, 180} /* GT,AT,G */
00183 ,{ 520, 520, 40, 520, -340} /* GT,AT,U/T */
00184 }
00185 ,{{ 635, 320, 635, 540, 635} /* GT,UA,E */
00186 ,{ 635, -95, 635, 540, 635} /* GT,UA,A */
00187 ,{ 620, 185, 620, 185, -45} /* GT,UA,C */
00188 ,{ 635, 320, 635, -245, 635} /* GT,UA,G */
00189 ,{ 185, 185, 160, 185, -695} /* GT,UA,U/T */
```

```

00190 }
00191 ,{{ 635, 520, 635, 540, 635} /* GT,NN,E */
00192 ,{ 635, 475, 635, 540, 635} /* GT,NN,A */
00193 ,{ 620, 520, 620, 520, 555} /* GT,NN,C */
00194 ,{ 635, 420, 635, -245, 635} /* GT,NN,G */
00195 ,{ 520, 520, 160, 520, -90} /* GT,NN,U/T */
00196 }
00197 }
00198 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E */
00199 ,{ INF, INF, INF, INF, INF} /* UG,NP,A */
00200 ,{ INF, INF, INF, INF, INF} /* UG,NP,C */
00201 ,{ INF, INF, INF, INF, INF} /* UG,NP,G */
00202 ,{ INF, INF, INF, INF, INF} /* UG,NP,U/T */
00203 }
00204 ,{{ 30, 30, -20, 30, -20} /* UG,CG,E */
00205 ,{ 30, -75, -20, 30, -20} /* UG,CG,A */
00206 ,{ -20, -20, -70, -20, -195} /* UG,CG,C */
00207 ,{ 30, 30, -20, -665, -20} /* UG,CG,G */
00208 ,{ -20, -20, -195, -20, -410} /* UG,CG,U/T */
00209 }
00210 ,{{ 190, 190, 100, 190, -45} /* UG,GC,E */
00211 ,{ -45, -305, -45, -210, -45} /* UG,GC,A */
00212 ,{ 190, 190, 100, 190, -180} /* UG,GC,C */
00213 ,{ -45, -80, -45, -715, -45} /* UG,GC,G */
00214 ,{ 190, 190, -250, 190, -340} /* UG,GC,U/T */
00215 }
00216 ,{{ 440, 440, 350, 440, 205} /* UG,GT,E */
00217 ,{ 205, -55, 205, 40, 205} /* UG,GT,A */
00218 ,{ 440, 440, 350, 440, 70} /* UG,GT,C */
00219 ,{ 205, 170, 205, -460, 205} /* UG,GT,G */
00220 ,{ 440, 440, 0, 440, -90} /* UG,GT,U/T */
00221 }
00222 ,{{ 280, 280, 230, 280, 230} /* UG,UG,E */
00223 ,{ 280, 175, 230, 280, 230} /* UG,UG,A */
00224 ,{ 230, 230, 180, 230, 55} /* UG,UG,C */
00225 ,{ 280, 280, 230, -410, 230} /* UG,UG,G */
00226 ,{ 230, 230, 55, 230, -160} /* UG,UG,U/T */
00227 }
00228 ,{{ 240, 225, 240, 170, 240} /* UG,AT,E */
00229 ,{ 240, 225, 240, -135, 240} /* UG,AT,A */
00230 ,{ 170, 170, 105, 170, -640} /* UG,AT,C */
00231 ,{ 240, -340, 240, -910, 240} /* UG,AT,G */
00232 ,{ 170, 170, -270, 170, -570} /* UG,AT,U/T */
00233 }
00234 ,{{ 635, 475, 635, 540, 635} /* UG,UA,E */
00235 ,{ 635, 475, 635, 540, 635} /* UG,UA,A */
00236 ,{ 455, 455, 270, 455, -20} /* UG,UA,C */
00237 ,{ 635, 320, 635, -470, 635} /* UG,UA,G */
00238 ,{ 455, 455, 125, 455, 10} /* UG,UA,U/T */
00239 }
00240 ,{{ 635, 475, 635, 540, 635} /* UG,NN,E */
00241 ,{ 635, 475, 635, 540, 635} /* UG,NN,A */
00242 ,{ 455, 455, 350, 455, 70} /* UG,NN,C */
00243 ,{ 635, 320, 635, -410, 635} /* UG,NN,G */
00244 ,{ 455, 455, 125, 455, 80} /* UG,NN,U/T */
00245 }
00246 }
00247 ,{{{ INF, INF, INF, INF, INF} /* AT,NP,E */
00248 ,{ INF, INF, INF, INF, INF} /* AT,NP,A */
00249 ,{ INF, INF, INF, INF, INF} /* AT,NP,C */
00250 ,{ INF, INF, INF, INF, INF} /* AT,NP,G */
00251 ,{ INF, INF, INF, INF, INF} /* AT,NP,U/T */
00252 }
00253 ,{{ -10, -10, -80, -10, -80} /* AT,CG,E */
00254 ,{ -25, -25, -80, -590, -80} /* AT,CG,A */
00255 ,{ -10, -10, -145, -10, -520} /* AT,CG,C */
00256 ,{ -80, -385, -80, -1165, -80} /* AT,CG,G */
00257 ,{ -10, -10, -890, -10, -820} /* AT,CG,U/T */
00258 }
00259 ,{{ 365, 225, 365, 170, 270} /* AT,GC,E */
00260 ,{ 270, 225, 270, 170, 270} /* AT,GC,A */
00261 ,{ 365, -70, 365, -70, -210} /* AT,GC,C */
00262 ,{ 270, -50, 270, -920, 270} /* AT,GC,G */
00263 ,{ 305, -70, 305, -70, -590} /* AT,GC,U/T */
00264 }
00265 ,{{ 615, 475, 615, 420, 520} /* AT,GT,E */
00266 ,{ 520, 475, 520, 420, 520} /* AT,GT,A */
00267 ,{ 615, 180, 615, 180, 40} /* AT,GT,C */
00268 ,{ 520, 200, 520, -665, 520} /* AT,GT,G */
00269 ,{ 555, 180, 555, 180, -340} /* AT,GT,U/T */
00270 }
00271 ,{{ 240, 240, 170, 240, 170} /* AT,UG,E */
00272 ,{ 225, 225, 170, -340, 170} /* AT,UG,A */
00273 ,{ 240, 240, 105, 240, -270} /* AT,UG,C */
00274 ,{ 170, -135, 170, -910, 170} /* AT,UG,G */
00275 ,{ 240, 240, -640, 240, -570} /* AT,UG,U/T */
00276 }

```

```
00277 ,{{ 465, 465, 465, 465, 465} /* AT,AT,E */
00278 ,{ 465, 220, 465, 330, 465} /* AT,AT,A */
00279 ,{ 465, 465, 465, 350, 190} /* AT,AT,C */
00280 ,{ 465, 330, 465, -210, 465} /* AT,AT,G */
00281 ,{ 465, 465, 190, 465, -80} /* AT,AT,U/T */
00282 }
00283 ,{{ 710, 620, 710, 510, 50} /* AT,UA,E */
00284 ,{ 620, 620, 50, 510, 50} /* AT,UA,A */
00285 ,{ 710, 495, 710, 495, -105} /* AT,UA,C */
00286 ,{ 65, 65, 50, -335, 50} /* AT,UA,G */
00287 ,{ 495, 495, 150, 495, -435} /* AT,UA,U/T */
00288 }
00289 ,{{ 710, 620, 710, 510, 520} /* AT,NN,E */
00290 ,{ 620, 620, 520, 510, 520} /* AT,NN,A */
00291 ,{ 710, 495, 710, 495, 190} /* AT,NN,C */
00292 ,{ 520, 330, 520, -210, 520} /* AT,NN,G */
00293 ,{ 555, 495, 555, 495, 90} /* AT,NN,U/T */
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00295 }
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00300 ,{ INF, INF, INF, INF, INF} /* UA,NP,U/T */
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00306 ,{ 385, 385, -270, 385, -240} /* UA,CG,U/T */
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00308 ,{{ 385, 385, 370, 385, -65} /* UA,GC,E */
00309 ,{ 70, -345, -65, 70, -65} /* UA,GC,A */
00310 ,{ 385, 385, 370, 385, -90} /* UA,GC,C */
00311 ,{ 290, 290, -65, -500, -65} /* UA,GC,G */
00312 ,{ 385, 385, -295, 385, -945} /* UA,GC,U/T */
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00315 ,{ 320, -95, 185, 320, 185} /* UA,GT,A */
00316 ,{ 635, 635, 620, 635, 160} /* UA,GT,C */
00317 ,{ 540, 540, 185, -245, 185} /* UA,GT,G */
00318 ,{ 635, 635, -45, 635, -695} /* UA,GT,U/T */
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00322 ,{ 635, 635, 270, 635, 125} /* UA,UG,C */
00323 ,{ 540, 540, 455, -470, 455} /* UA,UG,G */
00324 ,{ 635, 635, -20, 635, 10} /* UA,UG,U/T */
00325 }
00326 ,{{ 710, 620, 710, 65, 495} /* UA,AT,E */
00327 ,{ 620, 620, 495, 65, 495} /* UA,AT,A */
00328 ,{ 710, 50, 710, 50, 150} /* UA,AT,C */
00329 ,{ 510, 510, 495, -335, 495} /* UA,AT,G */
00330 ,{ 50, 50, -105, 50, -435} /* UA,AT,U/T */
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00332 ,{{ 845, 690, 845, 690, 690} /* UA,UA,E */
00333 ,{ 690, 580, 690, 570, 690} /* UA,UA,A */
00334 ,{ 845, 690, 845, 690, 100} /* UA,UA,C */
00335 ,{ 690, 570, 690, 5, 690} /* UA,UA,G */
00336 ,{ 690, 690, 100, 690, 285} /* UA,UA,U/T */
00337 }
00338 ,{{ 845, 690, 845, 690, 690} /* UA,NN,E */
00339 ,{ 690, 620, 690, 570, 690} /* UA,NN,A */
00340 ,{ 845, 690, 845, 690, 160} /* UA,NN,C */
00341 ,{ 690, 570, 690, 5, 690} /* UA,NN,G */
00342 ,{ 690, 690, 100, 690, 285} /* UA,NN,U/T */
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00347 ,{ INF, INF, INF, INF, INF} /* NN,NP,C */
00348 ,{ INF, INF, INF, INF, INF} /* NN,NP,G */
00349 ,{ INF, INF, INF, INF, INF} /* NN,NP,U/T */
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00351 ,{{ 385, 385, 205, 385, 205} /* NN,CG,E */
00352 ,{ 225, 225, 205, 70, 205} /* NN,CG,A */
00353 ,{ 385, 385, 100, 385, -125} /* NN,CG,C */
00354 ,{ 290, 290, 205, -665, 205} /* NN,CG,G */
00355 ,{ 385, 385, -180, 385, -170} /* NN,CG,U/T */
00356 }
00357 ,{{ 385, 385, 370, 385, 270} /* NN,GC,E */
00358 ,{ 270, 225, 270, 170, 270} /* NN,GC,A */
00359 ,{ 385, 385, 370, 385, -90} /* NN,GC,C */
00360 ,{ 290, 290, 270, -500, 270} /* NN,GC,G */
00361 ,{ 385, 385, 305, 385, -340} /* NN,GC,U/T */
00362 }
00363 ,{{ 635, 635, 620, 635, 520} /* NN,GT,E */
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00364 , { 520, 475, 520, 420, 520} /* NN,GT,A */
00365 , { 635, 635, 620, 635, 160} /* NN,GT,C */
00366 , { 540, 540, 520, -245, 520} /* NN,GT,G */
00367 , { 635, 635, 555, 635, -90} /* NN,GT,U/T */
00368 }
00369 , { { 635, 635, 455, 635, 455} /* NN,UG,E */
00370 , { 475, 475, 455, 320, 455} /* NN,UG,A */
00371 , { 635, 635, 350, 635, 125} /* NN,UG,C */
00372 , { 540, 540, 455, -410, 455} /* NN,UG,G */
00373 , { 635, 635, 70, 635, 80} /* NN,UG,U/T */
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00375 , { { 710, 620, 710, 520, 555} /* NN,AT,E */
00376 , { 620, 620, 495, 330, 495} /* NN,AT,A */
00377 , { 710, 520, 710, 520, 555} /* NN,AT,C */
00378 , { 510, 510, 495, -210, 495} /* NN,AT,G */
00379 , { 520, 520, 190, 520, 90} /* NN,AT,U/T */
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00381 , { { 845, 690, 845, 690, 690} /* NN,UA,E */
00382 , { 690, 620, 690, 570, 690} /* NN,UA,A */
00383 , { 845, 690, 845, 690, 100} /* NN,UA,C */
00384 , { 690, 570, 690, 5, 690} /* NN,UA,G */
00385 , { 690, 690, 160, 690, 285} /* NN,UA,U/T */
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00387 , { { 845, 690, 845, 690, 690} /* NN,NN,E */
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00389 , { 845, 690, 845, 690, 555} /* NN,NN,C */
00390 , { 690, 570, 690, 5, 690} /* NN,NN,G */
00391 , { 690, 690, 555, 690, 285} /* NN,NN,U/T */
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11.94 intl21.h

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00007 }
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00011 , { INF, INF, INF, INF, INF} /* NP,NP,A,G */
00012 , { INF, INF, INF, INF, INF} /* NP,NP,A,U */
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00024 , { INF, INF, INF, INF, INF} /* NP,NP,G,U */
00025 }
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00028 , { INF, INF, INF, INF, INF} /* NP,NP,U,C */
00029 , { INF, INF, INF, INF, INF} /* NP,NP,U,G */
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00228 , { INF, INF, INF, INF, INF } /* NP,NN,A,G */
00229 , { INF, INF, INF, INF, INF } /* NP,NN,A,U */
00230 }
00231 , { { INF, INF, INF, INF, INF } /* NP,NN,C,E */
00232 , { INF, INF, INF, INF, INF } /* NP,NN,C,A */
00233 , { INF, INF, INF, INF, INF } /* NP,NN,C,C */
00234 , { INF, INF, INF, INF, INF } /* NP,NN,C,G */
00235 , { INF, INF, INF, INF, INF } /* NP,NN,C,U */
00236 }
00237 , { { INF, INF, INF, INF, INF } /* NP,NN,G,E */
00238 , { INF, INF, INF, INF, INF } /* NP,NN,G,A */
00239 , { INF, INF, INF, INF, INF } /* NP,NN,G,C */
00240 , { INF, INF, INF, INF, INF } /* NP,NN,G,G */
00241 , { INF, INF, INF, INF, INF } /* NP,NN,G,U */
00242 }
00243 , { { INF, INF, INF, INF, INF } /* NP,NN,U,E */
00244 , { INF, INF, INF, INF, INF } /* NP,NN,U,A */
00245 , { INF, INF, INF, INF, INF } /* NP,NN,U,C */
00246 , { INF, INF, INF, INF, INF } /* NP,NN,U,G */
00247 , { INF, INF, INF, INF, INF } /* NP,NN,U,U */
00248 }
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00250 }
00251 , { { { INF, INF, INF, INF, INF } /* CG,NP,E,E */
00252 , { INF, INF, INF, INF, INF } /* CG,NP,E,A */
00253 , { INF, INF, INF, INF, INF } /* CG,NP,E,C */
00254 , { INF, INF, INF, INF, INF } /* CG,NP,E,G */
00255 , { INF, INF, INF, INF, INF } /* CG,NP,E,U */
00256 }
00257 , { { INF, INF, INF, INF, INF } /* CG,NP,A,E */
00258 , { INF, INF, INF, INF, INF } /* CG,NP,A,A */
00259 , { INF, INF, INF, INF, INF } /* CG,NP,A,C */
00260 , { INF, INF, INF, INF, INF } /* CG,NP,A,G */
00261 , { INF, INF, INF, INF, INF } /* CG,NP,A,U */
00262 }
00263 , { { INF, INF, INF, INF, INF } /* CG,NP,C,E */
00264 , { INF, INF, INF, INF, INF } /* CG,NP,C,A */
00265 , { INF, INF, INF, INF, INF } /* CG,NP,C,C */
00266 , { INF, INF, INF, INF, INF } /* CG,NP,C,G */
00267 , { INF, INF, INF, INF, INF } /* CG,NP,C,U */
00268 }
00269 , { { INF, INF, INF, INF, INF } /* CG,NP,G,E */
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00271 , { INF, INF, INF, INF, INF } /* CG,NP,G,C */
00272 , { INF, INF, INF, INF, INF } /* CG,NP,G,G */
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00277 , { INF, INF, INF, INF, INF } /* CG,NP,U,C */
00278 , { INF, INF, INF, INF, INF } /* CG,NP,U,G */
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00297 , { 230, 230, 230, 230, 230 } /* CG,CG,C,G */
00298 , { 230, 230, 230, 230, 230 } /* CG,CG,C,U */
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00311 }
00312 }

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00352 ,{ 300, 300, 300, 190, 300} /* CG,GU,A,C */
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00370 ,{ 300, 300, 300, 300, 220} /* CG,GU,U,C */
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00377 ,{ 300, 300, 300, 300, 300} /* CG,UG,E,C */
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00383 ,{ 300, 300, 300, 190, 300} /* CG,UG,A,C */
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00458 , { 190, 190, 190, 190, 190} /* CG,UA,G,G */
00459 , { 300, 190, 300, 190, 300} /* CG,UA,G,U */
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00499 }
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00682 ,{ 300, 300, 300, 300, 220} /* GC,AU,U,G */
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00716 }
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00719 ,{ 300, 300, 300, 300, 300} /* GC,NN,E,C */
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00725 ,{ 300, 300, 300, 300, 300} /* GC,NN,A,C */
00726 ,{ 190, 190, 190, 190, 190} /* GC,NN,A,G */
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00737 ,{ 300, 190, 300, 190, 300} /* GC,NN,G,C */
00738 ,{ 190, 190, 190, 190, 190} /* GC,NN,G,G */
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00743 ,{ 300, 300, 300, 300, 220} /* GC,NN,U,C */
00744 ,{ 300, 300, 300, 300, 220} /* GC,NN,U,G */
00745 ,{ 220, 220, 220, 220, 220} /* GC,NN,U,U */
00746 }
00747 }

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00748 }
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00753 ,{ INF, INF, INF, INF, INF } /* GU,NP,E,U */
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00755 ,{{{ INF, INF, INF, INF, INF } /* GU,NP,A,E */
00756 ,{ INF, INF, INF, INF, INF } /* GU,NP,A,A */
00757 ,{ INF, INF, INF, INF, INF } /* GU,NP,A,C */
00758 ,{ INF, INF, INF, INF, INF } /* GU,NP,A,G */
00759 ,{ INF, INF, INF, INF, INF } /* GU,NP,A,U */
00760 }
00761 ,{{{ INF, INF, INF, INF, INF } /* GU,NP,C,E */
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00763 ,{ INF, INF, INF, INF, INF } /* GU,NP,C,C */
00764 ,{ INF, INF, INF, INF, INF } /* GU,NP,C,G */
00765 ,{ INF, INF, INF, INF, INF } /* GU,NP,C,U */
00766 }
00767 ,{{{ INF, INF, INF, INF, INF } /* GU,NP,G,E */
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00769 ,{ INF, INF, INF, INF, INF } /* GU,NP,G,C */
00770 ,{ INF, INF, INF, INF, INF } /* GU,NP,G,G */
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00774 ,{ INF, INF, INF, INF, INF } /* GU,NP,U,A */
00775 ,{ INF, INF, INF, INF, INF } /* GU,NP,U,C */
00776 ,{ INF, INF, INF, INF, INF } /* GU,NP,U,G */
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00779 }
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00784 ,{ 300, 300, 300, 300, 300 } /* GU,CG,E,U */
00785 }
00786 ,{{{ 300, 300, 300, 300, 300 } /* GU,CG,A,E */
00787 ,{ 300, 250, 300, 210, 300 } /* GU,CG,A,A */
00788 ,{ 300, 300, 300, 300, 300 } /* GU,CG,A,C */
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00817 ,{{{ 300, 300, 300, 300, 300 } /* GU,GC,A,E */
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00834 }

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00921 }

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00968 ,{ 370, 370, 370, 370, 370} /* GU,NN,E,C */
00969 ,{ 370, 370, 370, 370, 370} /* GU,NN,E,G */
00970 ,{ 370, 370, 370, 370, 370} /* GU,NN,E,U */
00971 }
00972 ,{{{ 370, 370, 370, 370, 370} /* GU,NN,A,E */
00973 ,{ 370, 370, 370, 370, 370} /* GU,NN,A,A */
00974 ,{ 370, 370, 370, 370, 370} /* GU,NN,A,C */
00975 ,{ 260, 260, 260, 260, 260} /* GU,NN,A,G */
00976 ,{ 370, 370, 370, 370, 370} /* GU,NN,A,U */
00977 }
00978 ,{{{ 370, 370, 370, 370, 370} /* GU,NN,C,E */
00979 ,{ 370, 370, 370, 370, 370} /* GU,NN,C,A */
00980 ,{ 370, 370, 370, 370, 370} /* GU,NN,C,C */
00981 ,{ 370, 370, 370, 370, 370} /* GU,NN,C,G */
00982 ,{ 370, 370, 370, 370, 370} /* GU,NN,C,U */
00983 }
00984 ,{{{ 370, 260, 370, 260, 370} /* GU,NN,G,E */
00985 ,{ 370, 260, 370, 260, 370} /* GU,NN,G,A */
00986 ,{ 370, 260, 370, 260, 370} /* GU,NN,G,C */
00987 ,{ 260, 260, 260, 260, 260} /* GU,NN,G,G */
00988 ,{ 370, 260, 370, 260, 370} /* GU,NN,G,U */
00989 }
00990 ,{{{ 370, 370, 370, 370, 300} /* GU,NN,U,E */
00991 ,{ 370, 370, 370, 370, 300} /* GU,NN,U,A */
00992 ,{ 370, 370, 370, 370, 300} /* GU,NN,U,C */
00993 ,{ 370, 370, 370, 370, 300} /* GU,NN,U,G */
00994 ,{ 300, 300, 300, 300, 300} /* GU,NN,U,U */
00995 }
00996 }
00997 }
00998 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E,E */
00999 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,A */
01000 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,C */
01001 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,G */
01002 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,U */
01003 }
01004 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,E */
01005 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,A */
01006 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,C */
01007 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,G */
01008 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,U */

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01009      }
01010      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,C,E */
01011      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,C,A */
01012      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,C,C */
01013      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,C,G */
01014      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,C,U */
01015      }
01016      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,E */
01017      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,A */
01018      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,C */
01019      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,G */
01020      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,U */
01021      }
01022      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,E */
01023      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,A */
01024      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,C */
01025      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,G */
01026      ,{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,U */
01027      }
01028      }
01029      ,{{{      300,      300,      300,      300,      300} /* UG,CG,E,E */
01030      ,{{      300,      300,      300,      300,      300} /* UG,CG,E,A */
01031      ,{{      300,      300,      300,      300,      300} /* UG,CG,E,C */
01032      ,{{      300,      300,      300,      300,      300} /* UG,CG,E,G */
01033      ,{{      300,      300,      300,      300,      300} /* UG,CG,E,U */
01034      }
01035      ,{{{      300,      300,      300,      190,      300} /* UG,CG,A,E */
01036      ,{{      300,      300,      300,      190,      300} /* UG,CG,A,A */
01037      ,{{      300,      300,      300,      190,      300} /* UG,CG,A,C */
01038      ,{{      190,      190,      190,      190,      190} /* UG,CG,A,G */
01039      ,{{      300,      300,      300,      190,      300} /* UG,CG,A,U */
01040      }
01041      ,{{{      300,      300,      300,      300,      300} /* UG,CG,C,E */
01042      ,{{      300,      300,      300,      300,      300} /* UG,CG,C,A */
01043      ,{{      300,      300,      300,      300,      300} /* UG,CG,C,C */
01044      ,{{      300,      300,      300,      300,      300} /* UG,CG,C,G */
01045      ,{{      300,      300,      300,      300,      300} /* UG,CG,C,U */
01046      }
01047      ,{{{      300,      190,      300,      190,      300} /* UG,CG,G,E */
01048      ,{{      190,      190,      190,      190,      190} /* UG,CG,G,A */
01049      ,{{      300,      190,      300,      190,      300} /* UG,CG,G,C */
01050      ,{{      190,      190,      190,      190,      190} /* UG,CG,G,G */
01051      ,{{      300,      190,      300,      190,      300} /* UG,CG,G,U */
01052      }
01053      ,{{{      300,      300,      300,      300,      220} /* UG,CG,U,E */
01054      ,{{      300,      300,      300,      300,      220} /* UG,CG,U,A */
01055      ,{{      300,      300,      300,      300,      220} /* UG,CG,U,C */
01056      ,{{      300,      300,      300,      300,      220} /* UG,CG,U,G */
01057      ,{{      220,      220,      220,      220,      220} /* UG,CG,U,U */
01058      }
01059      }
01060      ,{{{      300,      300,      300,      300,      300} /* UG,GC,E,E */
01061      ,{{      300,      300,      300,      300,      300} /* UG,GC,E,A */
01062      ,{{      300,      300,      300,      300,      300} /* UG,GC,E,C */
01063      ,{{      300,      300,      300,      300,      300} /* UG,GC,E,G */
01064      ,{{      300,      300,      300,      300,      300} /* UG,GC,E,U */
01065      }
01066      ,{{{      300,      300,      300,      190,      300} /* UG,GC,A,E */
01067      ,{{      300,      300,      300,      190,      300} /* UG,GC,A,A */
01068      ,{{      300,      300,      300,      190,      300} /* UG,GC,A,C */
01069      ,{{      190,      190,      190,      190,      190} /* UG,GC,A,G */
01070      ,{{      300,      300,      300,      190,      300} /* UG,GC,A,U */
01071      }
01072      ,{{{      300,      300,      300,      300,      300} /* UG,GC,C,E */
01073      ,{{      300,      300,      300,      300,      300} /* UG,GC,C,A */
01074      ,{{      300,      300,      300,      300,      300} /* UG,GC,C,C */
01075      ,{{      300,      300,      300,      300,      300} /* UG,GC,C,G */
01076      ,{{      300,      300,      300,      300,      300} /* UG,GC,C,U */
01077      }
01078      ,{{{      300,      190,      300,      190,      300} /* UG,GC,G,E */
01079      ,{{      300,      190,      300,      190,      300} /* UG,GC,G,A */
01080      ,{{      300,      190,      300,      190,      300} /* UG,GC,G,C */
01081      ,{{      190,      190,      190,      190,      190} /* UG,GC,G,G */
01082      ,{{      300,      190,      300,      190,      300} /* UG,GC,G,U */
01083      }
01084      ,{{{      300,      300,      300,      300,      220} /* UG,GC,U,E */
01085      ,{{      300,      300,      300,      300,      220} /* UG,GC,U,A */
01086      ,{{      300,      300,      300,      300,      220} /* UG,GC,U,C */
01087      ,{{      300,      300,      300,      300,      220} /* UG,GC,U,G */
01088      ,{{      220,      220,      220,      220,      220} /* UG,GC,U,U */
01089      }
01090      }
01091      ,{{{      370,      370,      370,      370,      370} /* UG,GU,E,E */
01092      ,{{      370,      370,      370,      370,      370} /* UG,GU,E,A */
01093      ,{{      370,      370,      370,      370,      370} /* UG,GU,E,C */
01094      ,{{      370,      370,      370,      370,      370} /* UG,GU,E,G */
01095      ,{{      370,      370,      370,      370,      370} /* UG,GU,E,U */

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01096     }
01097     ,{{ 370, 370, 370, 260, 370} /* UG, GU, A, E */
01098     ,{{ 370, 370, 370, 260, 370} /* UG, GU, A, A */
01099     ,{{ 370, 370, 370, 260, 370} /* UG, GU, A, C */
01100     ,{{ 260, 260, 260, 260, 260} /* UG, GU, A, G */
01101     ,{{ 370, 370, 370, 260, 370} /* UG, GU, A, U */
01102     }
01103     ,{{ 370, 370, 370, 370, 370} /* UG, GU, C, E */
01104     ,{{ 370, 370, 370, 370, 370} /* UG, GU, C, A */
01105     ,{{ 370, 370, 370, 370, 370} /* UG, GU, C, C */
01106     ,{{ 370, 370, 370, 370, 370} /* UG, GU, C, G */
01107     ,{{ 370, 370, 370, 370, 370} /* UG, GU, C, U */
01108     }
01109     ,{{ 370, 260, 370, 260, 370} /* UG, GU, G, E */
01110     ,{{ 370, 260, 370, 260, 370} /* UG, GU, G, A */
01111     ,{{ 370, 260, 370, 260, 370} /* UG, GU, G, C */
01112     ,{{ 260, 260, 260, 260, 260} /* UG, GU, G, G */
01113     ,{{ 370, 260, 370, 260, 370} /* UG, GU, G, U */
01114     }
01115     ,{{ 370, 370, 370, 370, 300} /* UG, GU, U, E */
01116     ,{{ 370, 370, 370, 370, 300} /* UG, GU, U, A */
01117     ,{{ 370, 370, 370, 370, 300} /* UG, GU, U, C */
01118     ,{{ 370, 370, 370, 370, 300} /* UG, GU, U, G */
01119     ,{{ 300, 300, 300, 300, 300} /* UG, GU, U, U */
01120     }
01121     }
01122     ,{{{ 370, 370, 370, 370, 370} /* UG, UG, E, E */
01123     ,{{ 370, 370, 370, 370, 370} /* UG, UG, E, A */
01124     ,{{ 370, 370, 370, 370, 370} /* UG, UG, E, C */
01125     ,{{ 370, 370, 370, 370, 370} /* UG, UG, E, G */
01126     ,{{ 370, 370, 370, 370, 370} /* UG, UG, E, U */
01127     }
01128     ,{{{ 370, 370, 370, 260, 370} /* UG, UG, A, E */
01129     ,{{ 370, 370, 370, 260, 370} /* UG, UG, A, A */
01130     ,{{ 370, 370, 370, 260, 370} /* UG, UG, A, C */
01131     ,{{ 260, 260, 260, 260, 260} /* UG, UG, A, G */
01132     ,{{ 370, 370, 370, 260, 370} /* UG, UG, A, U */
01133     }
01134     ,{{{ 370, 370, 370, 370, 370} /* UG, UG, C, E */
01135     ,{{ 370, 370, 370, 370, 370} /* UG, UG, C, A */
01136     ,{{ 370, 370, 370, 370, 370} /* UG, UG, C, C */
01137     ,{{ 370, 370, 370, 370, 370} /* UG, UG, C, G */
01138     ,{{ 370, 370, 370, 370, 370} /* UG, UG, C, U */
01139     }
01140     ,{{{ 370, 260, 370, 260, 370} /* UG, UG, G, E */
01141     ,{{ 260, 260, 260, 260, 260} /* UG, UG, G, A */
01142     ,{{ 370, 260, 370, 260, 370} /* UG, UG, G, C */
01143     ,{{ 260, 260, 260, 260, 260} /* UG, UG, G, G */
01144     ,{{ 370, 260, 370, 260, 370} /* UG, UG, G, U */
01145     }
01146     ,{{{ 370, 370, 370, 370, 300} /* UG, UG, U, E */
01147     ,{{ 370, 370, 370, 370, 300} /* UG, UG, U, A */
01148     ,{{ 370, 370, 370, 370, 300} /* UG, UG, U, C */
01149     ,{{ 370, 370, 370, 370, 300} /* UG, UG, U, G */
01150     ,{{ 300, 300, 300, 300, 300} /* UG, UG, U, U */
01151     }
01152     }
01153     ,{{{ 370, 370, 370, 370, 370} /* UG, AU, E, E */
01154     ,{{ 370, 370, 370, 370, 370} /* UG, AU, E, A */
01155     ,{{ 370, 370, 370, 370, 370} /* UG, AU, E, C */
01156     ,{{ 370, 370, 370, 370, 370} /* UG, AU, E, G */
01157     ,{{ 370, 370, 370, 370, 370} /* UG, AU, E, U */
01158     }
01159     ,{{{ 370, 370, 370, 260, 370} /* UG, AU, A, E */
01160     ,{{ 370, 370, 370, 260, 370} /* UG, AU, A, A */
01161     ,{{ 370, 370, 370, 260, 370} /* UG, AU, A, C */
01162     ,{{ 260, 260, 260, 260, 260} /* UG, AU, A, G */
01163     ,{{ 370, 370, 370, 260, 370} /* UG, AU, A, U */
01164     }
01165     ,{{{ 370, 370, 370, 370, 370} /* UG, AU, C, E */
01166     ,{{ 370, 370, 370, 370, 370} /* UG, AU, C, A */
01167     ,{{ 370, 370, 370, 370, 370} /* UG, AU, C, C */
01168     ,{{ 370, 370, 370, 370, 370} /* UG, AU, C, G */
01169     ,{{ 370, 370, 370, 370, 370} /* UG, AU, C, U */
01170     }
01171     ,{{{ 370, 260, 370, 260, 370} /* UG, AU, G, E */
01172     ,{{ 370, 260, 370, 260, 370} /* UG, AU, G, A */
01173     ,{{ 370, 260, 370, 260, 370} /* UG, AU, G, C */
01174     ,{{ 260, 260, 260, 260, 260} /* UG, AU, G, G */
01175     ,{{ 370, 260, 370, 260, 370} /* UG, AU, G, U */
01176     }
01177     ,{{{ 370, 370, 370, 370, 300} /* UG, AU, U, E */
01178     ,{{ 370, 370, 370, 370, 300} /* UG, AU, U, A */
01179     ,{{ 370, 370, 370, 370, 300} /* UG, AU, U, C */
01180     ,{{ 370, 370, 370, 370, 300} /* UG, AU, U, G */
01181     ,{{ 300, 300, 300, 300, 300} /* UG, AU, U, U */
01182     }

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01183 }
01184 ,{{{ 370, 370, 370, 370, 370} /* UG,UA,E,E */
01185 ,{ 370, 370, 370, 370, 370} /* UG,UA,E,A */
01186 ,{ 370, 370, 370, 370, 370} /* UG,UA,E,C */
01187 ,{ 370, 370, 370, 370, 370} /* UG,UA,E,G */
01188 ,{ 370, 370, 370, 370, 370} /* UG,UA,E,U */
01189 }
01190 ,{{{ 370, 370, 370, 260, 370} /* UG,UA,A,E */
01191 ,{ 370, 370, 370, 260, 370} /* UG,UA,A,A */
01192 ,{ 370, 370, 370, 260, 370} /* UG,UA,A,C */
01193 ,{ 260, 260, 260, 260, 260} /* UG,UA,A,G */
01194 ,{ 370, 370, 370, 260, 370} /* UG,UA,A,U */
01195 }
01196 ,{{{ 370, 370, 370, 370, 370} /* UG,UA,C,E */
01197 ,{ 370, 370, 370, 370, 370} /* UG,UA,C,A */
01198 ,{ 370, 370, 370, 370, 370} /* UG,UA,C,C */
01199 ,{ 370, 370, 370, 370, 370} /* UG,UA,C,G */
01200 ,{ 370, 370, 370, 370, 370} /* UG,UA,C,U */
01201 }
01202 ,{{{ 370, 260, 370, 260, 370} /* UG,UA,G,E */
01203 ,{ 260, 260, 260, 260, 260} /* UG,UA,G,A */
01204 ,{ 370, 260, 370, 260, 370} /* UG,UA,G,C */
01205 ,{ 260, 260, 260, 260, 260} /* UG,UA,G,G */
01206 ,{ 370, 260, 370, 260, 370} /* UG,UA,G,U */
01207 }
01208 ,{{{ 370, 370, 370, 370, 300} /* UG,UA,U,E */
01209 ,{ 370, 370, 370, 370, 300} /* UG,UA,U,A */
01210 ,{ 370, 370, 370, 370, 300} /* UG,UA,U,C */
01211 ,{ 370, 370, 370, 370, 300} /* UG,UA,U,G */
01212 ,{ 300, 300, 300, 300, 300} /* UG,UA,U,U */
01213 }
01214 }
01215 ,{{{ 370, 370, 370, 370, 370} /* UG,NN,E,E */
01216 ,{ 370, 370, 370, 370, 370} /* UG,NN,E,A */
01217 ,{ 370, 370, 370, 370, 370} /* UG,NN,E,C */
01218 ,{ 370, 370, 370, 370, 370} /* UG,NN,E,G */
01219 ,{ 370, 370, 370, 370, 370} /* UG,NN,E,U */
01220 }
01221 ,{{{ 370, 370, 370, 260, 370} /* UG,NN,A,E */
01222 ,{ 370, 370, 370, 260, 370} /* UG,NN,A,A */
01223 ,{ 370, 370, 370, 260, 370} /* UG,NN,A,C */
01224 ,{ 260, 260, 260, 260, 260} /* UG,NN,A,G */
01225 ,{ 370, 370, 370, 260, 370} /* UG,NN,A,U */
01226 }
01227 ,{{{ 370, 370, 370, 370, 370} /* UG,NN,C,E */
01228 ,{ 370, 370, 370, 370, 370} /* UG,NN,C,A */
01229 ,{ 370, 370, 370, 370, 370} /* UG,NN,C,C */
01230 ,{ 370, 370, 370, 370, 370} /* UG,NN,C,G */
01231 ,{ 370, 370, 370, 370, 370} /* UG,NN,C,U */
01232 }
01233 ,{{{ 370, 260, 370, 260, 370} /* UG,NN,G,E */
01234 ,{ 370, 260, 370, 260, 370} /* UG,NN,G,A */
01235 ,{ 370, 260, 370, 260, 370} /* UG,NN,G,C */
01236 ,{ 260, 260, 260, 260, 260} /* UG,NN,G,G */
01237 ,{ 370, 260, 370, 260, 370} /* UG,NN,G,U */
01238 }
01239 ,{{{ 370, 370, 370, 370, 300} /* UG,NN,U,E */
01240 ,{ 370, 370, 370, 370, 300} /* UG,NN,U,A */
01241 ,{ 370, 370, 370, 370, 300} /* UG,NN,U,C */
01242 ,{ 370, 370, 370, 370, 300} /* UG,NN,U,G */
01243 ,{ 300, 300, 300, 300, 300} /* UG,NN,U,U */
01244 }
01245 }
01246 }
01247 ,{{{ INF, INF, INF, INF, INF} /* AU,NP,E,E */
01248 ,{ INF, INF, INF, INF, INF} /* AU,NP,E,A */
01249 ,{ INF, INF, INF, INF, INF} /* AU,NP,E,C */
01250 ,{ INF, INF, INF, INF, INF} /* AU,NP,E,G */
01251 ,{ INF, INF, INF, INF, INF} /* AU,NP,E,U */
01252 }
01253 ,{{{ INF, INF, INF, INF, INF} /* AU,NP,A,E */
01254 ,{ INF, INF, INF, INF, INF} /* AU,NP,A,A */
01255 ,{ INF, INF, INF, INF, INF} /* AU,NP,A,C */
01256 ,{ INF, INF, INF, INF, INF} /* AU,NP,A,G */
01257 ,{ INF, INF, INF, INF, INF} /* AU,NP,A,U */
01258 }
01259 ,{{{ INF, INF, INF, INF, INF} /* AU,NP,C,E */
01260 ,{ INF, INF, INF, INF, INF} /* AU,NP,C,A */
01261 ,{ INF, INF, INF, INF, INF} /* AU,NP,C,C */
01262 ,{ INF, INF, INF, INF, INF} /* AU,NP,C,G */
01263 ,{ INF, INF, INF, INF, INF} /* AU,NP,C,U */
01264 }
01265 ,{{{ INF, INF, INF, INF, INF} /* AU,NP,G,E */
01266 ,{ INF, INF, INF, INF, INF} /* AU,NP,G,A */
01267 ,{ INF, INF, INF, INF, INF} /* AU,NP,G,C */
01268 ,{ INF, INF, INF, INF, INF} /* AU,NP,G,G */
01269 ,{ INF, INF, INF, INF, INF} /* AU,NP,G,U */

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01270     }
01271     ,{{    INF,    INF,    INF,    INF,    INF} /* AU,NP,U,E */
01272     ,{{    INF,    INF,    INF,    INF,    INF} /* AU,NP,U,A */
01273     ,{{    INF,    INF,    INF,    INF,    INF} /* AU,NP,U,C */
01274     ,{{    INF,    INF,    INF,    INF,    INF} /* AU,NP,U,G */
01275     ,{{    INF,    INF,    INF,    INF,    INF} /* AU,NP,U,U */
01276     }
01277     }
01278     ,{{{    300,    300,    300,    300,    300} /* AU,CG,E,E */
01279     ,{{    300,    300,    300,    300,    300} /* AU,CG,E,A */
01280     ,{{    300,    300,    300,    300,    300} /* AU,CG,E,C */
01281     ,{{    300,    300,    300,    300,    300} /* AU,CG,E,G */
01282     ,{{    300,    300,    300,    300,    300} /* AU,CG,E,U */
01283     }
01284     ,{{{    300,    300,    300,    300,    300} /* AU,CG,A,E */
01285     ,{{    300,    300,    300,    300,    300} /* AU,CG,A,A */
01286     ,{{    300,    300,    300,    300,    300} /* AU,CG,A,C */
01287     ,{{    190,    190,    190,    190,    190} /* AU,CG,A,G */
01288     ,{{    300,    300,    300,    300,    300} /* AU,CG,A,U */
01289     }
01290     ,{{{    300,    300,    300,    300,    300} /* AU,CG,C,E */
01291     ,{{    300,    300,    300,    300,    300} /* AU,CG,C,A */
01292     ,{{    300,    300,    300,    300,    300} /* AU,CG,C,C */
01293     ,{{    300,    300,    300,    300,    300} /* AU,CG,C,G */
01294     ,{{    300,    300,    300,    300,    300} /* AU,CG,C,U */
01295     }
01296     ,{{{    300,    190,    300,    190,    300} /* AU,CG,G,E */
01297     ,{{    190,    190,    190,    190,    190} /* AU,CG,G,A */
01298     ,{{    300,    190,    300,    190,    300} /* AU,CG,G,C */
01299     ,{{    190,    190,    190,    190,    190} /* AU,CG,G,G */
01300     ,{{    300,    190,    300,    190,    300} /* AU,CG,G,U */
01301     }
01302     ,{{{    300,    300,    300,    300,    220} /* AU,CG,U,E */
01303     ,{{    300,    300,    300,    300,    220} /* AU,CG,U,A */
01304     ,{{    300,    300,    300,    300,    220} /* AU,CG,U,C */
01305     ,{{    300,    300,    300,    300,    220} /* AU,CG,U,G */
01306     ,{{    220,    220,    220,    220,    220} /* AU,CG,U,U */
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01308     }
01309     ,{{{    300,    300,    300,    300,    300} /* AU,GC,E,E */
01310     ,{{    300,    300,    300,    300,    300} /* AU,GC,E,A */
01311     ,{{    300,    300,    300,    300,    300} /* AU,GC,E,C */
01312     ,{{    300,    300,    300,    300,    300} /* AU,GC,E,G */
01313     ,{{    300,    300,    300,    300,    300} /* AU,GC,E,U */
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01315     ,{{{    300,    300,    300,    300,    300} /* AU,GC,A,E */
01316     ,{{    300,    300,    300,    300,    300} /* AU,GC,A,A */
01317     ,{{    300,    300,    300,    300,    300} /* AU,GC,A,C */
01318     ,{{    190,    190,    190,    190,    190} /* AU,GC,A,G */
01319     ,{{    300,    300,    300,    300,    300} /* AU,GC,A,U */
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01321     ,{{{    300,    300,    300,    300,    300} /* AU,GC,C,E */
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01324     ,{{    300,    300,    300,    300,    300} /* AU,GC,C,G */
01325     ,{{    300,    300,    300,    300,    300} /* AU,GC,C,U */
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01327     ,{{{    300,    190,    300,    190,    300} /* AU,GC,G,E */
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01329     ,{{    300,    190,    300,    190,    300} /* AU,GC,G,C */
01330     ,{{    190,    190,    190,    190,    190} /* AU,GC,G,G */
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01334     ,{{    300,    300,    300,    300,    220} /* AU,GC,U,A */
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01336     ,{{    300,    300,    300,    300,    220} /* AU,GC,U,G */
01337     ,{{    220,    220,    220,    220,    220} /* AU,GC,U,U */
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01339     }
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01348     ,{{    370,    370,    370,    370,    370} /* AU,GU,A,C */
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01355     ,{{    370,    370,    370,    370,    370} /* AU,GU,C,G */
01356     ,{{    370,    370,    370,    370,    370} /* AU,GU,C,U */

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01366     ,{{ 370, 370, 370, 370, 300} /* AU, GU, U, C */
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01379     ,{{ 370, 370, 370, 370, 370} /* AU, UG, A, C */
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01390     ,{{ 260, 260, 260, 260, 260} /* AU, UG, G, A */
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01397     ,{{ 370, 370, 370, 370, 300} /* AU, UG, U, C */
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01432     }
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01443     ,{{ 370, 370, 370, 370, 370} /* AU, UA, A, U */

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01447     ,{{ 370, 370, 370, 370, 370} /* AU,UA,C,C */
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01459     ,{{ 370, 370, 370, 370, 300} /* AU,UA,U,C */
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01463     }
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01467     ,{{ 370, 370, 370, 370, 370} /* AU,NN,E,G */
01468     ,{{ 370, 370, 370, 370, 370} /* AU,NN,E,U */
01469     }
01470     ,{{{ 370, 370, 370, 370, 370} /* AU,NN,A,E */
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01472     ,{{ 370, 370, 370, 370, 370} /* AU,NN,A,C */
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01474     ,{{ 370, 370, 370, 370, 370} /* AU,NN,A,U */
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01476     ,{{{ 370, 370, 370, 370, 370} /* AU,NN,C,E */
01477     ,{{ 370, 370, 370, 370, 370} /* AU,NN,C,A */
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01479     ,{{ 370, 370, 370, 370, 370} /* AU,NN,C,G */
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01483     ,{{ 370, 260, 370, 260, 370} /* AU,NN,G,A */
01484     ,{{ 370, 260, 370, 260, 370} /* AU,NN,G,C */
01485     ,{{ 260, 260, 260, 260, 260} /* AU,NN,G,G */
01486     ,{{ 370, 260, 370, 260, 370} /* AU,NN,G,U */
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01490     ,{{ 370, 370, 370, 370, 300} /* AU,NN,U,C */
01491     ,{{ 370, 370, 370, 370, 300} /* AU,NN,U,G */
01492     ,{{ 300, 300, 300, 300, 300} /* AU,NN,U,U */
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01494     }
01495     }
01496     ,{{{ INF, INF, INF, INF, INF} /* UA,NP,E,E */
01497     ,{{ INF, INF, INF, INF, INF} /* UA,NP,E,A */
01498     ,{{ INF, INF, INF, INF, INF} /* UA,NP,E,C */
01499     ,{{ INF, INF, INF, INF, INF} /* UA,NP,E,G */
01500     ,{{ INF, INF, INF, INF, INF} /* UA,NP,E,U */
01501     }
01502     ,{{{ INF, INF, INF, INF, INF} /* UA,NP,A,E */
01503     ,{{ INF, INF, INF, INF, INF} /* UA,NP,A,A */
01504     ,{{ INF, INF, INF, INF, INF} /* UA,NP,A,C */
01505     ,{{ INF, INF, INF, INF, INF} /* UA,NP,A,G */
01506     ,{{ INF, INF, INF, INF, INF} /* UA,NP,A,U */
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01508     ,{{{ INF, INF, INF, INF, INF} /* UA,NP,C,E */
01509     ,{{ INF, INF, INF, INF, INF} /* UA,NP,C,A */
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01511     ,{{ INF, INF, INF, INF, INF} /* UA,NP,C,G */
01512     ,{{ INF, INF, INF, INF, INF} /* UA,NP,C,U */
01513     }
01514     ,{{{ INF, INF, INF, INF, INF} /* UA,NP,G,E */
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01525     }
01526     }
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01530     ,{{ 300, 300, 300, 300, 300} /* UA,CG,E,G */

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01617 , { 300, 300, 300, 300, 300} /* UA,GU,U,U */

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01647     , { 370, 370, 370, 370, 300 } /* UA,UG,U,G */
01648     , { 300, 300, 300, 300, 300 } /* UA,UG,U,U */
01649     }
01650     }
01651     ,{{{ { 370, 370, 370, 370, 370 } /* UA,AU,E,E */
01652     , { 370, 370, 370, 370, 370 } /* UA,AU,E,A */
01653     , { 370, 370, 370, 370, 370 } /* UA,AU,E,C */
01654     , { 370, 370, 370, 370, 370 } /* UA,AU,E,G */
01655     , { 370, 370, 370, 370, 370 } /* UA,AU,E,U */
01656     }
01657     ,{{ { 370, 370, 370, 260, 370 } /* UA,AU,A,E */
01658     , { 370, 370, 370, 260, 370 } /* UA,AU,A,A */
01659     , { 370, 370, 370, 260, 370 } /* UA,AU,A,C */
01660     , { 260, 260, 260, 260, 260 } /* UA,AU,A,G */
01661     , { 370, 370, 370, 260, 370 } /* UA,AU,A,U */
01662     }
01663     ,{{ { 370, 370, 370, 370, 370 } /* UA,AU,C,E */
01664     , { 370, 370, 370, 370, 370 } /* UA,AU,C,A */
01665     , { 370, 370, 370, 370, 370 } /* UA,AU,C,C */
01666     , { 370, 370, 370, 370, 370 } /* UA,AU,C,G */
01667     , { 370, 370, 370, 370, 370 } /* UA,AU,C,U */
01668     }
01669     ,{{ { 370, 260, 370, 260, 370 } /* UA,AU,G,E */
01670     , { 370, 260, 370, 260, 370 } /* UA,AU,G,A */
01671     , { 370, 260, 370, 260, 370 } /* UA,AU,G,C */
01672     , { 260, 260, 260, 260, 260 } /* UA,AU,G,G */
01673     , { 370, 260, 370, 260, 370 } /* UA,AU,G,U */
01674     }
01675     ,{{{ { 370, 370, 370, 370, 300 } /* UA,AU,U,E */
01676     , { 370, 370, 370, 370, 300 } /* UA,AU,U,A */
01677     , { 370, 370, 370, 370, 300 } /* UA,AU,U,C */
01678     , { 370, 370, 370, 370, 300 } /* UA,AU,U,G */
01679     , { 300, 300, 300, 300, 300 } /* UA,AU,U,U */
01680     }
01681     }
01682     ,{{{ { 370, 370, 370, 370, 370 } /* UA,UA,E,E */
01683     , { 370, 370, 370, 370, 370 } /* UA,UA,E,A */
01684     , { 370, 370, 370, 370, 370 } /* UA,UA,E,C */
01685     , { 370, 370, 370, 370, 370 } /* UA,UA,E,G */
01686     , { 370, 370, 370, 370, 370 } /* UA,UA,E,U */
01687     }
01688     ,{{ { 370, 370, 370, 260, 370 } /* UA,UA,A,E */
01689     , { 370, 370, 370, 260, 370 } /* UA,UA,A,A */
01690     , { 370, 370, 370, 260, 370 } /* UA,UA,A,C */
01691     , { 260, 260, 260, 260, 260 } /* UA,UA,A,G */
01692     , { 370, 370, 370, 260, 370 } /* UA,UA,A,U */
01693     }
01694     ,{{ { 370, 370, 370, 370, 370 } /* UA,UA,C,E */
01695     , { 370, 370, 370, 370, 370 } /* UA,UA,C,A */
01696     , { 370, 370, 370, 370, 370 } /* UA,UA,C,C */
01697     , { 370, 370, 370, 370, 370 } /* UA,UA,C,G */
01698     , { 370, 370, 370, 370, 370 } /* UA,UA,C,U */
01699     }
01700     ,{{ { 370, 260, 370, 260, 370 } /* UA,UA,G,E */
01701     , { 260, 260, 260, 260, 260 } /* UA,UA,G,A */
01702     , { 370, 260, 370, 260, 370 } /* UA,UA,G,C */
01703     , { 260, 260, 260, 260, 260 } /* UA,UA,G,G */
01704     , { 370, 260, 370, 260, 370 } /* UA,UA,G,U */
```

```

01705     }
01706     ,{{ 370, 370, 370, 370, 300} /* UA,UA,U,E */
01707     ,{{ 370, 370, 370, 370, 300} /* UA,UA,U,A */
01708     ,{{ 370, 370, 370, 370, 300} /* UA,UA,U,C */
01709     ,{{ 370, 370, 370, 370, 300} /* UA,UA,U,G */
01710     ,{{ 300, 300, 300, 300, 300} /* UA,UA,U,U */
01711     }
01712     }
01713     ,{{{ 370, 370, 370, 370, 370} /* UA,NN,E,E */
01714     ,{{ 370, 370, 370, 370, 370} /* UA,NN,E,A */
01715     ,{{ 370, 370, 370, 370, 370} /* UA,NN,E,C */
01716     ,{{ 370, 370, 370, 370, 370} /* UA,NN,E,G */
01717     ,{{ 370, 370, 370, 370, 370} /* UA,NN,E,U */
01718     }
01719     ,{{{ 370, 370, 370, 260, 370} /* UA,NN,A,E */
01720     ,{{ 370, 370, 370, 260, 370} /* UA,NN,A,A */
01721     ,{{ 370, 370, 370, 260, 370} /* UA,NN,A,C */
01722     ,{{ 260, 260, 260, 260, 260} /* UA,NN,A,G */
01723     ,{{ 370, 370, 370, 260, 370} /* UA,NN,A,U */
01724     }
01725     ,{{{ 370, 370, 370, 370, 370} /* UA,NN,C,E */
01726     ,{{ 370, 370, 370, 370, 370} /* UA,NN,C,A */
01727     ,{{ 370, 370, 370, 370, 370} /* UA,NN,C,C */
01728     ,{{ 370, 370, 370, 370, 370} /* UA,NN,C,G */
01729     ,{{ 370, 370, 370, 370, 370} /* UA,NN,C,U */
01730     }
01731     ,{{{ 370, 260, 370, 260, 370} /* UA,NN,G,E */
01732     ,{{ 370, 260, 370, 260, 370} /* UA,NN,G,A */
01733     ,{{ 370, 260, 370, 260, 370} /* UA,NN,G,C */
01734     ,{{ 260, 260, 260, 260, 260} /* UA,NN,G,G */
01735     ,{{ 370, 260, 370, 260, 370} /* UA,NN,G,U */
01736     }
01737     ,{{{ 370, 370, 370, 370, 300} /* UA,NN,U,E */
01738     ,{{ 370, 370, 370, 370, 300} /* UA,NN,U,A */
01739     ,{{ 370, 370, 370, 370, 300} /* UA,NN,U,C */
01740     ,{{ 370, 370, 370, 370, 300} /* UA,NN,U,G */
01741     ,{{ 300, 300, 300, 300, 300} /* UA,NN,U,U */
01742     }
01743     }
01744     }
01745     ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E,E */
01746     ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,A */
01747     ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,C */
01748     ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,G */
01749     ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,U */
01750     }
01751     ,{{{ INF, INF, INF, INF, INF} /* NN,NP,A,E */
01752     ,{{ INF, INF, INF, INF, INF} /* NN,NP,A,A */
01753     ,{{ INF, INF, INF, INF, INF} /* NN,NP,A,C */
01754     ,{{ INF, INF, INF, INF, INF} /* NN,NP,A,G */
01755     ,{{ INF, INF, INF, INF, INF} /* NN,NP,A,U */
01756     }
01757     ,{{{ INF, INF, INF, INF, INF} /* NN,NP,C,E */
01758     ,{{ INF, INF, INF, INF, INF} /* NN,NP,C,A */
01759     ,{{ INF, INF, INF, INF, INF} /* NN,NP,C,C */
01760     ,{{ INF, INF, INF, INF, INF} /* NN,NP,C,G */
01761     ,{{ INF, INF, INF, INF, INF} /* NN,NP,C,U */
01762     }
01763     ,{{{ INF, INF, INF, INF, INF} /* NN,NP,G,E */
01764     ,{{ INF, INF, INF, INF, INF} /* NN,NP,G,A */
01765     ,{{ INF, INF, INF, INF, INF} /* NN,NP,G,C */
01766     ,{{ INF, INF, INF, INF, INF} /* NN,NP,G,G */
01767     ,{{ INF, INF, INF, INF, INF} /* NN,NP,G,U */
01768     }
01769     ,{{{ INF, INF, INF, INF, INF} /* NN,NP,U,E */
01770     ,{{ INF, INF, INF, INF, INF} /* NN,NP,U,A */
01771     ,{{ INF, INF, INF, INF, INF} /* NN,NP,U,C */
01772     ,{{ INF, INF, INF, INF, INF} /* NN,NP,U,G */
01773     ,{{ INF, INF, INF, INF, INF} /* NN,NP,U,U */
01774     }
01775     }
01776     ,{{{ 300, 300, 300, 300, 300} /* NN,CG,E,E */
01777     ,{{ 300, 300, 300, 300, 300} /* NN,CG,E,A */
01778     ,{{ 300, 300, 300, 300, 300} /* NN,CG,E,C */
01779     ,{{ 300, 300, 300, 300, 300} /* NN,CG,E,G */
01780     ,{{ 300, 300, 300, 300, 300} /* NN,CG,E,U */
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01782     ,{{{ 300, 300, 300, 300, 300} /* NN,CG,A,E */
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01786     ,{{ 300, 300, 300, 300, 300} /* NN,CG,A,U */
01787     }
01788     ,{{{ 300, 300, 300, 300, 300} /* NN,CG,C,E */
01789     ,{{ 300, 300, 300, 300, 300} /* NN,CG,C,A */
01790     ,{{ 300, 300, 300, 300, 300} /* NN,CG,C,C */
01791     ,{{ 300, 300, 300, 300, 300} /* NN,CG,C,G */

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01793 }
01794 , { { 300, 190, 300, 190, 300} /* NN,CG,G,E */
01795 , { 190, 190, 190, 190, 190} /* NN,CG,G,A */
01796 , { 300, 190, 300, 190, 300} /* NN,CG,G,C */
01797 , { 190, 190, 190, 190, 190} /* NN,CG,G,G */
01798 , { 300, 190, 300, 190, 300} /* NN,CG,G,U */
01799 }
01800 , { { 300, 300, 300, 300, 220} /* NN,CG,U,E */
01801 , { 300, 300, 300, 300, 220} /* NN,CG,U,A */
01802 , { 300, 300, 300, 300, 220} /* NN,CG,U,C */
01803 , { 300, 300, 300, 300, 220} /* NN,CG,U,G */
01804 , { 220, 220, 220, 220, 220} /* NN,CG,U,U */
01805 }
01806 }
01807 , { { { 300, 300, 300, 300, 300} /* NN,GC,E,E */
01808 , { 300, 300, 300, 300, 300} /* NN,GC,E,A */
01809 , { 300, 300, 300, 300, 300} /* NN,GC,E,C */
01810 , { 300, 300, 300, 300, 300} /* NN,GC,E,G */
01811 , { 300, 300, 300, 300, 300} /* NN,GC,E,U */
01812 }
01813 , { { 300, 300, 300, 300, 300} /* NN,GC,A,E */
01814 , { 300, 300, 300, 300, 300} /* NN,GC,A,A */
01815 , { 300, 300, 300, 300, 300} /* NN,GC,A,C */
01816 , { 190, 190, 190, 190, 190} /* NN,GC,A,G */
01817 , { 300, 300, 300, 300, 300} /* NN,GC,A,U */
01818 }
01819 , { { 300, 300, 300, 300, 300} /* NN,GC,C,E */
01820 , { 300, 300, 300, 300, 300} /* NN,GC,C,A */
01821 , { 300, 300, 300, 300, 300} /* NN,GC,C,C */
01822 , { 300, 300, 300, 300, 300} /* NN,GC,C,G */
01823 , { 300, 300, 300, 300, 300} /* NN,GC,C,U */
01824 }
01825 , { { 300, 190, 300, 190, 300} /* NN,GC,G,E */
01826 , { 300, 190, 300, 190, 300} /* NN,GC,G,A */
01827 , { 300, 190, 300, 190, 300} /* NN,GC,G,C */
01828 , { 190, 190, 190, 190, 190} /* NN,GC,G,G */
01829 , { 300, 190, 300, 190, 300} /* NN,GC,G,U */
01830 }
01831 , { { 300, 300, 300, 300, 220} /* NN,GC,U,E */
01832 , { 300, 300, 300, 300, 220} /* NN,GC,U,A */
01833 , { 300, 300, 300, 300, 220} /* NN,GC,U,C */
01834 , { 300, 300, 300, 300, 220} /* NN,GC,U,G */
01835 , { 220, 220, 220, 220, 220} /* NN,GC,U,U */
01836 }
01837 }
01838 , { { { 370, 370, 370, 370, 370} /* NN,GU,E,E */
01839 , { 370, 370, 370, 370, 370} /* NN,GU,E,A */
01840 , { 370, 370, 370, 370, 370} /* NN,GU,E,C */
01841 , { 370, 370, 370, 370, 370} /* NN,GU,E,G */
01842 , { 370, 370, 370, 370, 370} /* NN,GU,E,U */
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01844 , { { 370, 370, 370, 370, 370} /* NN,GU,A,E */
01845 , { 370, 370, 370, 370, 370} /* NN,GU,A,A */
01846 , { 370, 370, 370, 370, 370} /* NN,GU,A,C */
01847 , { 260, 260, 260, 260, 260} /* NN,GU,A,G */
01848 , { 370, 370, 370, 370, 370} /* NN,GU,A,U */
01849 }
01850 , { { 370, 370, 370, 370, 370} /* NN,GU,C,E */
01851 , { 370, 370, 370, 370, 370} /* NN,GU,C,A */
01852 , { 370, 370, 370, 370, 370} /* NN,GU,C,C */
01853 , { 370, 370, 370, 370, 370} /* NN,GU,C,G */
01854 , { 370, 370, 370, 370, 370} /* NN,GU,C,U */
01855 }
01856 , { { 370, 260, 370, 260, 370} /* NN,GU,G,E */
01857 , { 370, 260, 370, 260, 370} /* NN,GU,G,A */
01858 , { 370, 260, 370, 260, 370} /* NN,GU,G,C */
01859 , { 260, 260, 260, 260, 260} /* NN,GU,G,G */
01860 , { 370, 260, 370, 260, 370} /* NN,GU,G,U */
01861 }
01862 , { { 370, 370, 370, 370, 300} /* NN,GU,U,E */
01863 , { 370, 370, 370, 370, 300} /* NN,GU,U,A */
01864 , { 370, 370, 370, 370, 300} /* NN,GU,U,C */
01865 , { 370, 370, 370, 370, 300} /* NN,GU,U,G */
01866 , { 300, 300, 300, 300, 300} /* NN,GU,U,U */
01867 }
01868 }
01869 , { { { 370, 370, 370, 370, 370} /* NN,UG,E,E */
01870 , { 370, 370, 370, 370, 370} /* NN,UG,E,A */
01871 , { 370, 370, 370, 370, 370} /* NN,UG,E,C */
01872 , { 370, 370, 370, 370, 370} /* NN,UG,E,G */
01873 , { 370, 370, 370, 370, 370} /* NN,UG,E,U */
01874 }
01875 , { { 370, 370, 370, 370, 370} /* NN,UG,A,E */
01876 , { 370, 370, 370, 370, 370} /* NN,UG,A,A */
01877 , { 370, 370, 370, 370, 370} /* NN,UG,A,C */
01878 , { 260, 260, 260, 260, 260} /* NN,UG,A,G */
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01879 , { 370, 370, 370, 370, 370 } /* NN,UG,A,U */
01880 }
01881 , { { 370, 370, 370, 370, 370 } /* NN,UG,C,E */
01882 , { 370, 370, 370, 370, 370 } /* NN,UG,C,A */
01883 , { 370, 370, 370, 370, 370 } /* NN,UG,C,C */
01884 , { 370, 370, 370, 370, 370 } /* NN,UG,C,G */
01885 , { 370, 370, 370, 370, 370 } /* NN,UG,C,U */
01886 }
01887 , { { 370, 260, 370, 260, 370 } /* NN,UG,G,E */
01888 , { 260, 260, 260, 260, 260 } /* NN,UG,G,A */
01889 , { 370, 260, 370, 260, 370 } /* NN,UG,G,C */
01890 , { 260, 260, 260, 260, 260 } /* NN,UG,G,G */
01891 , { 370, 260, 370, 260, 370 } /* NN,UG,G,U */
01892 }
01893 , { { 370, 370, 370, 370, 300 } /* NN,UG,U,E */
01894 , { 370, 370, 370, 370, 300 } /* NN,UG,U,A */
01895 , { 370, 370, 370, 370, 300 } /* NN,UG,U,C */
01896 , { 370, 370, 370, 370, 300 } /* NN,UG,U,G */
01897 , { 300, 300, 300, 300, 300 } /* NN,UG,U,U */
01898 }
01899 }
01900 , { { { 370, 370, 370, 370, 370 } /* NN,AU,E,E */
01901 , { 370, 370, 370, 370, 370 } /* NN,AU,E,A */
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01905 }
01906 , { { 370, 370, 370, 370, 370 } /* NN,AU,A,E */
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01909 , { 260, 260, 260, 260, 260 } /* NN,AU,A,G */
01910 , { 370, 370, 370, 370, 370 } /* NN,AU,A,U */
01911 }
01912 , { { 370, 370, 370, 370, 370 } /* NN,AU,C,E */
01913 , { 370, 370, 370, 370, 370 } /* NN,AU,C,A */
01914 , { 370, 370, 370, 370, 370 } /* NN,AU,C,C */
01915 , { 370, 370, 370, 370, 370 } /* NN,AU,C,G */
01916 , { 370, 370, 370, 370, 370 } /* NN,AU,C,U */
01917 }
01918 , { { 370, 260, 370, 260, 370 } /* NN,AU,G,E */
01919 , { 370, 260, 370, 260, 370 } /* NN,AU,G,A */
01920 , { 370, 260, 370, 260, 370 } /* NN,AU,G,C */
01921 , { 260, 260, 260, 260, 260 } /* NN,AU,G,G */
01922 , { 370, 260, 370, 260, 370 } /* NN,AU,G,U */
01923 }
01924 , { { 370, 370, 370, 370, 300 } /* NN,AU,U,E */
01925 , { 370, 370, 370, 370, 300 } /* NN,AU,U,A */
01926 , { 370, 370, 370, 370, 300 } /* NN,AU,U,C */
01927 , { 370, 370, 370, 370, 300 } /* NN,AU,U,G */
01928 , { 300, 300, 300, 300, 300 } /* NN,AU,U,U */
01929 }
01930 }
01931 , { { { 370, 370, 370, 370, 370 } /* NN,UA,E,E */
01932 , { 370, 370, 370, 370, 370 } /* NN,UA,E,A */
01933 , { 370, 370, 370, 370, 370 } /* NN,UA,E,C */
01934 , { 370, 370, 370, 370, 370 } /* NN,UA,E,G */
01935 , { 370, 370, 370, 370, 370 } /* NN,UA,E,U */
01936 }
01937 , { { 370, 370, 370, 370, 370 } /* NN,UA,A,E */
01938 , { 370, 370, 370, 370, 370 } /* NN,UA,A,A */
01939 , { 370, 370, 370, 370, 370 } /* NN,UA,A,C */
01940 , { 260, 260, 260, 260, 260 } /* NN,UA,A,G */
01941 , { 370, 370, 370, 370, 370 } /* NN,UA,A,U */
01942 }
01943 , { { 370, 370, 370, 370, 370 } /* NN,UA,C,E */
01944 , { 370, 370, 370, 370, 370 } /* NN,UA,C,A */
01945 , { 370, 370, 370, 370, 370 } /* NN,UA,C,C */
01946 , { 370, 370, 370, 370, 370 } /* NN,UA,C,G */
01947 , { 370, 370, 370, 370, 370 } /* NN,UA,C,U */
01948 }
01949 , { { 370, 260, 370, 260, 370 } /* NN,UA,G,E */
01950 , { 260, 260, 260, 260, 260 } /* NN,UA,G,A */
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01952 , { 260, 260, 260, 260, 260 } /* NN,UA,G,G */
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01956 , { 370, 370, 370, 370, 300 } /* NN,UA,U,A */
01957 , { 370, 370, 370, 370, 300 } /* NN,UA,U,C */
01958 , { 370, 370, 370, 370, 300 } /* NN,UA,U,G */
01959 , { 300, 300, 300, 300, 300 } /* NN,UA,U,U */
01960 }
01961 }
01962 , { { { 370, 370, 370, 370, 370 } /* NN,NN,E,E */
01963 , { 370, 370, 370, 370, 370 } /* NN,NN,E,A */
01964 , { 370, 370, 370, 370, 370 } /* NN,NN,E,C */
01965 , { 370, 370, 370, 370, 370 } /* NN,NN,E,G */

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01968     ,{{      370,      370,      370,      370,      370} /* NN,NN,A,E */
01969     ,{      370,      370,      370,      370,      370} /* NN,NN,A,A */
01970     ,{      370,      370,      370,      370,      370} /* NN,NN,A,C */
01971     ,{      260,      260,      260,      260,      260} /* NN,NN,A,G */
01972     ,{      370,      370,      370,      370,      370} /* NN,NN,A,U */
01973     }
01974     ,{{      370,      370,      370,      370,      370} /* NN,NN,C,E */
01975     ,{      370,      370,      370,      370,      370} /* NN,NN,C,A */
01976     ,{      370,      370,      370,      370,      370} /* NN,NN,C,C */
01977     ,{      370,      370,      370,      370,      370} /* NN,NN,C,G */
01978     ,{      370,      370,      370,      370,      370} /* NN,NN,C,U */
01979     }
01980     ,{{      370,      260,      370,      260,      370} /* NN,NN,G,E */
01981     ,{      370,      260,      370,      260,      370} /* NN,NN,G,A */
01982     ,{      370,      260,      370,      260,      370} /* NN,NN,G,C */
01983     ,{      260,      260,      260,      260,      260} /* NN,NN,G,G */
01984     ,{      370,      260,      370,      260,      370} /* NN,NN,G,U */
01985     }
01986     ,{{      370,      370,      370,      370,      300} /* NN,NN,U,E */
01987     ,{      370,      370,      370,      370,      300} /* NN,NN,U,A */
01988     ,{      370,      370,      370,      370,      300} /* NN,NN,U,C */
01989     ,{      370,      370,      370,      370,      300} /* NN,NN,U,G */
01990     ,{      300,      300,      300,      300,      300} /* NN,NN,U,U */
01991     }
01992     }
01993     }};
01994

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11.95 intl21_D.h

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00004     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,C */
00005     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,G */
00006     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,T */
00007     }
00008     ,{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,E */
00009     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,A */
00010     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,C */
00011     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,G */
00012     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,T */
00013     }
00014     ,{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,E */
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00018     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,T */
00019     }
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00052     ,{      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,A */
00053     ,{      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,C */

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00074 , { INF, INF, INF, INF, INF } /* NP,GC,A,T */
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00078 , { INF, INF, INF, INF, INF } /* NP,GC,C,C */
00079 , { INF, INF, INF, INF, INF } /* NP,GC,C,G */
00080 , { INF, INF, INF, INF, INF } /* NP,GC,C,T */
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00083 , { INF, INF, INF, INF, INF } /* NP,GC,G,A */
00084 , { INF, INF, INF, INF, INF } /* NP,GC,G,C */
00085 , { INF, INF, INF, INF, INF } /* NP,GC,G,G */
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00092 , { INF, INF, INF, INF, INF } /* NP,GC,T,T */
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00097 , { INF, INF, INF, INF, INF } /* NP,GT,E,C */
00098 , { INF, INF, INF, INF, INF } /* NP,GT,E,G */
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00185 , { INF, INF, INF, INF, INF } /* NP, AT, T, T */
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00187 }
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00343 }
00344 , { { { 290, 290, 240, 270, 270} /* CG,GT,E,E */
00345 , { 270, 270, 240, 250, 220} /* CG,GT,E,A */
00346 , { 270, 270, 240, 250, 250} /* CG,GT,E,C */
00347 , { 290, 290, 240, 270, 220} /* CG,GT,E,G */
00348 , { 270, 270, 240, 250, 270} /* CG,GT,E,T */
00349 }
00350 , { { 270, 210, 240, 220, 270} /* CG,GT,A,E */
00351 , { 220, 160, 190, 170, 220} /* CG,GT,A,A */
00352 , { 250, 190, 220, 200, 250} /* CG,GT,A,C */
00353 , { 220, 160, 190, 170, 220} /* CG,GT,A,G */
00354 , { 270, 210, 240, 220, 270} /* CG,GT,A,T */
00355 }
00356 , { { 240, 220, 240, 210, 220} /* CG,GT,C,E */
00357 , { 240, 220, 240, 210, 220} /* CG,GT,C,A */
00358 , { 240, 220, 240, 210, 220} /* CG,GT,C,C */
00359 , { 220, 200, 220, 190, 200} /* CG,GT,C,G */
00360 , { 240, 220, 240, 210, 220} /* CG,GT,C,T */
00361 }
00362 , { { 260, 220, 200, 220, 260} /* CG,GT,G,E */
00363 , { 210, 170, 150, 170, 210} /* CG,GT,G,A */
00364 , { 220, 180, 160, 180, 220} /* CG,GT,G,C */
00365 , { 210, 170, 150, 170, 210} /* CG,GT,G,G */
00366 , { 260, 220, 200, 220, 260} /* CG,GT,G,T */
00367 }
00368 , { { 290, 290, 240, 270, 220} /* CG,GT,T,E */
00369 , { 270, 270, 220, 250, 200} /* CG,GT,T,A */
00370 , { 270, 270, 220, 250, 200} /* CG,GT,T,C */
00371 , { 290, 290, 240, 270, 220} /* CG,GT,T,G */
00372 , { 270, 270, 220, 250, 200} /* CG,GT,T,T */
00373 }
00374 }
00375 , { { { 290, 290, 240, 270, 270} /* CG,TG,E,E */
00376 , { 290, 290, 240, 270, 220} /* CG,TG,E,A */
00377 , { 270, 270, 240, 250, 250} /* CG,TG,E,C */
00378 , { 290, 290, 240, 270, 220} /* CG,TG,E,G */
00379 , { 270, 270, 240, 250, 270} /* CG,TG,E,T */
00380 }
00381 , { { 270, 210, 240, 220, 270} /* CG,TG,A,E */
00382 , { 220, 160, 190, 170, 220} /* CG,TG,A,A */
00383 , { 250, 190, 220, 200, 250} /* CG,TG,A,C */
00384 , { 220, 160, 190, 170, 220} /* CG,TG,A,G */
00385 , { 270, 210, 240, 220, 270} /* CG,TG,A,T */
00386 }
00387 , { { 240, 220, 240, 210, 220} /* CG,TG,C,E */
00388 , { 240, 220, 240, 210, 220} /* CG,TG,C,A */
00389 , { 240, 220, 240, 210, 220} /* CG,TG,C,C */
00390 , { 210, 190, 210, 180, 190} /* CG,TG,C,G */
00391 , { 240, 220, 240, 210, 220} /* CG,TG,C,T */
00392 }
00393 , { { 260, 220, 200, 220, 260} /* CG,TG,G,E */
00394 , { 210, 170, 150, 170, 210} /* CG,TG,G,A */
00395 , { 230, 190, 170, 190, 230} /* CG,TG,G,C */
00396 , { 210, 170, 150, 170, 210} /* CG,TG,G,G */
00397 , { 260, 220, 200, 220, 260} /* CG,TG,G,T */
00398 }
00399 , { { 290, 290, 240, 270, 220} /* CG,TG,T,E */
00400 , { 290, 290, 240, 270, 220} /* CG,TG,T,A */
00401 , { 270, 270, 220, 250, 200} /* CG,TG,T,C */
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00402 , { 290, 290, 240, 270, 220} /* CG,TG,T,G */
00403 , { 270, 270, 220, 250, 200} /* CG,TG,T,T */
00404 }
00405 }
00406 , {{ 290, 290, 240, 270, 270} /* CG,AT,E,E */
00407 , { 290, 290, 240, 270, 220} /* CG,AT,E,A */
00408 , { 250, 250, 230, 230, 220} /* CG,AT,E,C */
00409 , { 290, 290, 240, 270, 220} /* CG,AT,E,G */
00410 , { 270, 230, 240, 220, 270} /* CG,AT,E,T */
00411 }
00412 , {{ 270, 210, 240, 220, 270} /* CG,AT,A,E */
00413 , { 200, 140, 170, 150, 200} /* CG,AT,A,A */
00414 , { 220, 160, 190, 170, 220} /* CG,AT,A,C */
00415 , { 210, 150, 180, 160, 210} /* CG,AT,A,G */
00416 , { 270, 210, 240, 220, 270} /* CG,AT,A,T */
00417 }
00418 , {{ 240, 220, 240, 210, 220} /* CG,AT,C,E */
00419 , { 210, 190, 210, 180, 190} /* CG,AT,C,A */
00420 , { 230, 210, 230, 200, 210} /* CG,AT,C,C */
00421 , { 240, 220, 240, 210, 220} /* CG,AT,C,G */
00422 , { 220, 200, 220, 190, 200} /* CG,AT,C,T */
00423 }
00424 , {{ 260, 220, 200, 220, 260} /* CG,AT,G,E */
00425 , { 200, 160, 140, 160, 200} /* CG,AT,G,A */
00426 , { 220, 180, 160, 180, 220} /* CG,AT,G,C */
00427 , { 200, 160, 140, 160, 200} /* CG,AT,G,G */
00428 , { 260, 220, 200, 220, 260} /* CG,AT,G,T */
00429 }
00430 , {{ 290, 290, 240, 270, 220} /* CG,AT,T,E */
00431 , { 290, 290, 240, 270, 220} /* CG,AT,T,A */
00432 , { 250, 250, 200, 230, 180} /* CG,AT,T,C */
00433 , { 290, 290, 240, 270, 220} /* CG,AT,T,G */
00434 , { 230, 230, 180, 210, 160} /* CG,AT,T,T */
00435 }
00436 }
00437 , {{ 290, 290, 260, 270, 270} /* CG,TA,E,E */
00438 , { 290, 290, 240, 270, 220} /* CG,TA,E,A */
00439 , { 250, 250, 230, 230, 220} /* CG,TA,E,C */
00440 , { 290, 290, 260, 270, 240} /* CG,TA,E,G */
00441 , { 270, 230, 240, 220, 270} /* CG,TA,E,T */
00442 }
00443 , {{ 270, 210, 240, 220, 270} /* CG,TA,A,E */
00444 , { 210, 150, 180, 160, 210} /* CG,TA,A,A */
00445 , { 220, 160, 190, 170, 220} /* CG,TA,A,C */
00446 , { 210, 150, 180, 160, 210} /* CG,TA,A,G */
00447 , { 270, 210, 240, 220, 270} /* CG,TA,A,T */
00448 }
00449 , {{ 260, 240, 260, 230, 240} /* CG,TA,C,E */
00450 , { 210, 190, 210, 180, 190} /* CG,TA,C,A */
00451 , { 230, 210, 230, 200, 210} /* CG,TA,C,C */
00452 , { 260, 240, 260, 230, 240} /* CG,TA,C,G */
00453 , { 220, 200, 220, 190, 200} /* CG,TA,C,T */
00454 }
00455 , {{ 250, 210, 190, 210, 250} /* CG,TA,G,E */
00456 , { 200, 160, 140, 160, 200} /* CG,TA,G,A */
00457 , { 210, 170, 150, 170, 210} /* CG,TA,G,C */
00458 , { 200, 160, 140, 160, 200} /* CG,TA,G,G */
00459 , { 250, 210, 190, 210, 250} /* CG,TA,G,T */
00460 }
00461 , {{ 290, 290, 240, 270, 220} /* CG,TA,T,E */
00462 , { 290, 290, 240, 270, 220} /* CG,TA,T,A */
00463 , { 250, 250, 200, 230, 180} /* CG,TA,T,C */
00464 , { 290, 290, 240, 270, 220} /* CG,TA,T,G */
00465 , { 230, 230, 180, 210, 160} /* CG,TA,T,T */
00466 }
00467 }
00468 , {{ 290, 290, 260, 270, 270} /* CG,NN,E,E */
00469 , { 290, 290, 240, 270, 220} /* CG,NN,E,A */
00470 , { 270, 270, 240, 250, 250} /* CG,NN,E,C */
00471 , { 290, 290, 260, 270, 240} /* CG,NN,E,G */
00472 , { 270, 270, 240, 250, 270} /* CG,NN,E,T */
00473 }
00474 , {{ 270, 210, 240, 220, 270} /* CG,NN,A,E */
00475 , { 220, 160, 190, 170, 220} /* CG,NN,A,A */
00476 , { 250, 190, 220, 200, 250} /* CG,NN,A,C */
00477 , { 220, 160, 190, 170, 220} /* CG,NN,A,G */
00478 , { 270, 210, 240, 220, 270} /* CG,NN,A,T */
00479 }
00480 , {{ 260, 240, 260, 230, 240} /* CG,NN,C,E */
00481 , { 240, 220, 240, 210, 220} /* CG,NN,C,A */
00482 , { 240, 220, 240, 210, 220} /* CG,NN,C,C */
00483 , { 260, 240, 260, 230, 240} /* CG,NN,C,G */
00484 , { 240, 220, 240, 210, 220} /* CG,NN,C,T */
00485 }
00486 , {{ 260, 220, 200, 220, 260} /* CG,NN,G,E */
00487 , { 210, 170, 150, 170, 210} /* CG,NN,G,A */
00488 , { 230, 190, 170, 190, 230} /* CG,NN,G,C */

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00490 ,{ 260, 220, 200, 220, 260} /* CG,NN,G,T */
00491 }
00492 ,{{ 290, 290, 240, 270, 220} /* CG,NN,T,E */
00493 ,{ 290, 290, 240, 270, 220} /* CG,NN,T,A */
00494 ,{ 270, 270, 220, 250, 200} /* CG,NN,T,C */
00495 ,{ 290, 290, 240, 270, 220} /* CG,NN,T,G */
00496 ,{ 270, 270, 220, 250, 200} /* CG,NN,T,T */
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00498 }
00499 }
00500 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,E */
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00502 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C */
00503 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,G */
00504 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,T */
00505 }
00506 ,{{ INF, INF, INF, INF, INF} /* GC,NP,A,E */
00507 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,A */
00508 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,C */
00509 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,G */
00510 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,T */
00511 }
00512 ,{{ INF, INF, INF, INF, INF} /* GC,NP,C,E */
00513 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,A */
00514 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,C */
00515 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,G */
00516 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,T */
00517 }
00518 ,{{ INF, INF, INF, INF, INF} /* GC,NP,G,E */
00519 ,{ INF, INF, INF, INF, INF} /* GC,NP,G,A */
00520 ,{ INF, INF, INF, INF, INF} /* GC,NP,G,C */
00521 ,{ INF, INF, INF, INF, INF} /* GC,NP,G,G */
00522 ,{ INF, INF, INF, INF, INF} /* GC,NP,G,T */
00523 }
00524 ,{{ INF, INF, INF, INF, INF} /* GC,NP,T,E */
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00526 ,{ INF, INF, INF, INF, INF} /* GC,NP,T,C */
00527 ,{ INF, INF, INF, INF, INF} /* GC,NP,T,G */
00528 ,{ INF, INF, INF, INF, INF} /* GC,NP,T,T */
00529 }
00530 }
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00532 ,{ 230, 230, 200, 230, 190} /* GC,CG,E,A */
00533 ,{ 200, 200, 200, 200, 200} /* GC,CG,E,C */
00534 ,{ 220, 220, 190, 220, 190} /* GC,CG,E,G */
00535 ,{ 240, 180, 210, 190, 240} /* GC,CG,E,T */
00536 }
00537 ,{{ 240, 180, 210, 190, 240} /* GC,CG,A,E */
00538 ,{ 160, 100, 130, 110, 160} /* GC,CG,A,A */
00539 ,{ 190, 130, 160, 140, 190} /* GC,CG,A,C */
00540 ,{ 170, 110, 140, 120, 170} /* GC,CG,A,G */
00541 ,{ 240, 180, 210, 190, 240} /* GC,CG,A,T */
00542 }
00543 ,{{ 200, 180, 200, 130, 190} /* GC,CG,C,E */
00544 ,{ 180, 160, 180, 110, 170} /* GC,CG,C,A */
00545 ,{ 200, 180, 200, 130, 190} /* GC,CG,C,C */
00546 ,{ 140, 120, 140, 70, 130} /* GC,CG,C,G */
00547 ,{ 180, 160, 180, 110, 170} /* GC,CG,C,T */
00548 }
00549 ,{{ 240, 170, 190, 170, 240} /* GC,CG,G,E */
00550 ,{ 190, 120, 140, 120, 190} /* GC,CG,G,A */
00551 ,{ 200, 130, 150, 130, 200} /* GC,CG,G,C */
00552 ,{ 190, 120, 140, 120, 190} /* GC,CG,G,G */
00553 ,{ 240, 170, 190, 170, 240} /* GC,CG,G,T */
00554 }
00555 ,{{ 230, 230, 200, 230, 180} /* GC,CG,T,E */
00556 ,{ 230, 230, 200, 230, 180} /* GC,CG,T,A */
00557 ,{ 200, 200, 170, 200, 150} /* GC,CG,T,C */
00558 ,{ 220, 220, 190, 220, 170} /* GC,CG,T,G */
00559 ,{ 180, 180, 150, 180, 130} /* GC,CG,T,T */
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00561 }
00562 ,{{{ 240, 240, 210, 240, 240} /* GC,GC,E,E */
00563 ,{ 220, 220, 190, 220, 180} /* GC,GC,E,A */
00564 ,{ 200, 200, 190, 200, 180} /* GC,GC,E,C */
00565 ,{ 240, 240, 210, 240, 190} /* GC,GC,E,G */
00566 ,{ 240, 180, 190, 180, 240} /* GC,GC,E,T */
00567 }
00568 ,{{ 220, 160, 190, 170, 220} /* GC,GC,A,E */
00569 ,{ 150, 90, 120, 100, 150} /* GC,GC,A,A */
00570 ,{ 180, 120, 150, 130, 180} /* GC,GC,A,C */
00571 ,{ 160, 100, 130, 110, 160} /* GC,GC,A,G */
00572 ,{ 220, 160, 190, 170, 220} /* GC,GC,A,T */
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00574 ,{{ 190, 170, 190, 120, 180} /* GC,GC,C,E */
00575 ,{ 170, 150, 170, 100, 160} /* GC,GC,C,A */
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00576 , { 190, 170, 190, 120, 180} /* GC,GC,C,C */
00577 , { 170, 150, 170, 100, 160} /* GC,GC,C,G */
00578 , { 180, 160, 180, 110, 170} /* GC,GC,C,T */
00579 }
00580 , { { 240, 170, 190, 170, 240} /* GC,GC,G,E */
00581 , { 180, 110, 130, 110, 180} /* GC,GC,G,A */
00582 , { 150, 80, 100, 80, 150} /* GC,GC,G,C */
00583 , { 180, 110, 130, 110, 180} /* GC,GC,G,G */
00584 , { 240, 170, 190, 170, 240} /* GC,GC,G,T */
00585 }
00586 , { { 240, 240, 210, 240, 190} /* GC,GC,T,E */
00587 , { 220, 220, 190, 220, 170} /* GC,GC,T,A */
00588 , { 200, 200, 170, 200, 150} /* GC,GC,T,C */
00589 , { 240, 240, 210, 240, 190} /* GC,GC,T,G */
00590 , { 180, 180, 150, 180, 130} /* GC,GC,T,T */
00591 }
00592 }
00593 , { { { 280, 270, 240, 270, 280} /* GC,GT,E,E */
00594 , { 250, 250, 230, 250, 230} /* GC,GT,E,A */
00595 , { 250, 250, 230, 250, 240} /* GC,GT,E,C */
00596 , { 270, 270, 240, 270, 230} /* GC,GT,E,G */
00597 , { 280, 250, 230, 250, 280} /* GC,GT,E,T */
00598 }
00599 , { { 260, 200, 230, 210, 260} /* GC,GT,A,E */
00600 , { 210, 150, 180, 160, 210} /* GC,GT,A,A */
00601 , { 240, 180, 210, 190, 240} /* GC,GT,A,C */
00602 , { 210, 150, 180, 160, 210} /* GC,GT,A,G */
00603 , { 260, 200, 230, 210, 260} /* GC,GT,A,T */
00604 }
00605 , { { 230, 210, 230, 160, 220} /* GC,GT,C,E */
00606 , { 230, 210, 230, 160, 220} /* GC,GT,C,A */
00607 , { 230, 210, 230, 160, 220} /* GC,GT,C,C */
00608 , { 210, 190, 210, 140, 200} /* GC,GT,C,G */
00609 , { 230, 210, 230, 160, 220} /* GC,GT,C,T */
00610 }
00611 , { { 280, 210, 230, 210, 280} /* GC,GT,G,E */
00612 , { 230, 160, 180, 160, 230} /* GC,GT,G,A */
00613 , { 240, 170, 190, 170, 240} /* GC,GT,G,C */
00614 , { 230, 160, 180, 160, 230} /* GC,GT,G,G */
00615 , { 280, 210, 230, 210, 280} /* GC,GT,G,T */
00616 }
00617 , { { 270, 270, 240, 270, 220} /* GC,GT,T,E */
00618 , { 250, 250, 220, 250, 200} /* GC,GT,T,A */
00619 , { 250, 250, 220, 250, 200} /* GC,GT,T,C */
00620 , { 270, 270, 240, 270, 220} /* GC,GT,T,G */
00621 , { 250, 250, 220, 250, 200} /* GC,GT,T,T */
00622 }
00623 }
00624 , { { { 280, 270, 240, 270, 280} /* GC,TG,E,E */
00625 , { 270, 270, 240, 270, 230} /* GC,TG,E,A */
00626 , { 250, 250, 230, 250, 250} /* GC,TG,E,C */
00627 , { 270, 270, 240, 270, 230} /* GC,TG,E,G */
00628 , { 280, 250, 230, 250, 280} /* GC,TG,E,T */
00629 }
00630 , { { 260, 200, 230, 210, 260} /* GC,TG,A,E */
00631 , { 210, 150, 180, 160, 210} /* GC,TG,A,A */
00632 , { 240, 180, 210, 190, 240} /* GC,TG,A,C */
00633 , { 210, 150, 180, 160, 210} /* GC,TG,A,G */
00634 , { 260, 200, 230, 210, 260} /* GC,TG,A,T */
00635 }
00636 , { { 230, 210, 230, 160, 220} /* GC,TG,C,E */
00637 , { 230, 210, 230, 160, 220} /* GC,TG,C,A */
00638 , { 230, 210, 230, 160, 220} /* GC,TG,C,C */
00639 , { 200, 180, 200, 130, 190} /* GC,TG,C,G */
00640 , { 230, 210, 230, 160, 220} /* GC,TG,C,T */
00641 }
00642 , { { 280, 210, 230, 210, 280} /* GC,TG,G,E */
00643 , { 230, 160, 180, 160, 230} /* GC,TG,G,A */
00644 , { 250, 180, 200, 180, 250} /* GC,TG,G,C */
00645 , { 230, 160, 180, 160, 230} /* GC,TG,G,G */
00646 , { 280, 210, 230, 210, 280} /* GC,TG,G,T */
00647 }
00648 , { { 270, 270, 240, 270, 220} /* GC,TG,T,E */
00649 , { 270, 270, 240, 270, 220} /* GC,TG,T,A */
00650 , { 250, 250, 220, 250, 200} /* GC,TG,T,C */
00651 , { 270, 270, 240, 270, 220} /* GC,TG,T,G */
00652 , { 250, 250, 220, 250, 200} /* GC,TG,T,T */
00653 }
00654 }
00655 , { { { 280, 270, 240, 270, 280} /* GC,AT,E,E */
00656 , { 270, 270, 240, 270, 220} /* GC,AT,E,A */
00657 , { 240, 230, 220, 230, 240} /* GC,AT,E,C */
00658 , { 270, 270, 240, 270, 220} /* GC,AT,E,G */
00659 , { 280, 210, 230, 210, 280} /* GC,AT,E,T */
00660 }
00661 , { { 260, 200, 230, 210, 260} /* GC,AT,A,E */
00662 , { 190, 130, 160, 140, 190} /* GC,AT,A,A */

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00663 , { 210, 150, 180, 160, 210} /* GC,AT,A,C */
00664 , { 200, 140, 170, 150, 200} /* GC,AT,A,G */
00665 , { 260, 200, 230, 210, 260} /* GC,AT,A,T */
00666 }
00667 , { { 230, 210, 230, 160, 220} /* GC,AT,C,E */
00668 , { 200, 180, 200, 130, 190} /* GC,AT,C,A */
00669 , { 220, 200, 220, 150, 210} /* GC,AT,C,C */
00670 , { 230, 210, 230, 160, 220} /* GC,AT,C,G */
00671 , { 210, 190, 210, 140, 200} /* GC,AT,C,T */
00672 }
00673 , { { 280, 210, 230, 210, 280} /* GC,AT,G,E */
00674 , { 220, 150, 170, 150, 220} /* GC,AT,G,A */
00675 , { 240, 170, 190, 170, 240} /* GC,AT,G,C */
00676 , { 220, 150, 170, 150, 220} /* GC,AT,G,G */
00677 , { 280, 210, 230, 210, 280} /* GC,AT,G,T */
00678 }
00679 , { { 270, 270, 240, 270, 220} /* GC,AT,T,E */
00680 , { 270, 270, 240, 270, 220} /* GC,AT,T,A */
00681 , { 230, 230, 200, 230, 180} /* GC,AT,T,C */
00682 , { 270, 270, 240, 270, 220} /* GC,AT,T,G */
00683 , { 210, 210, 180, 210, 160} /* GC,AT,T,T */
00684 }
00685 }
00686 , { { { 270, 270, 250, 270, 270} /* GC,TA,E,E */
00687 , { 270, 270, 240, 270, 220} /* GC,TA,E,A */
00688 , { 230, 230, 220, 230, 230} /* GC,TA,E,C */
00689 , { 270, 270, 250, 270, 240} /* GC,TA,E,G */
00690 , { 270, 210, 230, 210, 270} /* GC,TA,E,T */
00691 }
00692 , { { 260, 200, 230, 210, 260} /* GC,TA,A,E */
00693 , { 200, 140, 170, 150, 200} /* GC,TA,A,A */
00694 , { 210, 150, 180, 160, 210} /* GC,TA,A,C */
00695 , { 200, 140, 170, 150, 200} /* GC,TA,A,G */
00696 , { 260, 200, 230, 210, 260} /* GC,TA,A,T */
00697 }
00698 , { { 250, 230, 250, 180, 240} /* GC,TA,C,E */
00699 , { 200, 180, 200, 130, 190} /* GC,TA,C,A */
00700 , { 220, 200, 220, 150, 210} /* GC,TA,C,C */
00701 , { 250, 230, 250, 180, 240} /* GC,TA,C,G */
00702 , { 210, 190, 210, 140, 200} /* GC,TA,C,T */
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00704 , { { 270, 200, 220, 200, 270} /* GC,TA,G,E */
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00706 , { 230, 160, 180, 160, 230} /* GC,TA,G,C */
00707 , { 220, 150, 170, 150, 220} /* GC,TA,G,G */
00708 , { 270, 200, 220, 200, 270} /* GC,TA,G,T */
00709 }
00710 , { { 270, 270, 240, 270, 220} /* GC,TA,T,E */
00711 , { 270, 270, 240, 270, 220} /* GC,TA,T,A */
00712 , { 230, 230, 200, 230, 180} /* GC,TA,T,C */
00713 , { 270, 270, 240, 270, 220} /* GC,TA,T,G */
00714 , { 210, 210, 180, 210, 160} /* GC,TA,T,T */
00715 }
00716 }
00717 , { { { 280, 270, 250, 270, 280} /* GC,NN,E,E */
00718 , { 270, 270, 240, 270, 230} /* GC,NN,E,A */
00719 , { 250, 250, 230, 250, 250} /* GC,NN,E,C */
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00721 , { 280, 250, 230, 250, 280} /* GC,NN,E,T */
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00726 , { 210, 150, 180, 160, 210} /* GC,NN,A,G */
00727 , { 260, 200, 230, 210, 260} /* GC,NN,A,T */
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00731 , { 230, 210, 230, 160, 220} /* GC,NN,C,C */
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00744 , { 270, 270, 240, 270, 220} /* GC,NN,T,G */
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00836 , { 260, 260, 240, 260, 240 } /* GT,GC,T,A */

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01093 , { 290, 290, 270, 290, 290 } /* TG,GT,E,C */
01094 , { 310, 310, 290, 310, 290 } /* TG,GT,E,G */
01095 , { 310, 290, 290, 290, 310 } /* TG,GT,E,T */
01096 }
01097 , { { 310, 260, 290, 260, 310 } /* TG,GT,A,E */
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01098 , { 260, 210, 240, 210, 260} /* TG,GT,A,A */
01099 , { 290, 240, 270, 240, 290} /* TG,GT,A,C */
01100 , { 260, 210, 240, 210, 260} /* TG,GT,A,G */
01101 , { 310, 260, 290, 260, 310} /* TG,GT,A,T */
01102 }
01103 , {{ 270, 270, 270, 260, 270} /* TG,GT,C,E */
01104 , { 270, 270, 270, 260, 270} /* TG,GT,C,A */
01105 , { 270, 270, 270, 260, 270} /* TG,GT,C,C */
01106 , { 250, 250, 250, 240, 250} /* TG,GT,C,G */
01107 , { 270, 270, 270, 260, 270} /* TG,GT,C,T */
01108 }
01109 , {{ 310, 260, 260, 260, 310} /* TG,GT,G,E */
01110 , { 260, 210, 210, 210, 260} /* TG,GT,G,A */
01111 , { 270, 220, 220, 220, 270} /* TG,GT,G,C */
01112 , { 260, 210, 210, 210, 260} /* TG,GT,G,G */
01113 , { 310, 260, 260, 260, 310} /* TG,GT,G,T */
01114 }
01115 , {{ 310, 310, 290, 310, 290} /* TG,GT,T,E */
01116 , { 290, 290, 270, 290, 270} /* TG,GT,T,A */
01117 , { 290, 290, 270, 290, 270} /* TG,GT,T,C */
01118 , { 310, 310, 290, 310, 290} /* TG,GT,T,G */
01119 , { 290, 290, 270, 290, 270} /* TG,GT,T,T */
01120 }
01121 }
01122 , {{{ 310, 310, 290, 310, 310} /* TG,TG,E,E */
01123 , { 310, 310, 290, 310, 290} /* TG,TG,E,A */
01124 , { 290, 290, 270, 290, 290} /* TG,TG,E,C */
01125 , { 310, 310, 290, 310, 290} /* TG,TG,E,G */
01126 , { 310, 290, 290, 290, 310} /* TG,TG,E,T */
01127 }
01128 , {{ 310, 260, 290, 260, 310} /* TG,TG,A,E */
01129 , { 260, 210, 240, 210, 260} /* TG,TG,A,A */
01130 , { 290, 240, 270, 240, 290} /* TG,TG,A,C */
01131 , { 260, 210, 240, 210, 260} /* TG,TG,A,G */
01132 , { 310, 260, 290, 260, 310} /* TG,TG,A,T */
01133 }
01134 , {{ 270, 270, 270, 260, 270} /* TG,TG,C,E */
01135 , { 270, 270, 270, 260, 270} /* TG,TG,C,A */
01136 , { 270, 270, 270, 260, 270} /* TG,TG,C,C */
01137 , { 240, 240, 240, 230, 240} /* TG,TG,C,G */
01138 , { 270, 270, 270, 260, 270} /* TG,TG,C,T */
01139 }
01140 , {{ 310, 260, 260, 260, 310} /* TG,TG,G,E */
01141 , { 260, 210, 210, 210, 260} /* TG,TG,G,A */
01142 , { 280, 230, 230, 230, 280} /* TG,TG,G,C */
01143 , { 260, 210, 210, 210, 260} /* TG,TG,G,G */
01144 , { 310, 260, 260, 260, 310} /* TG,TG,G,T */
01145 }
01146 , {{ 310, 310, 290, 310, 290} /* TG,TG,T,E */
01147 , { 310, 310, 290, 310, 290} /* TG,TG,T,A */
01148 , { 290, 290, 270, 290, 270} /* TG,TG,T,C */
01149 , { 310, 310, 290, 310, 290} /* TG,TG,T,G */
01150 , { 290, 290, 270, 290, 270} /* TG,TG,T,T */
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01152 }
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01154 , { 310, 310, 290, 310, 290} /* TG,AT,E,A */
01155 , { 270, 270, 260, 270, 270} /* TG,AT,E,C */
01156 , { 310, 310, 290, 310, 290} /* TG,AT,E,G */
01157 , { 310, 260, 290, 260, 310} /* TG,AT,E,T */
01158 }
01159 , {{ 310, 260, 290, 260, 310} /* TG,AT,A,E */
01160 , { 240, 190, 220, 190, 240} /* TG,AT,A,A */
01161 , { 260, 210, 240, 210, 260} /* TG,AT,A,C */
01162 , { 250, 200, 230, 200, 250} /* TG,AT,A,G */
01163 , { 310, 260, 290, 260, 310} /* TG,AT,A,T */
01164 }
01165 , {{ 270, 270, 270, 260, 270} /* TG,AT,C,E */
01166 , { 240, 240, 240, 230, 240} /* TG,AT,C,A */
01167 , { 260, 260, 260, 250, 260} /* TG,AT,C,C */
01168 , { 270, 270, 270, 260, 270} /* TG,AT,C,G */
01169 , { 250, 250, 250, 240, 250} /* TG,AT,C,T */
01170 }
01171 , {{ 310, 260, 260, 260, 310} /* TG,AT,G,E */
01172 , { 250, 200, 200, 200, 250} /* TG,AT,G,A */
01173 , { 270, 220, 220, 220, 270} /* TG,AT,G,C */
01174 , { 250, 200, 200, 200, 250} /* TG,AT,G,G */
01175 , { 310, 260, 260, 260, 310} /* TG,AT,G,T */
01176 }
01177 , {{ 310, 310, 290, 310, 290} /* TG,AT,T,E */
01178 , { 310, 310, 290, 310, 290} /* TG,AT,T,A */
01179 , { 270, 270, 250, 270, 250} /* TG,AT,T,C */
01180 , { 310, 310, 290, 310, 290} /* TG,AT,T,G */
01181 , { 250, 250, 230, 250, 230} /* TG,AT,T,T */
01182 }
01183 }
01184 , {{{ 310, 310, 290, 310, 310} /* TG,TA,E,E */

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01186 , { 270, 270, 260, 270, 260} /* TG,TA,E,C */
01187 , { 310, 310, 290, 310, 290} /* TG,TA,E,G */
01188 , { 310, 260, 290, 260, 310} /* TG,TA,E,T */
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01190 , {{ 310, 260, 290, 260, 310} /* TG,TA,A,E */
01191 , { 250, 200, 230, 200, 250} /* TG,TA,A,A */
01192 , { 260, 210, 240, 210, 260} /* TG,TA,A,C */
01193 , { 250, 200, 230, 200, 250} /* TG,TA,A,G */
01194 , { 310, 260, 290, 260, 310} /* TG,TA,A,T */
01195 }
01196 , {{ 290, 290, 290, 280, 290} /* TG,TA,C,E */
01197 , { 240, 240, 240, 230, 240} /* TG,TA,C,A */
01198 , { 260, 260, 260, 250, 260} /* TG,TA,C,C */
01199 , { 290, 290, 290, 280, 290} /* TG,TA,C,G */
01200 , { 250, 250, 250, 240, 250} /* TG,TA,C,T */
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01202 , {{ 300, 250, 250, 250, 300} /* TG,TA,G,E */
01203 , { 250, 200, 200, 200, 250} /* TG,TA,G,A */
01204 , { 260, 210, 210, 210, 260} /* TG,TA,G,C */
01205 , { 250, 200, 200, 200, 250} /* TG,TA,G,G */
01206 , { 300, 250, 250, 250, 300} /* TG,TA,G,T */
01207 }
01208 , {{ 310, 310, 290, 310, 290} /* TG,TA,T,E */
01209 , { 310, 310, 290, 310, 290} /* TG,TA,T,A */
01210 , { 270, 270, 250, 270, 250} /* TG,TA,T,C */
01211 , { 310, 310, 290, 310, 290} /* TG,TA,T,G */
01212 , { 250, 250, 230, 250, 230} /* TG,TA,T,T */
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01214 }
01215 , {{{ 310, 310, 290, 310, 310} /* TG,NN,E,E */
01216 , { 310, 310, 290, 310, 290} /* TG,NN,E,A */
01217 , { 290, 290, 270, 290, 290} /* TG,NN,E,C */
01218 , { 310, 310, 290, 310, 290} /* TG,NN,E,G */
01219 , { 310, 290, 290, 290, 310} /* TG,NN,E,T */
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01222 , { 260, 210, 240, 210, 260} /* TG,NN,A,A */
01223 , { 290, 240, 270, 240, 290} /* TG,NN,A,C */
01224 , { 260, 210, 240, 210, 260} /* TG,NN,A,G */
01225 , { 310, 260, 290, 260, 310} /* TG,NN,A,T */
01226 }
01227 , {{ 290, 290, 290, 280, 290} /* TG,NN,C,E */
01228 , { 270, 270, 270, 260, 270} /* TG,NN,C,A */
01229 , { 270, 270, 270, 260, 270} /* TG,NN,C,C */
01230 , { 290, 290, 290, 280, 290} /* TG,NN,C,G */
01231 , { 270, 270, 270, 260, 270} /* TG,NN,C,T */
01232 }
01233 , {{ 310, 260, 260, 260, 310} /* TG,NN,G,E */
01234 , { 260, 210, 210, 210, 260} /* TG,NN,G,A */
01235 , { 280, 230, 230, 230, 280} /* TG,NN,G,C */
01236 , { 260, 210, 210, 210, 260} /* TG,NN,G,G */
01237 , { 310, 260, 260, 260, 310} /* TG,NN,G,T */
01238 }
01239 , {{ 310, 310, 290, 310, 290} /* TG,NN,T,E */
01240 , { 310, 310, 290, 310, 290} /* TG,NN,T,A */
01241 , { 290, 290, 270, 290, 270} /* TG,NN,T,C */
01242 , { 310, 310, 290, 310, 290} /* TG,NN,T,G */
01243 , { 290, 290, 270, 290, 270} /* TG,NN,T,T */
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01245 }
01246 }
01247 , {{{ INF, INF, INF, INF, INF} /* AT,NP,E,E */
01248 , { INF, INF, INF, INF, INF} /* AT,NP,E,A */
01249 , { INF, INF, INF, INF, INF} /* AT,NP,E,C */
01250 , { INF, INF, INF, INF, INF} /* AT,NP,E,G */
01251 , { INF, INF, INF, INF, INF} /* AT,NP,E,T */
01252 }
01253 , {{ INF, INF, INF, INF, INF} /* AT,NP,A,E */
01254 , { INF, INF, INF, INF, INF} /* AT,NP,A,A */
01255 , { INF, INF, INF, INF, INF} /* AT,NP,A,C */
01256 , { INF, INF, INF, INF, INF} /* AT,NP,A,G */
01257 , { INF, INF, INF, INF, INF} /* AT,NP,A,T */
01258 }
01259 , {{ INF, INF, INF, INF, INF} /* AT,NP,C,E */
01260 , { INF, INF, INF, INF, INF} /* AT,NP,C,A */
01261 , { INF, INF, INF, INF, INF} /* AT,NP,C,C */
01262 , { INF, INF, INF, INF, INF} /* AT,NP,C,G */
01263 , { INF, INF, INF, INF, INF} /* AT,NP,C,T */
01264 }
01265 , {{ INF, INF, INF, INF, INF} /* AT,NP,G,E */
01266 , { INF, INF, INF, INF, INF} /* AT,NP,G,A */
01267 , { INF, INF, INF, INF, INF} /* AT,NP,G,C */
01268 , { INF, INF, INF, INF, INF} /* AT,NP,G,G */
01269 , { INF, INF, INF, INF, INF} /* AT,NP,G,T */
01270 }
01271 , {{ INF, INF, INF, INF, INF} /* AT,NP,T,E */
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01272 , { INF, INF, INF, INF, INF } /* AT,NP,T,A */
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01274 , { INF, INF, INF, INF, INF } /* AT,NP,T,G */
01275 , { INF, INF, INF, INF, INF } /* AT,NP,T,T */
01276 }
01277 }
01278 , {{ 290, 270, 250, 270, 290 } /* AT,CG,E,E */
01279 , { 270, 270, 230, 270, 220 } /* AT,CG,E,A */
01280 , { 240, 240, 230, 240, 240 } /* AT,CG,E,C */
01281 , { 260, 260, 220, 260, 220 } /* AT,CG,E,G */
01282 , { 290, 220, 250, 230, 290 } /* AT,CG,E,T */
01283 }
01284 , {{ 290, 220, 240, 230, 290 } /* AT,CG,A,E */
01285 , { 210, 140, 160, 150, 210 } /* AT,CG,A,A */
01286 , { 240, 170, 190, 180, 240 } /* AT,CG,A,C */
01287 , { 220, 150, 170, 160, 220 } /* AT,CG,A,G */
01288 , { 290, 220, 240, 230, 290 } /* AT,CG,A,T */
01289 }
01290 , {{ 230, 210, 230, 220, 220 } /* AT,CG,C,E */
01291 , { 210, 190, 210, 200, 200 } /* AT,CG,C,A */
01292 , { 230, 210, 230, 220, 220 } /* AT,CG,C,C */
01293 , { 170, 150, 170, 160, 160 } /* AT,CG,C,G */
01294 , { 210, 190, 210, 200, 200 } /* AT,CG,C,T */
01295 }
01296 , {{ 270, 210, 250, 210, 270 } /* AT,CG,G,E */
01297 , { 220, 160, 200, 160, 220 } /* AT,CG,G,A */
01298 , { 230, 170, 210, 170, 230 } /* AT,CG,G,C */
01299 , { 220, 160, 200, 160, 220 } /* AT,CG,G,G */
01300 , { 270, 210, 250, 210, 270 } /* AT,CG,G,T */
01301 }
01302 , {{ 270, 270, 230, 270, 210 } /* AT,CG,T,E */
01303 , { 270, 270, 230, 270, 210 } /* AT,CG,T,A */
01304 , { 240, 240, 200, 240, 180 } /* AT,CG,T,C */
01305 , { 260, 260, 220, 260, 200 } /* AT,CG,T,G */
01306 , { 220, 220, 180, 220, 160 } /* AT,CG,T,T */
01307 }
01308 }
01309 , {{ 280, 280, 250, 280, 270 } /* AT,GC,E,E */
01310 , { 260, 260, 220, 260, 210 } /* AT,GC,E,A */
01311 , { 240, 240, 220, 240, 230 } /* AT,GC,E,C */
01312 , { 280, 280, 240, 280, 220 } /* AT,GC,E,G */
01313 , { 270, 220, 250, 220, 270 } /* AT,GC,E,T */
01314 }
01315 , {{ 270, 200, 220, 210, 270 } /* AT,GC,A,E */
01316 , { 200, 130, 150, 140, 200 } /* AT,GC,A,A */
01317 , { 230, 160, 180, 170, 230 } /* AT,GC,A,C */
01318 , { 210, 140, 160, 150, 210 } /* AT,GC,A,G */
01319 , { 270, 200, 220, 210, 270 } /* AT,GC,A,T */
01320 }
01321 , {{ 220, 200, 220, 210, 210 } /* AT,GC,C,E */
01322 , { 200, 180, 200, 190, 190 } /* AT,GC,C,A */
01323 , { 220, 200, 220, 210, 210 } /* AT,GC,C,C */
01324 , { 200, 180, 200, 190, 190 } /* AT,GC,C,G */
01325 , { 210, 190, 210, 200, 200 } /* AT,GC,C,T */
01326 }
01327 , {{ 270, 210, 250, 210, 270 } /* AT,GC,G,E */
01328 , { 210, 150, 190, 150, 210 } /* AT,GC,G,A */
01329 , { 180, 120, 160, 120, 180 } /* AT,GC,G,C */
01330 , { 210, 150, 190, 150, 210 } /* AT,GC,G,G */
01331 , { 270, 210, 250, 210, 270 } /* AT,GC,G,T */
01332 }
01333 , {{ 280, 280, 240, 280, 220 } /* AT,GC,T,E */
01334 , { 260, 260, 220, 260, 200 } /* AT,GC,T,A */
01335 , { 240, 240, 200, 240, 180 } /* AT,GC,T,C */
01336 , { 280, 280, 240, 280, 220 } /* AT,GC,T,G */
01337 , { 220, 220, 180, 220, 160 } /* AT,GC,T,T */
01338 }
01339 }
01340 , {{ 310, 310, 290, 310, 310 } /* AT,GT,E,E */
01341 , { 290, 290, 260, 290, 260 } /* AT,GT,E,A */
01342 , { 290, 290, 260, 290, 290 } /* AT,GT,E,C */
01343 , { 310, 310, 270, 310, 260 } /* AT,GT,E,G */
01344 , { 310, 290, 290, 290, 310 } /* AT,GT,E,T */
01345 }
01346 , {{ 310, 240, 260, 250, 310 } /* AT,GT,A,E */
01347 , { 260, 190, 210, 200, 260 } /* AT,GT,A,A */
01348 , { 290, 220, 240, 230, 290 } /* AT,GT,A,C */
01349 , { 260, 190, 210, 200, 260 } /* AT,GT,A,G */
01350 , { 310, 240, 260, 250, 310 } /* AT,GT,A,T */
01351 }
01352 , {{ 260, 240, 260, 250, 250 } /* AT,GT,C,E */
01353 , { 260, 240, 260, 250, 250 } /* AT,GT,C,A */
01354 , { 260, 240, 260, 250, 250 } /* AT,GT,C,C */
01355 , { 240, 220, 240, 230, 230 } /* AT,GT,C,G */
01356 , { 260, 240, 260, 250, 250 } /* AT,GT,C,T */
01357 }
01358 , {{ 310, 250, 290, 250, 310 } /* AT,GT,G,E */

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01359 , { 260, 200, 240, 200, 260} /* AT,GT,G,A */
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01361 , { 260, 200, 240, 200, 260} /* AT,GT,G,G */
01362 , { 310, 250, 290, 250, 310} /* AT,GT,G,T */
01363 }
01364 , { { 310, 310, 270, 310, 250} /* AT,GT,T,E */
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01366 , { 290, 290, 250, 290, 230} /* AT,GT,T,C */
01367 , { 310, 310, 270, 310, 250} /* AT,GT,T,G */
01368 , { 290, 290, 250, 290, 230} /* AT,GT,T,T */
01369 }
01370 }
01371 , { { 310, 310, 290, 310, 310} /* AT,TG,E,E */
01372 , { 310, 310, 270, 310, 260} /* AT,TG,E,A */
01373 , { 290, 290, 260, 290, 290} /* AT,TG,E,C */
01374 , { 310, 310, 270, 310, 260} /* AT,TG,E,G */
01375 , { 310, 290, 290, 290, 310} /* AT,TG,E,T */
01376 }
01377 , { { 310, 240, 260, 250, 310} /* AT,TG,A,E */
01378 , { 260, 190, 210, 200, 260} /* AT,TG,A,A */
01379 , { 290, 220, 240, 230, 290} /* AT,TG,A,C */
01380 , { 260, 190, 210, 200, 260} /* AT,TG,A,G */
01381 , { 310, 240, 260, 250, 310} /* AT,TG,A,T */
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01384 , { 260, 240, 260, 250, 250} /* AT,TG,C,A */
01385 , { 260, 240, 260, 250, 250} /* AT,TG,C,C */
01386 , { 230, 210, 230, 220, 220} /* AT,TG,C,G */
01387 , { 260, 240, 260, 250, 250} /* AT,TG,C,T */
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01389 , { { 310, 250, 290, 250, 310} /* AT,TG,G,E */
01390 , { 260, 200, 240, 200, 260} /* AT,TG,G,A */
01391 , { 280, 220, 260, 220, 280} /* AT,TG,G,C */
01392 , { 260, 200, 240, 200, 260} /* AT,TG,G,G */
01393 , { 310, 250, 290, 250, 310} /* AT,TG,G,T */
01394 }
01395 , { { 310, 310, 270, 310, 250} /* AT,TG,T,E */
01396 , { 310, 310, 270, 310, 250} /* AT,TG,T,A */
01397 , { 290, 290, 250, 290, 230} /* AT,TG,T,C */
01398 , { 310, 310, 270, 310, 250} /* AT,TG,T,G */
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01401 }
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01404 , { 270, 270, 250, 270, 270} /* AT,AT,E,C */
01405 , { 310, 310, 270, 310, 250} /* AT,AT,E,G */
01406 , { 310, 250, 290, 250, 310} /* AT,AT,E,T */
01407 }
01408 , { { 310, 240, 260, 250, 310} /* AT,AT,A,E */
01409 , { 240, 170, 190, 180, 240} /* AT,AT,A,A */
01410 , { 260, 190, 210, 200, 260} /* AT,AT,A,C */
01411 , { 250, 180, 200, 190, 250} /* AT,AT,A,G */
01412 , { 310, 240, 260, 250, 310} /* AT,AT,A,T */
01413 }
01414 , { { 260, 240, 260, 250, 250} /* AT,AT,C,E */
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01416 , { 250, 230, 250, 240, 240} /* AT,AT,C,C */
01417 , { 260, 240, 260, 250, 250} /* AT,AT,C,G */
01418 , { 240, 220, 240, 230, 230} /* AT,AT,C,T */
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01423 , { 250, 190, 230, 190, 250} /* AT,AT,G,G */
01424 , { 310, 250, 290, 250, 310} /* AT,AT,G,T */
01425 }
01426 , { { 310, 310, 270, 310, 250} /* AT,AT,T,E */
01427 , { 310, 310, 270, 310, 250} /* AT,AT,T,A */
01428 , { 270, 270, 230, 270, 210} /* AT,AT,T,C */
01429 , { 310, 310, 270, 310, 250} /* AT,AT,T,G */
01430 , { 250, 250, 210, 250, 190} /* AT,AT,T,T */
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01432 }
01433 , { { { 310, 310, 280, 310, 310} /* AT,TA,E,E */
01434 , { 310, 310, 270, 310, 250} /* AT,TA,E,A */
01435 , { 270, 270, 250, 270, 260} /* AT,TA,E,C */
01436 , { 310, 310, 280, 310, 270} /* AT,TA,E,G */
01437 , { 310, 250, 280, 250, 310} /* AT,TA,E,T */
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01439 , { { 310, 240, 260, 250, 310} /* AT,TA,A,E */
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01441 , { 260, 190, 210, 200, 260} /* AT,TA,A,C */
01442 , { 250, 180, 200, 190, 250} /* AT,TA,A,G */
01443 , { 310, 240, 260, 250, 310} /* AT,TA,A,T */
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01445 , { { 280, 260, 280, 270, 270} /* AT,TA,C,E */
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01454 , { 250, 190, 230, 190, 250} /* AT,TA,G,G */
01455 , { 300, 240, 280, 240, 300} /* AT,TA,G,T */
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01457 , { { 310, 310, 270, 310, 250} /* AT,TA,T,E */
01458 , { 310, 310, 270, 310, 250} /* AT,TA,T,A */
01459 , { 270, 270, 230, 270, 210} /* AT,TA,T,C */
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01461 , { 250, 250, 210, 250, 190} /* AT,TA,T,T */
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01463 }
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01466 , { 290, 290, 260, 290, 290} /* AT,NN,E,C */
01467 , { 310, 310, 280, 310, 270} /* AT,NN,E,G */
01468 , { 310, 290, 290, 290, 310} /* AT,NN,E,T */
01469 }
01470 , { { 310, 240, 260, 250, 310} /* AT,NN,A,E */
01471 , { 260, 190, 210, 200, 260} /* AT,NN,A,A */
01472 , { 290, 220, 240, 230, 290} /* AT,NN,A,C */
01473 , { 260, 190, 210, 200, 260} /* AT,NN,A,G */
01474 , { 310, 240, 260, 250, 310} /* AT,NN,A,T */
01475 }
01476 , { { 280, 260, 280, 270, 270} /* AT,NN,C,E */
01477 , { 260, 240, 260, 250, 250} /* AT,NN,C,A */
01478 , { 260, 240, 260, 250, 250} /* AT,NN,C,C */
01479 , { 280, 260, 280, 270, 270} /* AT,NN,C,G */
01480 , { 260, 240, 260, 250, 250} /* AT,NN,C,T */
01481 }
01482 , { { 310, 250, 290, 250, 310} /* AT,NN,G,E */
01483 , { 260, 200, 240, 200, 260} /* AT,NN,G,A */
01484 , { 280, 220, 260, 220, 280} /* AT,NN,G,C */
01485 , { 260, 200, 240, 200, 260} /* AT,NN,G,G */
01486 , { 310, 250, 290, 250, 310} /* AT,NN,G,T */
01487 }
01488 , { { 310, 310, 270, 310, 250} /* AT,NN,T,E */
01489 , { 310, 310, 270, 310, 250} /* AT,NN,T,A */
01490 , { 290, 290, 250, 290, 230} /* AT,NN,T,C */
01491 , { 310, 310, 270, 310, 250} /* AT,NN,T,G */
01492 , { 290, 290, 250, 290, 230} /* AT,NN,T,T */
01493 }
01494 }
01495 }
01496 , { { { INF, INF, INF, INF, INF} /* TA,NP,E,E */
01497 , { INF, INF, INF, INF, INF} /* TA,NP,E,A */
01498 , { INF, INF, INF, INF, INF} /* TA,NP,E,C */
01499 , { INF, INF, INF, INF, INF} /* TA,NP,E,G */
01500 , { INF, INF, INF, INF, INF} /* TA,NP,E,T */
01501 }
01502 , { { INF, INF, INF, INF, INF} /* TA,NP,A,E */
01503 , { INF, INF, INF, INF, INF} /* TA,NP,A,A */
01504 , { INF, INF, INF, INF, INF} /* TA,NP,A,C */
01505 , { INF, INF, INF, INF, INF} /* TA,NP,A,G */
01506 , { INF, INF, INF, INF, INF} /* TA,NP,A,T */
01507 }
01508 , { { INF, INF, INF, INF, INF} /* TA,NP,C,E */
01509 , { INF, INF, INF, INF, INF} /* TA,NP,C,A */
01510 , { INF, INF, INF, INF, INF} /* TA,NP,C,C */
01511 , { INF, INF, INF, INF, INF} /* TA,NP,C,G */
01512 , { INF, INF, INF, INF, INF} /* TA,NP,C,T */
01513 }
01514 , { { INF, INF, INF, INF, INF} /* TA,NP,G,E */
01515 , { INF, INF, INF, INF, INF} /* TA,NP,G,A */
01516 , { INF, INF, INF, INF, INF} /* TA,NP,G,C */
01517 , { INF, INF, INF, INF, INF} /* TA,NP,G,G */
01518 , { INF, INF, INF, INF, INF} /* TA,NP,G,T */
01519 }
01520 , { { INF, INF, INF, INF, INF} /* TA,NP,T,E */
01521 , { INF, INF, INF, INF, INF} /* TA,NP,T,A */
01522 , { INF, INF, INF, INF, INF} /* TA,NP,T,C */
01523 , { INF, INF, INF, INF, INF} /* TA,NP,T,G */
01524 , { INF, INF, INF, INF, INF} /* TA,NP,T,T */
01525 }
01526 }
01527 , { { { 290, 270, 270, 260, 290} /* TA,CG,E,E */
01528 , { 270, 270, 230, 260, 220} /* TA,CG,E,A */
01529 , { 240, 240, 230, 230, 240} /* TA,CG,E,C */
01530 , { 260, 260, 220, 250, 220} /* TA,CG,E,G */
01531 , { 290, 230, 270, 230, 290} /* TA,CG,E,T */
01532 }

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01533 ,{{ 290, 230, 240, 230, 290} /* TA,CG,A,E */
01534 ,{ 210, 150, 160, 150, 210} /* TA,CG,A,A */
01535 ,{ 240, 180, 190, 180, 240} /* TA,CG,A,C */
01536 ,{ 220, 160, 170, 160, 220} /* TA,CG,A,G */
01537 ,{ 290, 230, 240, 230, 290} /* TA,CG,A,T */
01538 }
01539 ,{{ 230, 210, 230, 210, 220} /* TA,CG,C,E */
01540 ,{ 210, 190, 210, 190, 200} /* TA,CG,C,A */
01541 ,{ 230, 210, 230, 210, 220} /* TA,CG,C,C */
01542 ,{ 170, 150, 170, 150, 160} /* TA,CG,C,G */
01543 ,{ 210, 190, 210, 190, 200} /* TA,CG,C,T */
01544 }
01545 ,{{ 270, 210, 270, 210, 270} /* TA,CG,G,E */
01546 ,{ 220, 160, 220, 160, 220} /* TA,CG,G,A */
01547 ,{ 230, 170, 230, 170, 230} /* TA,CG,G,C */
01548 ,{ 220, 160, 220, 160, 220} /* TA,CG,G,G */
01549 ,{ 270, 210, 270, 210, 270} /* TA,CG,G,T */
01550 }
01551 ,{{ 270, 270, 230, 260, 210} /* TA,CG,T,E */
01552 ,{ 270, 270, 230, 260, 210} /* TA,CG,T,A */
01553 ,{ 240, 240, 200, 230, 180} /* TA,CG,T,C */
01554 ,{ 260, 260, 220, 250, 200} /* TA,CG,T,G */
01555 ,{ 220, 220, 180, 210, 160} /* TA,CG,T,T */
01556 }
01557 }
01558 ,{{{ 280, 280, 270, 270, 270} /* TA,GC,E,E */
01559 ,{ 260, 220, 250, 210} /* TA,GC,E,A */
01560 ,{ 240, 240, 220, 230, 230} /* TA,GC,E,C */
01561 ,{ 280, 280, 240, 270, 220} /* TA,GC,E,G */
01562 ,{ 270, 220, 270, 210, 270} /* TA,GC,E,T */
01563 }
01564 ,{{{ 270, 210, 220, 210, 270} /* TA,GC,A,E */
01565 ,{ 200, 140, 150, 140, 200} /* TA,GC,A,A */
01566 ,{ 230, 170, 180, 170, 230} /* TA,GC,A,C */
01567 ,{ 210, 150, 160, 150, 210} /* TA,GC,A,G */
01568 ,{ 270, 210, 220, 210, 270} /* TA,GC,A,T */
01569 }
01570 ,{{{ 220, 200, 220, 200, 210} /* TA,GC,C,E */
01571 ,{ 200, 180, 200, 180, 190} /* TA,GC,C,A */
01572 ,{ 220, 200, 220, 200, 210} /* TA,GC,C,C */
01573 ,{ 200, 180, 200, 180, 190} /* TA,GC,C,G */
01574 ,{ 210, 190, 210, 190, 200} /* TA,GC,C,T */
01575 }
01576 ,{{{ 270, 210, 270, 210, 270} /* TA,GC,G,E */
01577 ,{ 210, 150, 210, 150, 210} /* TA,GC,G,A */
01578 ,{ 180, 120, 180, 120, 180} /* TA,GC,G,C */
01579 ,{ 210, 150, 210, 150, 210} /* TA,GC,G,G */
01580 ,{ 270, 210, 270, 210, 270} /* TA,GC,G,T */
01581 }
01582 ,{{{ 280, 280, 240, 270, 220} /* TA,GC,T,E */
01583 ,{ 260, 260, 220, 250, 200} /* TA,GC,T,A */
01584 ,{ 240, 240, 200, 230, 180} /* TA,GC,T,C */
01585 ,{ 280, 280, 240, 270, 220} /* TA,GC,T,G */
01586 ,{ 220, 220, 180, 210, 160} /* TA,GC,T,T */
01587 }
01588 }
01589 ,{{{ 310, 310, 310, 300, 310} /* TA,GT,E,E */
01590 ,{ 290, 290, 260, 280, 260} /* TA,GT,E,A */
01591 ,{ 290, 290, 270, 280, 290} /* TA,GT,E,C */
01592 ,{ 310, 310, 270, 300, 260} /* TA,GT,E,G */
01593 ,{ 310, 290, 310, 280, 310} /* TA,GT,E,T */
01594 }
01595 ,{{{ 310, 250, 260, 250, 310} /* TA,GT,A,E */
01596 ,{ 260, 200, 210, 200, 260} /* TA,GT,A,A */
01597 ,{ 290, 230, 240, 230, 290} /* TA,GT,A,C */
01598 ,{ 260, 200, 210, 200, 260} /* TA,GT,A,G */
01599 ,{ 310, 250, 260, 250, 310} /* TA,GT,A,T */
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01601 ,{{{ 260, 240, 260, 240, 250} /* TA,GT,C,E */
01602 ,{ 260, 240, 260, 240, 250} /* TA,GT,C,A */
01603 ,{ 260, 240, 260, 240, 250} /* TA,GT,C,C */
01604 ,{ 240, 220, 240, 220, 230} /* TA,GT,C,G */
01605 ,{ 260, 240, 260, 240, 250} /* TA,GT,C,T */
01606 }
01607 ,{{{ 310, 250, 310, 250, 310} /* TA,GT,G,E */
01608 ,{ 260, 200, 260, 200, 260} /* TA,GT,G,A */
01609 ,{ 270, 210, 270, 210, 270} /* TA,GT,G,C */
01610 ,{ 260, 200, 260, 200, 260} /* TA,GT,G,G */
01611 ,{ 310, 250, 310, 250, 310} /* TA,GT,G,T */
01612 }
01613 ,{{{ 310, 310, 270, 300, 250} /* TA,GT,T,E */
01614 ,{ 290, 290, 250, 280, 230} /* TA,GT,T,A */
01615 ,{ 290, 290, 250, 280, 230} /* TA,GT,T,C */
01616 ,{ 310, 310, 270, 300, 250} /* TA,GT,T,G */
01617 ,{ 290, 290, 250, 280, 230} /* TA,GT,T,T */
01618 }
01619 }

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01621 ,{ 310, 310, 270, 300, 260} /* TA,TG,E,A */
01622 ,{ 290, 290, 280, 280, 290} /* TA,TG,E,C */
01623 ,{ 310, 310, 270, 300, 260} /* TA,TG,E,G */
01624 ,{ 310, 290, 310, 280, 310} /* TA,TG,E,T */
01625 }
01626 ,{{{ 310, 250, 260, 250, 310} /* TA,TG,A,E */
01627 ,{ 260, 200, 210, 200, 260} /* TA,TG,A,A */
01628 ,{ 290, 230, 240, 230, 290} /* TA,TG,A,C */
01629 ,{ 260, 200, 210, 200, 260} /* TA,TG,A,G */
01630 ,{ 310, 250, 260, 250, 310} /* TA,TG,A,T */
01631 }
01632 ,{{{ 260, 240, 260, 240, 250} /* TA,TG,C,E */
01633 ,{ 260, 240, 260, 240, 250} /* TA,TG,C,A */
01634 ,{ 260, 240, 260, 240, 250} /* TA,TG,C,C */
01635 ,{ 230, 210, 230, 210, 220} /* TA,TG,C,G */
01636 ,{ 260, 240, 260, 240, 250} /* TA,TG,C,T */
01637 }
01638 ,{{{ 310, 250, 310, 250, 310} /* TA,TG,G,E */
01639 ,{ 260, 200, 260, 200, 260} /* TA,TG,G,A */
01640 ,{ 280, 220, 280, 220, 280} /* TA,TG,G,C */
01641 ,{ 260, 200, 260, 200, 260} /* TA,TG,G,G */
01642 ,{ 310, 250, 310, 250, 310} /* TA,TG,G,T */
01643 }
01644 ,{{{ 310, 310, 270, 300, 250} /* TA,TG,T,E */
01645 ,{ 310, 310, 270, 300, 250} /* TA,TG,T,A */
01646 ,{ 290, 290, 250, 280, 230} /* TA,TG,T,C */
01647 ,{ 310, 310, 270, 300, 250} /* TA,TG,T,G */
01648 ,{ 290, 290, 250, 280, 230} /* TA,TG,T,T */
01649 }
01650 }
01651 ,{{{ 310, 310, 310, 300, 310} /* TA,AT,E,E */
01652 ,{ 310, 310, 270, 300, 250} /* TA,AT,E,A */
01653 ,{ 270, 270, 270, 260, 270} /* TA,AT,E,C */
01654 ,{ 310, 310, 270, 300, 250} /* TA,AT,E,G */
01655 ,{ 310, 250, 310, 250, 310} /* TA,AT,E,T */
01656 }
01657 ,{{{ 310, 250, 260, 250, 310} /* TA,AT,A,E */
01658 ,{ 240, 180, 190, 180, 240} /* TA,AT,A,A */
01659 ,{ 260, 200, 210, 200, 260} /* TA,AT,A,C */
01660 ,{ 250, 190, 200, 190, 250} /* TA,AT,A,G */
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01662 }
01663 ,{{{ 260, 240, 260, 240, 250} /* TA,AT,C,E */
01664 ,{ 230, 210, 230, 210, 220} /* TA,AT,C,A */
01665 ,{ 250, 230, 250, 230, 240} /* TA,AT,C,C */
01666 ,{ 260, 240, 260, 240, 250} /* TA,AT,C,G */
01667 ,{ 240, 220, 240, 220, 230} /* TA,AT,C,T */
01668 }
01669 ,{{{ 310, 250, 310, 250, 310} /* TA,AT,G,E */
01670 ,{ 250, 190, 250, 190, 250} /* TA,AT,G,A */
01671 ,{ 270, 210, 270, 210, 270} /* TA,AT,G,C */
01672 ,{ 250, 190, 250, 190, 250} /* TA,AT,G,G */
01673 ,{ 310, 250, 310, 250, 310} /* TA,AT,G,T */
01674 }
01675 ,{{{ 310, 310, 270, 300, 250} /* TA,AT,T,E */
01676 ,{ 310, 310, 270, 300, 250} /* TA,AT,T,A */
01677 ,{ 270, 270, 230, 260, 210} /* TA,AT,T,C */
01678 ,{ 310, 310, 270, 300, 250} /* TA,AT,T,G */
01679 ,{ 250, 250, 210, 240, 190} /* TA,AT,T,T */
01680 }
01681 }
01682 ,{{{ 310, 310, 300, 300, 310} /* TA,TA,E,E */
01683 ,{ 310, 310, 270, 300, 250} /* TA,TA,E,A */
01684 ,{ 270, 270, 260, 260, 260} /* TA,TA,E,C */
01685 ,{ 310, 310, 280, 300, 270} /* TA,TA,E,G */
01686 ,{ 310, 250, 300, 250, 310} /* TA,TA,E,T */
01687 }
01688 ,{{{ 310, 250, 260, 250, 310} /* TA,TA,A,E */
01689 ,{ 250, 190, 200, 190, 250} /* TA,TA,A,A */
01690 ,{ 260, 200, 210, 200, 260} /* TA,TA,A,C */
01691 ,{ 250, 190, 200, 190, 250} /* TA,TA,A,G */
01692 ,{ 310, 250, 260, 250, 310} /* TA,TA,A,T */
01693 }
01694 ,{{{ 280, 260, 280, 260, 270} /* TA,TA,C,E */
01695 ,{ 230, 210, 230, 210, 220} /* TA,TA,C,A */
01696 ,{ 250, 230, 250, 230, 240} /* TA,TA,C,C */
01697 ,{ 280, 260, 280, 260, 270} /* TA,TA,C,G */
01698 ,{ 240, 220, 240, 220, 230} /* TA,TA,C,T */
01699 }
01700 ,{{{ 300, 240, 300, 240, 300} /* TA,TA,G,E */
01701 ,{ 250, 190, 250, 190, 250} /* TA,TA,G,A */
01702 ,{ 260, 200, 260, 200, 260} /* TA,TA,G,C */
01703 ,{ 250, 190, 250, 190, 250} /* TA,TA,G,G */
01704 ,{ 300, 240, 300, 240, 300} /* TA,TA,G,T */
01705 }
01706 ,{{{ 310, 310, 270, 300, 250} /* TA,TA,T,E */

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01709 , { 310, 310, 270, 300, 250} /* TA,TA,T,G */
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01712 }
01713 , {{ 310, 310, 310, 300, 310} /* TA,NN,E,E */
01714 , { 310, 310, 270, 300, 260} /* TA,NN,E,A */
01715 , { 290, 290, 280, 280, 290} /* TA,NN,E,C */
01716 , { 310, 310, 280, 300, 270} /* TA,NN,E,G */
01717 , { 310, 290, 310, 280, 310} /* TA,NN,E,T */
01718 }
01719 , {{ 310, 250, 260, 250, 310} /* TA,NN,A,E */
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01721 , { 290, 230, 240, 230, 290} /* TA,NN,A,C */
01722 , { 260, 200, 210, 200, 260} /* TA,NN,A,G */
01723 , { 310, 250, 260, 250, 310} /* TA,NN,A,T */
01724 }
01725 , {{ 280, 260, 280, 260, 270} /* TA,NN,C,E */
01726 , { 260, 240, 260, 240, 250} /* TA,NN,C,A */
01727 , { 260, 240, 260, 240, 250} /* TA,NN,C,C */
01728 , { 280, 260, 280, 260, 270} /* TA,NN,C,G */
01729 , { 260, 240, 260, 240, 250} /* TA,NN,C,T */
01730 }
01731 , {{ 310, 250, 310, 250, 310} /* TA,NN,G,E */
01732 , { 260, 200, 260, 200, 260} /* TA,NN,G,A */
01733 , { 280, 220, 280, 220, 280} /* TA,NN,G,C */
01734 , { 260, 200, 260, 200, 260} /* TA,NN,G,G */
01735 , { 310, 250, 310, 250, 310} /* TA,NN,G,T */
01736 }
01737 , {{ 310, 310, 270, 300, 250} /* TA,NN,T,E */
01738 , { 310, 310, 270, 300, 250} /* TA,NN,T,A */
01739 , { 290, 290, 250, 280, 230} /* TA,NN,T,C */
01740 , { 310, 310, 270, 300, 250} /* TA,NN,T,G */
01741 , { 290, 290, 250, 280, 230} /* TA,NN,T,T */
01742 }
01743 }
01744 }
01745 , {{{ INF, INF, INF, INF, INF} /* NN,NP,E,E */
01746 , { INF, INF, INF, INF, INF} /* NN,NP,E,A */
01747 , { INF, INF, INF, INF, INF} /* NN,NP,E,C */
01748 , { INF, INF, INF, INF, INF} /* NN,NP,E,G */
01749 , { INF, INF, INF, INF, INF} /* NN,NP,E,T */
01750 }
01751 , {{ INF, INF, INF, INF, INF} /* NN,NP,A,E */
01752 , { INF, INF, INF, INF, INF} /* NN,NP,A,A */
01753 , { INF, INF, INF, INF, INF} /* NN,NP,A,C */
01754 , { INF, INF, INF, INF, INF} /* NN,NP,A,G */
01755 , { INF, INF, INF, INF, INF} /* NN,NP,A,T */
01756 }
01757 , {{ INF, INF, INF, INF, INF} /* NN,NP,C,E */
01758 , { INF, INF, INF, INF, INF} /* NN,NP,C,A */
01759 , { INF, INF, INF, INF, INF} /* NN,NP,C,C */
01760 , { INF, INF, INF, INF, INF} /* NN,NP,C,G */
01761 , { INF, INF, INF, INF, INF} /* NN,NP,C,T */
01762 }
01763 , {{ INF, INF, INF, INF, INF} /* NN,NP,G,E */
01764 , { INF, INF, INF, INF, INF} /* NN,NP,G,A */
01765 , { INF, INF, INF, INF, INF} /* NN,NP,G,C */
01766 , { INF, INF, INF, INF, INF} /* NN,NP,G,G */
01767 , { INF, INF, INF, INF, INF} /* NN,NP,G,T */
01768 }
01769 , {{ INF, INF, INF, INF, INF} /* NN,NP,T,E */
01770 , { INF, INF, INF, INF, INF} /* NN,NP,T,A */
01771 , { INF, INF, INF, INF, INF} /* NN,NP,T,C */
01772 , { INF, INF, INF, INF, INF} /* NN,NP,T,G */
01773 , { INF, INF, INF, INF, INF} /* NN,NP,T,T */
01774 }
01775 }
01776 , {{{ 290, 270, 270, 270, 290} /* NN,CG,E,E */
01777 , { 270, 270, 250, 270, 250} /* NN,CG,E,A */
01778 , { 240, 240, 240, 240, 240} /* NN,CG,E,C */
01779 , { 260, 260, 240, 260, 240} /* NN,CG,E,G */
01780 , { 290, 240, 270, 240, 290} /* NN,CG,E,T */
01781 }
01782 , {{ 290, 240, 270, 240, 290} /* NN,CG,A,E */
01783 , { 210, 160, 190, 160, 210} /* NN,CG,A,A */
01784 , { 240, 190, 220, 190, 240} /* NN,CG,A,C */
01785 , { 220, 170, 200, 170, 220} /* NN,CG,A,G */
01786 , { 290, 240, 270, 240, 290} /* NN,CG,A,T */
01787 }
01788 , {{ 240, 240, 240, 230, 240} /* NN,CG,C,E */
01789 , { 220, 220, 220, 210, 220} /* NN,CG,C,A */
01790 , { 240, 240, 240, 230, 240} /* NN,CG,C,C */
01791 , { 180, 180, 180, 170, 180} /* NN,CG,C,G */
01792 , { 220, 220, 220, 210, 220} /* NN,CG,C,T */
01793 }
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01794 ,{{ 270, 220, 270, 220, 270} /* NN,CG,G,E */
01795 ,{ 220, 170, 220, 170, 220} /* NN,CG,G,A */
01796 ,{ 230, 180, 230, 180, 230} /* NN,CG,G,C */
01797 ,{ 220, 170, 220, 170, 220} /* NN,CG,G,G */
01798 ,{ 270, 220, 270, 220, 270} /* NN,CG,G,T */
01799 }
01800 ,{{ 270, 270, 250, 270, 250} /* NN,CG,T,E */
01801 ,{ 270, 270, 250, 270, 250} /* NN,CG,T,A */
01802 ,{ 240, 240, 220, 240, 220} /* NN,CG,T,C */
01803 ,{ 260, 260, 240, 260, 240} /* NN,CG,T,G */
01804 ,{ 220, 220, 200, 220, 200} /* NN,CG,T,T */
01805 }
01806 }
01807 ,{{{ 280, 280, 270, 280, 270} /* NN,GC,E,E */
01808 ,{ 260, 260, 240, 260, 240} /* NN,GC,E,A */
01809 ,{ 240, 240, 230, 240, 230} /* NN,GC,E,C */
01810 ,{ 280, 280, 260, 280, 260} /* NN,GC,E,G */
01811 ,{ 270, 220, 270, 220, 270} /* NN,GC,E,T */
01812 }
01813 ,{{{ 270, 220, 250, 220, 270} /* NN,GC,A,E */
01814 ,{ 200, 150, 180, 150, 200} /* NN,GC,A,A */
01815 ,{ 230, 180, 210, 180, 230} /* NN,GC,A,C */
01816 ,{ 210, 160, 190, 160, 210} /* NN,GC,A,G */
01817 ,{ 270, 220, 250, 220, 270} /* NN,GC,A,T */
01818 }
01819 ,{{{ 230, 230, 230, 220, 230} /* NN,GC,C,E */
01820 ,{ 210, 210, 210, 200, 210} /* NN,GC,C,A */
01821 ,{ 230, 230, 230, 220, 230} /* NN,GC,C,C */
01822 ,{ 210, 210, 210, 200, 210} /* NN,GC,C,G */
01823 ,{ 220, 220, 220, 210, 220} /* NN,GC,C,T */
01824 }
01825 ,{{{ 270, 220, 270, 220, 270} /* NN,GC,G,E */
01826 ,{ 210, 160, 210, 160, 210} /* NN,GC,G,A */
01827 ,{ 180, 130, 180, 130, 180} /* NN,GC,G,C */
01828 ,{ 210, 160, 210, 160, 210} /* NN,GC,G,G */
01829 ,{ 270, 220, 270, 220, 270} /* NN,GC,G,T */
01830 }
01831 ,{{{ 280, 280, 260, 280, 260} /* NN,GC,T,E */
01832 ,{ 260, 260, 240, 260, 240} /* NN,GC,T,A */
01833 ,{ 240, 240, 220, 240, 220} /* NN,GC,T,C */
01834 ,{ 280, 280, 260, 280, 260} /* NN,GC,T,G */
01835 ,{ 220, 220, 200, 220, 200} /* NN,GC,T,T */
01836 }
01837 }
01838 ,{{{ 310, 310, 310, 310, 310} /* NN,GT,E,E */
01839 ,{ 290, 290, 270, 290, 270} /* NN,GT,E,A */
01840 ,{ 290, 290, 270, 290, 290} /* NN,GT,E,C */
01841 ,{ 310, 310, 290, 310, 290} /* NN,GT,E,G */
01842 ,{ 310, 290, 310, 290, 310} /* NN,GT,E,T */
01843 }
01844 ,{{{ 310, 260, 290, 260, 310} /* NN,GT,A,E */
01845 ,{ 260, 210, 240, 210, 260} /* NN,GT,A,A */
01846 ,{ 290, 240, 270, 240, 290} /* NN,GT,A,C */
01847 ,{ 260, 210, 240, 210, 260} /* NN,GT,A,G */
01848 ,{ 310, 260, 290, 260, 310} /* NN,GT,A,T */
01849 }
01850 ,{{{ 270, 270, 270, 260, 270} /* NN,GT,C,E */
01851 ,{ 270, 270, 270, 260, 270} /* NN,GT,C,A */
01852 ,{ 270, 270, 270, 260, 270} /* NN,GT,C,C */
01853 ,{ 250, 250, 250, 240, 250} /* NN,GT,C,G */
01854 ,{ 270, 270, 270, 260, 270} /* NN,GT,C,T */
01855 }
01856 ,{{{ 310, 260, 310, 260, 310} /* NN,GT,G,E */
01857 ,{ 260, 210, 260, 210, 260} /* NN,GT,G,A */
01858 ,{ 270, 220, 270, 220, 270} /* NN,GT,G,C */
01859 ,{ 260, 210, 260, 210, 260} /* NN,GT,G,G */
01860 ,{ 310, 260, 310, 260, 310} /* NN,GT,G,T */
01861 }
01862 ,{{{ 310, 310, 290, 310, 290} /* NN,GT,T,E */
01863 ,{ 290, 290, 270, 290, 270} /* NN,GT,T,A */
01864 ,{ 290, 290, 270, 290, 270} /* NN,GT,T,C */
01865 ,{ 310, 310, 290, 310, 290} /* NN,GT,T,G */
01866 ,{ 290, 290, 270, 290, 270} /* NN,GT,T,T */
01867 }
01868 }
01869 ,{{{ 310, 310, 310, 310, 310} /* NN,TG,E,E */
01870 ,{ 310, 290, 310, 290, 290} /* NN,TG,E,A */
01871 ,{ 290, 290, 280, 290, 290} /* NN,TG,E,C */
01872 ,{ 310, 310, 290, 310, 290} /* NN,TG,E,G */
01873 ,{ 310, 290, 310, 290, 310} /* NN,TG,E,T */
01874 }
01875 ,{{{ 310, 260, 290, 260, 310} /* NN,TG,A,E */
01876 ,{ 260, 210, 240, 210, 260} /* NN,TG,A,A */
01877 ,{ 290, 240, 270, 240, 290} /* NN,TG,A,C */
01878 ,{ 260, 210, 240, 210, 260} /* NN,TG,A,G */
01879 ,{ 310, 260, 290, 260, 310} /* NN,TG,A,T */
01880 }

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```
01881 ,{{ 270, 270, 270, 260, 270} /* NN,TG,C,E */
01882 ,{ 270, 270, 270, 260, 270} /* NN,TG,C,A */
01883 ,{ 270, 270, 270, 260, 270} /* NN,TG,C,C */
01884 ,{ 240, 240, 240, 230, 240} /* NN,TG,C,G */
01885 ,{ 270, 270, 270, 260, 270} /* NN,TG,C,T */
01886 }
01887 ,{{ 310, 260, 310, 260, 310} /* NN,TG,G,E */
01888 ,{ 260, 210, 260, 210, 260} /* NN,TG,G,A */
01889 ,{ 280, 230, 280, 230, 280} /* NN,TG,G,C */
01890 ,{ 260, 210, 260, 210, 260} /* NN,TG,G,G */
01891 ,{ 310, 260, 310, 260, 310} /* NN,TG,G,T */
01892 }
01893 ,{{ 310, 310, 290, 310, 290} /* NN,TG,T,E */
01894 ,{ 310, 310, 290, 310, 290} /* NN,TG,T,A */
01895 ,{ 290, 290, 270, 290, 270} /* NN,TG,T,C */
01896 ,{ 310, 310, 290, 310, 290} /* NN,TG,T,G */
01897 ,{ 290, 290, 270, 290, 270} /* NN,TG,T,T */
01898 }
01899 }
01900 ,{{{ 310, 310, 310, 310, 310} /* NN,AT,E,E */
01901 ,{ 310, 310, 290, 310, 290} /* NN,AT,E,A */
01902 ,{ 270, 270, 270, 270, 270} /* NN,AT,E,C */
01903 ,{ 310, 310, 290, 310, 290} /* NN,AT,E,G */
01904 ,{ 310, 260, 310, 260, 310} /* NN,AT,E,T */
01905 }
01906 ,{{ 310, 260, 290, 260, 310} /* NN,AT,A,E */
01907 ,{ 240, 190, 220, 190, 240} /* NN,AT,A,A */
01908 ,{ 260, 210, 240, 210, 260} /* NN,AT,A,C */
01909 ,{ 250, 200, 230, 200, 250} /* NN,AT,A,G */
01910 ,{ 310, 260, 290, 260, 310} /* NN,AT,A,T */
01911 }
01912 ,{{ 270, 270, 270, 260, 270} /* NN,AT,C,E */
01913 ,{ 240, 240, 240, 230, 240} /* NN,AT,C,A */
01914 ,{ 260, 260, 260, 250, 260} /* NN,AT,C,C */
01915 ,{ 270, 270, 270, 260, 270} /* NN,AT,C,G */
01916 ,{ 250, 250, 250, 240, 250} /* NN,AT,C,T */
01917 }
01918 ,{{ 310, 260, 310, 260, 310} /* NN,AT,G,E */
01919 ,{ 250, 200, 250, 200, 250} /* NN,AT,G,A */
01920 ,{ 270, 220, 270, 220, 270} /* NN,AT,G,C */
01921 ,{ 250, 200, 250, 200, 250} /* NN,AT,G,G */
01922 ,{ 310, 260, 310, 260, 310} /* NN,AT,G,T */
01923 }
01924 ,{{ 310, 310, 290, 310, 290} /* NN,AT,T,E */
01925 ,{ 310, 310, 290, 310, 290} /* NN,AT,T,A */
01926 ,{ 270, 270, 250, 270, 250} /* NN,AT,T,C */
01927 ,{ 310, 310, 290, 310, 290} /* NN,AT,T,G */
01928 ,{ 250, 250, 230, 250, 230} /* NN,AT,T,T */
01929 }
01930 }
01931 ,{{{ 310, 310, 300, 310, 310} /* NN,TA,E,E */
01932 ,{ 310, 310, 290, 310, 290} /* NN,TA,E,A */
01933 ,{ 270, 270, 260, 270, 260} /* NN,TA,E,C */
01934 ,{ 310, 310, 290, 310, 290} /* NN,TA,E,G */
01935 ,{ 310, 260, 300, 260, 310} /* NN,TA,E,T */
01936 }
01937 ,{{ 310, 260, 290, 260, 310} /* NN,TA,A,E */
01938 ,{ 250, 200, 230, 200, 250} /* NN,TA,A,A */
01939 ,{ 260, 210, 240, 210, 260} /* NN,TA,A,C */
01940 ,{ 250, 200, 230, 200, 250} /* NN,TA,A,G */
01941 ,{ 310, 260, 290, 260, 310} /* NN,TA,A,T */
01942 }
01943 ,{{ 290, 290, 290, 280, 290} /* NN,TA,C,E */
01944 ,{ 240, 240, 240, 230, 240} /* NN,TA,C,A */
01945 ,{ 260, 260, 260, 250, 260} /* NN,TA,C,C */
01946 ,{ 290, 290, 290, 280, 290} /* NN,TA,C,G */
01947 ,{ 250, 250, 250, 240, 250} /* NN,TA,C,T */
01948 }
01949 ,{{ 300, 250, 300, 250, 300} /* NN,TA,G,E */
01950 ,{ 250, 200, 250, 200, 250} /* NN,TA,G,A */
01951 ,{ 260, 210, 260, 210, 260} /* NN,TA,G,C */
01952 ,{ 250, 200, 250, 200, 250} /* NN,TA,G,G */
01953 ,{ 300, 250, 300, 250, 300} /* NN,TA,G,T */
01954 }
01955 ,{{ 310, 310, 290, 310, 290} /* NN,TA,T,E */
01956 ,{ 310, 310, 290, 310, 290} /* NN,TA,T,A */
01957 ,{ 270, 270, 250, 270, 250} /* NN,TA,T,C */
01958 ,{ 310, 310, 290, 310, 290} /* NN,TA,T,G */
01959 ,{ 250, 250, 230, 250, 230} /* NN,TA,T,T */
01960 }
01961 }
01962 ,{{{ 310, 310, 310, 310, 310} /* NN,NN,E,E */
01963 ,{ 310, 310, 290, 310, 290} /* NN,NN,E,A */
01964 ,{ 290, 290, 280, 290, 290} /* NN,NN,E,C */
01965 ,{ 310, 310, 290, 310, 290} /* NN,NN,E,G */
01966 ,{ 310, 290, 310, 290, 310} /* NN,NN,E,T */
01967 }
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```

01968 ,{{ 310, 260, 290, 260, 310} /* NN,NN,A,E */
01969 ,{ 260, 210, 240, 210, 260} /* NN,NN,A,A */
01970 ,{ 290, 240, 270, 240, 290} /* NN,NN,A,C */
01971 ,{ 260, 210, 240, 210, 260} /* NN,NN,A,G */
01972 ,{ 310, 260, 290, 260, 310} /* NN,NN,A,T */
01973 }
01974 ,{{ 290, 290, 290, 280, 290} /* NN,NN,C,E */
01975 ,{ 270, 270, 270, 260, 270} /* NN,NN,C,A */
01976 ,{ 270, 270, 270, 260, 270} /* NN,NN,C,C */
01977 ,{ 290, 290, 290, 280, 290} /* NN,NN,C,G */
01978 ,{ 270, 270, 270, 260, 270} /* NN,NN,C,T */
01979 }
01980 ,{{ 310, 260, 310, 260, 310} /* NN,NN,G,E */
01981 ,{ 260, 210, 260, 210, 260} /* NN,NN,G,A */
01982 ,{ 280, 230, 280, 230, 280} /* NN,NN,G,C */
01983 ,{ 260, 210, 260, 210, 260} /* NN,NN,G,G */
01984 ,{ 310, 260, 310, 260, 310} /* NN,NN,G,T */
01985 }
01986 ,{{ 310, 310, 290, 310, 290} /* NN,NN,T,E */
01987 ,{ 310, 310, 290, 310, 290} /* NN,NN,T,A */
01988 ,{ 290, 290, 270, 290, 270} /* NN,NN,T,C */
01989 ,{ 310, 310, 290, 310, 290} /* NN,NN,T,G */
01990 ,{ 290, 290, 270, 290, 270} /* NN,NN,T,T */
01991 }
01992 }
01993 };;
01994

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11.96 int121_RD.h

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00003 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,A */
00004 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,C */
00005 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,G */
00006 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,U/T */
00007 }
00008 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,E */
00009 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,A */
00010 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,C */
00011 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,G */
00012 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,U/T */
00013 }
00014 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,E */
00015 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,A */
00016 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,C */
00017 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,G */
00018 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,U/T */
00019 }
00020 ,{{ INF, INF, INF, INF, INF} /* NP,NP,G,E */
00021 ,{{ INF, INF, INF, INF, INF} /* NP,NP,G,A */
00022 ,{{ INF, INF, INF, INF, INF} /* NP,NP,G,C */
00023 ,{{ INF, INF, INF, INF, INF} /* NP,NP,G,G */
00024 ,{{ INF, INF, INF, INF, INF} /* NP,NP,G,U/T */
00025 }
00026 ,{{ INF, INF, INF, INF, INF} /* NP,NP,U/T,E */
00027 ,{{ INF, INF, INF, INF, INF} /* NP,NP,U/T,A */
00028 ,{{ INF, INF, INF, INF, INF} /* NP,NP,U/T,C */
00029 ,{{ INF, INF, INF, INF, INF} /* NP,NP,U/T,G */
00030 ,{{ INF, INF, INF, INF, INF} /* NP,NP,U/T,U/T */
00031 }
00032 }
00033 ,{{{{ INF, INF, INF, INF, INF} /* NP,CG,E,E */
00034 ,{{ INF, INF, INF, INF, INF} /* NP,CG,E,A */
00035 ,{{ INF, INF, INF, INF, INF} /* NP,CG,E,C */
00036 ,{{ INF, INF, INF, INF, INF} /* NP,CG,E,G */
00037 ,{{ INF, INF, INF, INF, INF} /* NP,CG,E,U/T */
00038 }
00039 ,{{ INF, INF, INF, INF, INF} /* NP,CG,A,E */
00040 ,{{ INF, INF, INF, INF, INF} /* NP,CG,A,A */
00041 ,{{ INF, INF, INF, INF, INF} /* NP,CG,A,C */
00042 ,{{ INF, INF, INF, INF, INF} /* NP,CG,A,G */
00043 ,{{ INF, INF, INF, INF, INF} /* NP,CG,A,U/T */
00044 }
00045 ,{{ INF, INF, INF, INF, INF} /* NP,CG,C,E */
00046 ,{{ INF, INF, INF, INF, INF} /* NP,CG,C,A */
00047 ,{{ INF, INF, INF, INF, INF} /* NP,CG,C,C */
00048 ,{{ INF, INF, INF, INF, INF} /* NP,CG,C,G */
00049 ,{{ INF, INF, INF, INF, INF} /* NP,CG,C,U/T */
00050 }
00051 ,{{ INF, INF, INF, INF, INF} /* NP,CG,G,E */
00052 ,{{ INF, INF, INF, INF, INF} /* NP,CG,G,A */
00053 ,{{ INF, INF, INF, INF, INF} /* NP,CG,G,C */
00054 ,{{ INF, INF, INF, INF, INF} /* NP,CG,G,G */
00055 ,{{ INF, INF, INF, INF, INF} /* NP,CG,G,U/T */

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00056     }
00057     ,{{ INF, INF, INF, INF, INF} /* NP,CG,U/T,E */
00058     ,{ INF, INF, INF, INF, INF} /* NP,CG,U/T,A */
00059     ,{ INF, INF, INF, INF, INF} /* NP,CG,U/T,C */
00060     ,{ INF, INF, INF, INF, INF} /* NP,CG,U/T,G */
00061     ,{ INF, INF, INF, INF, INF} /* NP,CG,U/T,U/T */
00062     }
00063     }
00064     ,{{{ INF, INF, INF, INF, INF} /* NP,GC,E,E */
00065     ,{ INF, INF, INF, INF, INF} /* NP,GC,E,A */
00066     ,{ INF, INF, INF, INF, INF} /* NP,GC,E,C */
00067     ,{ INF, INF, INF, INF, INF} /* NP,GC,E,G */
00068     ,{ INF, INF, INF, INF, INF} /* NP,GC,E,U/T */
00069     }
00070     ,{{{ INF, INF, INF, INF, INF} /* NP,GC,A,E */
00071     ,{ INF, INF, INF, INF, INF} /* NP,GC,A,A */
00072     ,{ INF, INF, INF, INF, INF} /* NP,GC,A,C */
00073     ,{ INF, INF, INF, INF, INF} /* NP,GC,A,G */
00074     ,{ INF, INF, INF, INF, INF} /* NP,GC,A,U/T */
00075     }
00076     ,{{{ INF, INF, INF, INF, INF} /* NP,GC,C,E */
00077     ,{ INF, INF, INF, INF, INF} /* NP,GC,C,A */
00078     ,{ INF, INF, INF, INF, INF} /* NP,GC,C,C */
00079     ,{ INF, INF, INF, INF, INF} /* NP,GC,C,G */
00080     ,{ INF, INF, INF, INF, INF} /* NP,GC,C,U/T */
00081     }
00082     ,{{{ INF, INF, INF, INF, INF} /* NP,GC,G,E */
00083     ,{ INF, INF, INF, INF, INF} /* NP,GC,G,A */
00084     ,{ INF, INF, INF, INF, INF} /* NP,GC,G,C */
00085     ,{ INF, INF, INF, INF, INF} /* NP,GC,G,G */
00086     ,{ INF, INF, INF, INF, INF} /* NP,GC,G,U/T */
00087     }
00088     ,{{{ INF, INF, INF, INF, INF} /* NP,GC,U/T,E */
00089     ,{ INF, INF, INF, INF, INF} /* NP,GC,U/T,A */
00090     ,{ INF, INF, INF, INF, INF} /* NP,GC,U/T,C */
00091     ,{ INF, INF, INF, INF, INF} /* NP,GC,U/T,G */
00092     ,{ INF, INF, INF, INF, INF} /* NP,GC,U/T,U/T */
00093     }
00094     }
00095     ,{{{ INF, INF, INF, INF, INF} /* NP,GT,E,E */
00096     ,{ INF, INF, INF, INF, INF} /* NP,GT,E,A */
00097     ,{ INF, INF, INF, INF, INF} /* NP,GT,E,C */
00098     ,{ INF, INF, INF, INF, INF} /* NP,GT,E,G */
00099     ,{ INF, INF, INF, INF, INF} /* NP,GT,E,U/T */
00100     }
00101     ,{{{ INF, INF, INF, INF, INF} /* NP,GT,A,E */
00102     ,{ INF, INF, INF, INF, INF} /* NP,GT,A,A */
00103     ,{ INF, INF, INF, INF, INF} /* NP,GT,A,C */
00104     ,{ INF, INF, INF, INF, INF} /* NP,GT,A,G */
00105     ,{ INF, INF, INF, INF, INF} /* NP,GT,A,U/T */
00106     }
00107     ,{{{ INF, INF, INF, INF, INF} /* NP,GT,C,E */
00108     ,{ INF, INF, INF, INF, INF} /* NP,GT,C,A */
00109     ,{ INF, INF, INF, INF, INF} /* NP,GT,C,C */
00110     ,{ INF, INF, INF, INF, INF} /* NP,GT,C,G */
00111     ,{ INF, INF, INF, INF, INF} /* NP,GT,C,U/T */
00112     }
00113     ,{{{ INF, INF, INF, INF, INF} /* NP,GT,G,E */
00114     ,{ INF, INF, INF, INF, INF} /* NP,GT,G,A */
00115     ,{ INF, INF, INF, INF, INF} /* NP,GT,G,C */
00116     ,{ INF, INF, INF, INF, INF} /* NP,GT,G,G */
00117     ,{ INF, INF, INF, INF, INF} /* NP,GT,G,U/T */
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00120     ,{ INF, INF, INF, INF, INF} /* NP,GT,U/T,A */
00121     ,{ INF, INF, INF, INF, INF} /* NP,GT,U/T,C */
00122     ,{ INF, INF, INF, INF, INF} /* NP,GT,U/T,G */
00123     ,{ INF, INF, INF, INF, INF} /* NP,GT,U/T,U/T */
00124     }
00125     }
00126     ,{{{ INF, INF, INF, INF, INF} /* NP,UG,E,E */
00127     ,{ INF, INF, INF, INF, INF} /* NP,UG,E,A */
00128     ,{ INF, INF, INF, INF, INF} /* NP,UG,E,C */
00129     ,{ INF, INF, INF, INF, INF} /* NP,UG,E,G */
00130     ,{ INF, INF, INF, INF, INF} /* NP,UG,E,U/T */
00131     }
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00133     ,{ INF, INF, INF, INF, INF} /* NP,UG,A,A */
00134     ,{ INF, INF, INF, INF, INF} /* NP,UG,A,C */
00135     ,{ INF, INF, INF, INF, INF} /* NP,UG,A,G */
00136     ,{ INF, INF, INF, INF, INF} /* NP,UG,A,U/T */
00137     }
00138     ,{{{ INF, INF, INF, INF, INF} /* NP,UG,C,E */
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00140     ,{ INF, INF, INF, INF, INF} /* NP,UG,C,C */
00141     ,{ INF, INF, INF, INF, INF} /* NP,UG,C,G */
00142     ,{ INF, INF, INF, INF, INF} /* NP,UG,C,U/T */

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00143     }
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00150     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UG,U/T,E */
00151     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UG,U/T,A */
00152     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UG,U/T,C */
00153     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UG,U/T,G */
00154     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UG,U/T,U/T */
00155     }
00156     }
00157     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,E,E */
00158     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,E,A */
00159     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,E,C */
00160     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,E,G */
00161     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,E,U/T */
00162     }
00163     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,A,E */
00164     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,A,A */
00165     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,A,C */
00166     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,A,G */
00167     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,A,U/T */
00168     }
00169     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,C,E */
00170     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,C,A */
00171     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,C,C */
00172     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,C,G */
00173     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,C,U/T */
00174     }
00175     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,E */
00176     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,A */
00177     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,C */
00178     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,G */
00179     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,U/T */
00180     }
00181     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,E */
00182     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,A */
00183     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,C */
00184     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,G */
00185     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,U/T */
00186     }
00187     }
00188     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,E */
00189     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,A */
00190     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,C */
00191     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,G */
00192     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,U/T */
00193     }
00194     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,A,E */
00195     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,A,A */
00196     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,A,C */
00197     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,A,G */
00198     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,A,U/T */
00199     }
00200     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,C,E */
00201     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,C,A */
00202     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,C,C */
00203     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,C,G */
00204     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,C,U/T */
00205     }
00206     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,G,E */
00207     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,G,A */
00208     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,G,C */
00209     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,G,G */
00210     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,G,U/T */
00211     }
00212     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,U/T,E */
00213     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,U/T,A */
00214     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,U/T,C */
00215     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,U/T,G */
00216     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,U/T,U/T */
00217     }
00218     }
00219     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,E,E */
00220     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,E,A */
00221     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,E,C */
00222     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,E,G */
00223     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,E,U/T */
00224     }
00225     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,A,E */
00226     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,A,A */
00227     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,A,C */
00228     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,A,G */
00229     ,{{   INF,   INF,   INF,   INF,   INF} /* NP,NN,A,U/T */

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00230     }
00231     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,E */
00232     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,A */
00233     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,C */
00234     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,G */
00235     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,U/T */
00236     }
00237     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,G,E */
00238     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,G,A */
00239     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,G,C */
00240     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,G,G */
00241     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,G,U/T */
00242     }
00243     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,E */
00244     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,A */
00245     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,C */
00246     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,G */
00247     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,U/T */
00248     }
00249     }
00250     }
00251     ,{{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,E,E */
00252     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,E,A */
00253     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,E,C */
00254     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,E,G */
00255     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,E,U/T */
00256     }
00257     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,A,E */
00258     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,A,A */
00259     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,A,C */
00260     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,A,G */
00261     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,A,U/T */
00262     }
00263     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,E */
00264     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,A */
00265     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,C */
00266     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,G */
00267     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,U/T */
00268     }
00269     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,E */
00270     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,A */
00271     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,C */
00272     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,G */
00273     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,U/T */
00274     }
00275     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,E */
00276     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,A */
00277     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,C */
00278     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,G */
00279     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,U/T */
00280     }
00281     }
00282     ,{{{    240,    240,    225,    230,    240} /* CG,CG,E,E */
00283     ,{{    240,    240,    215,    230,    205} /* CG,CG,E,A */
00284     ,{{    225,    225,    220,    215,    215} /* CG,CG,E,C */
00285     ,{{    235,    235,    210,    225,    205} /* CG,CG,E,G */
00286     ,{{    240,    215,    225,    215,    240} /* CG,CG,E,U/T */
00287     }
00288     ,{{{    240,    210,    225,    155,    240} /* CG,CG,A,E */
00289     ,{{    200,    170,    185,    115,    200} /* CG,CG,A,A */
00290     ,{{    215,    185,    200,    130,    215} /* CG,CG,A,C */
00291     ,{{    145,    115,    130,    120,    145} /* CG,CG,A,G */
00292     ,{{    240,    210,    225,    155,    240} /* CG,CG,A,U/T */
00293     }
00294     ,{{{    220,    210,    220,    205,    210} /* CG,CG,C,E */
00295     ,{{    210,    200,    210,    195,    200} /* CG,CG,C,A */
00296     ,{{    220,    210,    220,    205,    210} /* CG,CG,C,C */
00297     ,{{    190,    180,    175,    180} /* CG,CG,C,G */
00298     ,{{    210,    200,    210,    195,    200} /* CG,CG,C,U/T */
00299     }
00300     ,{{{    225,    145,    195,    145,    225} /* CG,CG,G,E */
00301     ,{{    140,    120,    110,    120,    140} /* CG,CG,G,A */
00302     ,{{    205,    125,    175,    125,    205} /* CG,CG,G,C */
00303     ,{{    140,    120,    110,    120,    140} /* CG,CG,G,G */
00304     ,{{    225,    145,    195,    145,    225} /* CG,CG,G,U/T */
00305     }
00306     ,{{{    240,    240,    215,    230,    165} /* CG,CG,U/T,E */
00307     ,{{    240,    240,    215,    230,    165} /* CG,CG,U/T,A */
00308     ,{{    225,    225,    200,    215,    150} /* CG,CG,U/T,C */
00309     ,{{    235,    235,    210,    225,    160} /* CG,CG,U/T,G */
00310     ,{{    175,    175,    150,    165,    140} /* CG,CG,U/T,U/T */
00311     }
00312     }
00313     ,{{{    255,    255,    230,    235,    230} /* CG,GC,E,E */
00314     ,{{    245,    245,    210,    225,    200} /* CG,GC,E,A */
00315     ,{{    235,    225,    225,    215,    210} /* CG,GC,E,C */
00316     ,{{    245,    245,    220,    235,    210} /* CG,GC,E,G */

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00317 , { 240, 225, 215, 205, 230} /* CG,GC,E,U/T */
00318 }
00319 , { { 240, 210, 215, 145, 230} /* CG,GC,A,E */
00320 , { 205, 175, 180, 110, 195} /* CG,GC,A,A */
00321 , { 210, 180, 165, 125, 210} /* CG,GC,A,C */
00322 , { 140, 95, 125, 115, 140} /* CG,GC,A,G */
00323 , { 230, 200, 215, 145, 230} /* CG,GC,A,U/T */
00324 }
00325 , { { 225, 215, 225, 200, 205} /* CG,GC,C,E */
00326 , { 205, 195, 205, 190, 195} /* CG,GC,C,A */
00327 , { 225, 205, 225, 200, 205} /* CG,GC,C,C */
00328 , { 205, 195, 205, 190, 195} /* CG,GC,C,G */
00329 , { 220, 210, 210, 195, 200} /* CG,GC,C,U/T */
00330 }
00331 , { { 225, 175, 195, 145, 225} /* CG,GC,G,E */
00332 , { 195, 145, 165, 100, 195} /* CG,GC,G,A */
00333 , { 180, 100, 150, 100, 180} /* CG,GC,G,C */
00334 , { 140, 120, 105, 115, 135} /* CG,GC,G,G */
00335 , { 225, 145, 195, 145, 225} /* CG,GC,G,U/T */
00336 }
00337 , { { 245, 245, 220, 235, 170} /* CG,GC,U/T,E */
00338 , { 235, 235, 210, 225, 160} /* CG,GC,U/T,A */
00339 , { 225, 225, 195, 215, 150} /* CG,GC,U/T,C */
00340 , { 245, 245, 220, 235, 170} /* CG,GC,U/T,G */
00341 , { 185, 175, 160, 165, 135} /* CG,GC,U/T,U/T */
00342 }
00343 }
00344 , { { { 295, 295, 270, 285, 285} /* CG,GT,E,E */
00345 , { 285, 285, 270, 275, 260} /* CG,GT,E,A */
00346 , { 285, 285, 270, 275, 275} /* CG,GT,E,C */
00347 , { 295, 295, 270, 285, 260} /* CG,GT,E,G */
00348 , { 285, 285, 270, 275, 285} /* CG,GT,E,U/T */
00349 }
00350 , { { 285, 255, 270, 205, 285} /* CG,GT,A,E */
00351 , { 260, 230, 245, 180, 260} /* CG,GT,A,A */
00352 , { 275, 245, 260, 195, 275} /* CG,GT,A,C */
00353 , { 205, 175, 190, 180, 205} /* CG,GT,A,G */
00354 , { 285, 255, 270, 205, 285} /* CG,GT,A,U/T */
00355 }
00356 , { { 270, 260, 270, 255, 260} /* CG,GT,C,E */
00357 , { 270, 260, 270, 255, 260} /* CG,GT,C,A */
00358 , { 270, 260, 270, 255, 260} /* CG,GT,C,C */
00359 , { 260, 250, 260, 245, 250} /* CG,GT,C,G */
00360 , { 270, 260, 270, 255, 260} /* CG,GT,C,U/T */
00361 }
00362 , { { 280, 205, 250, 205, 280} /* CG,GT,G,E */
00363 , { 255, 180, 225, 180, 255} /* CG,GT,G,A */
00364 , { 260, 185, 230, 185, 260} /* CG,GT,G,C */
00365 , { 200, 180, 170, 180, 200} /* CG,GT,G,G */
00366 , { 280, 205, 250, 205, 280} /* CG,GT,G,U/T */
00367 }
00368 , { { 295, 295, 270, 285, 220} /* CG,GT,U/T,E */
00369 , { 285, 285, 260, 275, 210} /* CG,GT,U/T,A */
00370 , { 285, 285, 260, 275, 210} /* CG,GT,U/T,C */
00371 , { 295, 295, 270, 285, 220} /* CG,GT,U/T,G */
00372 , { 245, 245, 220, 235, 210} /* CG,GT,U/T,U/T */
00373 }
00374 }
00375 , { { { 295, 295, 270, 285, 285} /* CG,UG,E,E */
00376 , { 295, 295, 270, 285, 260} /* CG,UG,E,A */
00377 , { 285, 285, 270, 275, 275} /* CG,UG,E,C */
00378 , { 295, 295, 270, 285, 260} /* CG,UG,E,G */
00379 , { 285, 285, 270, 275, 285} /* CG,UG,E,U/T */
00380 }
00381 , { { 285, 255, 270, 205, 285} /* CG,UG,A,E */
00382 , { 260, 230, 245, 180, 260} /* CG,UG,A,A */
00383 , { 275, 245, 260, 195, 275} /* CG,UG,A,C */
00384 , { 205, 175, 190, 180, 205} /* CG,UG,A,G */
00385 , { 285, 255, 270, 205, 285} /* CG,UG,A,U/T */
00386 }
00387 , { { 270, 260, 270, 255, 260} /* CG,UG,C,E */
00388 , { 270, 260, 270, 255, 260} /* CG,UG,C,A */
00389 , { 270, 260, 270, 255, 260} /* CG,UG,C,C */
00390 , { 255, 245, 255, 240, 245} /* CG,UG,C,G */
00391 , { 270, 260, 270, 255, 260} /* CG,UG,C,U/T */
00392 }
00393 , { { 280, 205, 250, 205, 280} /* CG,UG,G,E */
00394 , { 200, 180, 170, 180, 200} /* CG,UG,G,A */
00395 , { 265, 190, 235, 190, 265} /* CG,UG,G,C */
00396 , { 200, 180, 170, 180, 200} /* CG,UG,G,G */
00397 , { 280, 205, 250, 205, 280} /* CG,UG,G,U/T */
00398 }
00399 , { { 295, 295, 270, 285, 220} /* CG,UG,U/T,E */
00400 , { 295, 295, 270, 285, 220} /* CG,UG,U/T,A */
00401 , { 285, 285, 260, 275, 210} /* CG,UG,U/T,C */
00402 , { 295, 295, 270, 285, 220} /* CG,UG,U/T,G */
00403 , { 245, 245, 220, 235, 210} /* CG,UG,U/T,U/T */

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00404     }
00405     }
00406     ,{{ 295, 295, 270, 285, 285} /* CG,AT,E,E */
00407     ,{{ 295, 295, 270, 285, 260} /* CG,AT,E,A */
00408     ,{{ 275, 275, 265, 265, 260} /* CG,AT,E,C */
00409     ,{{ 295, 295, 270, 285, 260} /* CG,AT,E,G */
00410     ,{{ 285, 265, 270, 260, 285} /* CG,AT,E,U/T */
00411     }
00412     ,{{ 285, 255, 270, 205, 285} /* CG,AT,A,E */
00413     ,{{ 250, 220, 235, 170, 250} /* CG,AT,A,A */
00414     ,{{ 260, 230, 245, 180, 260} /* CG,AT,A,C */
00415     ,{{ 200, 170, 185, 175, 200} /* CG,AT,A,G */
00416     ,{{ 285, 255, 270, 205, 285} /* CG,AT,A,U/T */
00417     }
00418     ,{{ 270, 260, 270, 255, 260} /* CG,AT,C,E */
00419     ,{{ 255, 245, 255, 240, 245} /* CG,AT,C,A */
00420     ,{{ 265, 255, 265, 250, 255} /* CG,AT,C,C */
00421     ,{{ 270, 260, 270, 255, 260} /* CG,AT,C,G */
00422     ,{{ 260, 250, 260, 245, 250} /* CG,AT,C,U/T */
00423     }
00424     ,{{ 280, 205, 250, 205, 280} /* CG,AT,G,E */
00425     ,{{ 250, 175, 220, 175, 250} /* CG,AT,G,A */
00426     ,{{ 260, 185, 230, 185, 260} /* CG,AT,G,C */
00427     ,{{ 195, 175, 165, 175, 195} /* CG,AT,G,G */
00428     ,{{ 280, 205, 250, 205, 280} /* CG,AT,G,U/T */
00429     }
00430     ,{{ 295, 295, 270, 285, 220} /* CG,AT,U/T,E */
00431     ,{{ 295, 295, 270, 285, 220} /* CG,AT,U/T,A */
00432     ,{{ 275, 275, 250, 265, 200} /* CG,AT,U/T,C */
00433     ,{{ 295, 295, 270, 285, 220} /* CG,AT,U/T,G */
00434     ,{{ 225, 225, 200, 215, 190} /* CG,AT,U/T,U/T */
00435     }
00436     }
00437     ,{{{ 295, 295, 280, 285, 285} /* CG,UA,E,E */
00438     ,{{ 295, 295, 270, 285, 260} /* CG,UA,E,A */
00439     ,{{ 275, 275, 265, 265, 260} /* CG,UA,E,C */
00440     ,{{ 295, 295, 280, 285, 270} /* CG,UA,E,G */
00441     ,{{ 285, 265, 270, 260, 285} /* CG,UA,E,U/T */
00442     }
00443     ,{{ 285, 255, 270, 205, 285} /* CG,UA,A,E */
00444     ,{{ 255, 225, 240, 175, 255} /* CG,UA,A,A */
00445     ,{{ 260, 230, 245, 180, 260} /* CG,UA,A,C */
00446     ,{{ 200, 170, 185, 175, 200} /* CG,UA,A,G */
00447     ,{{ 285, 255, 270, 205, 285} /* CG,UA,A,U/T */
00448     }
00449     ,{{ 280, 270, 280, 265, 270} /* CG,UA,C,E */
00450     ,{{ 255, 245, 255, 240, 245} /* CG,UA,C,A */
00451     ,{{ 265, 255, 265, 250, 255} /* CG,UA,C,C */
00452     ,{{ 280, 270, 280, 265, 270} /* CG,UA,C,G */
00453     ,{{ 260, 250, 260, 245, 250} /* CG,UA,C,U/T */
00454     }
00455     ,{{ 275, 200, 245, 200, 275} /* CG,UA,G,E */
00456     ,{{ 195, 175, 165, 175, 195} /* CG,UA,G,A */
00457     ,{{ 255, 180, 225, 180, 255} /* CG,UA,G,C */
00458     ,{{ 195, 175, 165, 175, 195} /* CG,UA,G,G */
00459     ,{{ 275, 200, 245, 200, 275} /* CG,UA,G,U/T */
00460     }
00461     ,{{ 295, 295, 270, 285, 220} /* CG,UA,U/T,E */
00462     ,{{ 295, 295, 270, 285, 220} /* CG,UA,U/T,A */
00463     ,{{ 275, 275, 250, 265, 200} /* CG,UA,U/T,C */
00464     ,{{ 295, 295, 270, 285, 220} /* CG,UA,U/T,G */
00465     ,{{ 225, 225, 200, 215, 190} /* CG,UA,U/T,U/T */
00466     }
00467     }
00468     ,{{{ 295, 295, 280, 285, 285} /* CG,NN,E,E */
00469     ,{{ 295, 295, 270, 285, 260} /* CG,NN,E,A */
00470     ,{{ 285, 285, 270, 275, 275} /* CG,NN,E,C */
00471     ,{{ 295, 295, 280, 285, 270} /* CG,NN,E,G */
00472     ,{{ 285, 285, 270, 275, 285} /* CG,NN,E,U/T */
00473     }
00474     ,{{ 285, 255, 270, 205, 285} /* CG,NN,A,E */
00475     ,{{ 260, 230, 245, 180, 260} /* CG,NN,A,A */
00476     ,{{ 275, 245, 260, 195, 275} /* CG,NN,A,C */
00477     ,{{ 205, 175, 190, 180, 205} /* CG,NN,A,G */
00478     ,{{ 285, 255, 270, 205, 285} /* CG,NN,A,U/T */
00479     }
00480     ,{{ 280, 270, 280, 265, 270} /* CG,NN,C,E */
00481     ,{{ 270, 260, 270, 255, 260} /* CG,NN,C,A */
00482     ,{{ 270, 260, 270, 255, 260} /* CG,NN,C,C */
00483     ,{{ 280, 270, 280, 265, 270} /* CG,NN,C,G */
00484     ,{{ 270, 260, 270, 255, 260} /* CG,NN,C,U/T */
00485     }
00486     ,{{ 280, 205, 250, 205, 280} /* CG,NN,G,E */
00487     ,{{ 255, 180, 225, 180, 255} /* CG,NN,G,A */
00488     ,{{ 265, 190, 235, 190, 265} /* CG,NN,G,C */
00489     ,{{ 200, 180, 170, 180, 200} /* CG,NN,G,G */
00490     ,{{ 280, 205, 250, 205, 280} /* CG,NN,G,U/T */
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00491     }
00492     ,{{ 295, 295, 270, 285, 220} /* GC,NN,U/T,E */
00493     ,{{ 295, 295, 270, 285, 220} /* GC,NN,U/T,A */
00494     ,{{ 285, 285, 260, 275, 210} /* GC,NN,U/T,C */
00495     ,{{ 295, 295, 270, 285, 220} /* GC,NN,U/T,G */
00496     ,{{ 245, 245, 220, 235, 210} /* GC,NN,U/T,U/T */
00497     }
00498     }
00499     }
00500     ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,E */
00501     ,{{ INF, INF, INF, INF, INF} /* GC,NP,E,A */
00502     ,{{ INF, INF, INF, INF, INF} /* GC,NP,E,C */
00503     ,{{ INF, INF, INF, INF, INF} /* GC,NP,E,G */
00504     ,{{ INF, INF, INF, INF, INF} /* GC,NP,E,U/T */
00505     }
00506     ,{{ INF, INF, INF, INF, INF} /* GC,NP,A,E */
00507     ,{{ INF, INF, INF, INF, INF} /* GC,NP,A,A */
00508     ,{{ INF, INF, INF, INF, INF} /* GC,NP,A,C */
00509     ,{{ INF, INF, INF, INF, INF} /* GC,NP,A,G */
00510     ,{{ INF, INF, INF, INF, INF} /* GC,NP,A,U/T */
00511     }
00512     ,{{ INF, INF, INF, INF, INF} /* GC,NP,C,E */
00513     ,{{ INF, INF, INF, INF, INF} /* GC,NP,C,A */
00514     ,{{ INF, INF, INF, INF, INF} /* GC,NP,C,C */
00515     ,{{ INF, INF, INF, INF, INF} /* GC,NP,C,G */
00516     ,{{ INF, INF, INF, INF, INF} /* GC,NP,C,U/T */
00517     }
00518     ,{{ INF, INF, INF, INF, INF} /* GC,NP,G,E */
00519     ,{{ INF, INF, INF, INF, INF} /* GC,NP,G,A */
00520     ,{{ INF, INF, INF, INF, INF} /* GC,NP,G,C */
00521     ,{{ INF, INF, INF, INF, INF} /* GC,NP,G,G */
00522     ,{{ INF, INF, INF, INF, INF} /* GC,NP,G,U/T */
00523     }
00524     ,{{{ INF, INF, INF, INF, INF} /* GC,NP,U/T,E */
00525     ,{{ INF, INF, INF, INF, INF} /* GC,NP,U/T,A */
00526     ,{{ INF, INF, INF, INF, INF} /* GC,NP,U/T,C */
00527     ,{{ INF, INF, INF, INF, INF} /* GC,NP,U/T,G */
00528     ,{{ INF, INF, INF, INF, INF} /* GC,NP,U/T,U/T */
00529     }
00530     }
00531     ,{{{ 245, 240, 220, 230, 235} /* GC,CG,E,E */
00532     ,{{ 240, 240, 215, 230, 210} /* GC,CG,E,A */
00533     ,{{ 215, 215, 215, 215, 215} /* GC,CG,E,C */
00534     ,{{ 225, 225, 210, 225, 210} /* GC,CG,E,G */
00535     ,{{ 235, 205, 220, 210, 235} /* GC,CG,E,U/T */
00536     }
00537     ,{{{ 245, 215, 220, 210, 235} /* GC,CG,A,E */
00538     ,{{ 205, 175, 180, 160, 195} /* GC,CG,A,A */
00539     ,{{ 210, 180, 195, 185, 210} /* GC,CG,A,C */
00540     ,{{ 145, 115, 125, 115, 140} /* GC,CG,A,G */
00541     ,{{ 235, 205, 220, 210, 235} /* GC,CG,A,U/T */
00542     }
00543     ,{{{ 215, 205, 215, 180, 210} /* GC,CG,C,E */
00544     ,{{ 205, 195, 205, 170, 200} /* GC,CG,C,A */
00545     ,{{ 215, 205, 215, 180, 210} /* GC,CG,C,C */
00546     ,{{ 185, 175, 185, 150, 180} /* GC,CG,C,G */
00547     ,{{ 205, 195, 185, 170, 200} /* GC,CG,C,U/T */
00548     }
00549     ,{{{ 235, 140, 210, 140, 235} /* GC,CG,G,E */
00550     ,{{ 150, 115, 125, 115, 150} /* GC,CG,G,A */
00551     ,{{ 215, 120, 190, 120, 215} /* GC,CG,G,C */
00552     ,{{ 150, 115, 125, 115, 150} /* GC,CG,G,G */
00553     ,{{ 235, 140, 210, 140, 235} /* GC,CG,G,U/T */
00554     }
00555     ,{{{ 230, 230, 215, 230, 165} /* GC,CG,U/T,E */
00556     ,{{ 230, 230, 215, 230, 165} /* GC,CG,U/T,A */
00557     ,{{ 215, 215, 200, 215, 150} /* GC,CG,U/T,C */
00558     ,{{ 225, 225, 210, 225, 160} /* GC,CG,U/T,G */
00559     ,{{ 165, 165, 150, 165, 140} /* GC,CG,U/T,U/T */
00560     }
00561     }
00562     ,{{{ 235, 235, 220, 235, 235} /* GC,GC,E,E */
00563     ,{{ 225, 225, 210, 225, 205} /* GC,GC,E,A */
00564     ,{{ 215, 215, 210, 215, 205} /* GC,GC,E,C */
00565     ,{{ 235, 235, 220, 235, 210} /* GC,GC,E,G */
00566     ,{{ 235, 205, 210, 205, 235} /* GC,GC,E,U/T */
00567     }
00568     ,{{{ 225, 195, 210, 200, 225} /* GC,GC,A,E */
00569     ,{{ 190, 160, 175, 165, 190} /* GC,GC,A,A */
00570     ,{{ 205, 175, 190, 180, 205} /* GC,GC,A,C */
00571     ,{{ 135, 105, 120, 110, 135} /* GC,GC,A,G */
00572     ,{{ 225, 195, 210, 200, 225} /* GC,GC,A,U/T */
00573     }
00574     ,{{{ 210, 200, 210, 175, 205} /* GC,GC,C,E */
00575     ,{{ 200, 190, 200, 165, 195} /* GC,GC,C,A */
00576     ,{{ 210, 200, 210, 175, 205} /* GC,GC,C,C */
00577     ,{{ 200, 190, 200, 165, 195} /* GC,GC,C,G */

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00582 , { 190, 95, 165, 95, 190} /* GC,GC,G,C */
00583 , { 145, 110, 120, 110, 145} /* GC,GC,G,G */
00584 , { 235, 140, 210, 140, 235} /* GC,GC,G,U/T */
00585 }
00586 , { { 235, 235, 220, 235, 170} /* GC,GC,U/T,E */
00587 , { 225, 225, 210, 225, 160} /* GC,GC,U/T,A */
00588 , { 215, 215, 200, 215, 150} /* GC,GC,U/T,C */
00589 , { 235, 235, 220, 235, 170} /* GC,GC,U/T,G */
00590 , { 165, 165, 150, 165, 140} /* GC,GC,U/T,U/T */
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00592 }
00593 , { { { 290, 285, 270, 285, 290} /* GC,GT,E,E */
00594 , { 275, 275, 265, 275, 265} /* GC,GT,E,A */
00595 , { 275, 275, 265, 275, 270} /* GC,GT,E,C */
00596 , { 285, 285, 270, 285, 265} /* GC,GT,E,G */
00597 , { 290, 275, 265, 275, 290} /* GC,GT,E,U/T */
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00601 , { 270, 240, 255, 245, 270} /* GC,GT,A,C */
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00607 , { 265, 255, 265, 230, 260} /* GC,GT,C,C */
00608 , { 255, 245, 255, 220, 250} /* GC,GT,C,G */
00609 , { 265, 255, 265, 230, 260} /* GC,GT,C,U/T */
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00613 , { 270, 180, 245, 180, 270} /* GC,GT,G,C */
00614 , { 210, 175, 185, 175, 210} /* GC,GT,G,G */
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00617 , { { 285, 285, 270, 285, 220} /* GC,GT,U/T,E */
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00619 , { 275, 275, 260, 275, 210} /* GC,GT,U/T,C */
00620 , { 285, 285, 270, 285, 220} /* GC,GT,U/T,G */
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00628 , { 290, 275, 265, 275, 290} /* GC,UG,E,U/T */
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00632 , { 270, 240, 255, 245, 270} /* GC,UG,A,C */
00633 , { 200, 135, 185, 175, 200} /* GC,UG,A,G */
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00638 , { 265, 255, 265, 230, 260} /* GC,UG,C,C */
00639 , { 250, 240, 250, 215, 245} /* GC,UG,C,G */
00640 , { 265, 255, 210, 230, 260} /* GC,UG,C,U/T */
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00644 , { 275, 185, 250, 185, 275} /* GC,UG,G,C */
00645 , { 210, 175, 185, 175, 210} /* GC,UG,G,G */
00646 , { 290, 200, 265, 200, 290} /* GC,UG,G,U/T */
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00651 , { 285, 285, 270, 285, 220} /* GC,UG,U/T,G */
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00657 , { 270, 265, 260, 265, 270} /* GC,AT,E,C */
00658 , { 285, 285, 270, 285, 260} /* GC,AT,E,G */
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00662 , { 245, 215, 230, 220, 245} /* GC,AT,A,A */
00663 , { 255, 225, 240, 230, 255} /* GC,AT,A,C */
00664 , { 195, 165, 180, 170, 195} /* GC,AT,A,G */
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00670 , { 265, 255, 265, 230, 260} /* GC,AT,C,G */
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00682 , { 285, 285, 270, 285, 220} /* GC,AT,U/T,G */
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00685 }
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00688 , { 265, 265, 260, 265, 265} /* GC,UA,E,C */
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00725 , { 270, 240, 255, 245, 270} /* GC,NN,A,C */
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00731 , { 265, 255, 265, 230, 260} /* GC,NN,C,C */
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00737 , { 275, 185, 250, 185, 275} /* GC,NN,G,C */
00738 , { 210, 175, 185, 175, 210} /* GC,NN,G,G */
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00743 , { 275, 275, 260, 275, 210} /* GC,NN,U/T,C */
00744 , { 285, 285, 270, 285, 220} /* GC,NN,U/T,G */
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00764 , { INF, INF, INF, INF, INF } /* GT,NP,C,G */
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00766 }
00767 , { { INF, INF, INF, INF, INF } /* GT,NP,G,E */
00768 , { INF, INF, INF, INF, INF } /* GT,NP,G,A */
00769 , { INF, INF, INF, INF, INF } /* GT,NP,G,C */
00770 , { INF, INF, INF, INF, INF } /* GT,NP,G,G */
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00777 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,U/T */
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00784 , { 285, 270, 285, 270, 285 } /* GT,CG,E,U/T */
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00794 , { 270, 270, 270, 260, 270 } /* GT,CG,C,C */
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00797 }
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00801 , { 205, 180, 185, 180, 205 } /* GT,CG,G,G */
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00805 , { 285, 285, 275, 285, 235 } /* GT,CG,U/T,A */
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00807 , { 280, 280, 270, 280, 230 } /* GT,CG,U/T,G */
00808 , { 220, 220, 210, 220, 210 } /* GT,CG,U/T,U/T */
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00813 , { 270, 270, 265, 270, 265 } /* GT,GC,E,C */
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00816 }
00817 , { { 275, 260, 275, 260, 275 } /* GT,GC,A,E */
00818 , { 240, 225, 240, 225, 240 } /* GT,GC,A,A */
00819 , { 255, 240, 255, 240, 255 } /* GT,GC,A,C */
00820 , { 190, 175, 190, 175, 190 } /* GT,GC,A,G */
00821 , { 275, 260, 275, 260, 275 } /* GT,GC,A,U/T */
00822 }
00823 , { { 265, 265, 265, 255, 265 } /* GT,GC,C,E */
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00829 , { { 285, 205, 265, 205, 285 } /* GT,GC,G,E */
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00831 , { 240, 160, 220, 160, 240 } /* GT,GC,G,C */
00832 , { 200, 175, 180, 175, 200 } /* GT,GC,G,G */
00833 , { 285, 205, 265, 205, 285 } /* GT,GC,G,U/T */
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00835 , { { 290, 290, 280, 290, 240 } /* GT,GC,U/T,E */
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00837 , { 270, 270, 260, 270, 220 } /* GT,GC,U/T,C */
00838 , { 290, 290, 280, 290, 240 } /* GT,GC,U/T,G */

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00852 , { 330, 315, 330, 315, 330} /* GT,GT,A,U/T */
00853 }
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00855 , { 320, 320, 320, 310, 320} /* GT,GT,C,A */
00856 , { 320, 320, 320, 310, 320} /* GT,GT,C,C */
00857 , { 310, 310, 310, 300, 310} /* GT,GT,C,G */
00858 , { 320, 320, 320, 310, 320} /* GT,GT,C,U/T */
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00862 , { 320, 240, 300, 240, 320} /* GT,GT,G,C */
00863 , { 260, 235, 240, 235, 260} /* GT,GT,G,G */
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00870 , { 295, 295, 285, 295, 285} /* GT,GT,U/T,U/T */
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00872 }
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00874 , { 340, 340, 330, 340, 330} /* GT,UG,E,A */
00875 , { 330, 330, 320, 330, 325} /* GT,UG,E,C */
00876 , { 340, 340, 330, 340, 330} /* GT,UG,E,G */
00877 , { 340, 330, 330, 330, 340} /* GT,UG,E,U/T */
00878 }
00879 , {{ 330, 315, 330, 315, 330} /* GT,UG,A,E */
00880 , { 305, 230, 305, 210, 305} /* GT,UG,A,A */
00881 , { 320, 305, 320, 305, 320} /* GT,UG,A,C */
00882 , { 250, 165, 250, 235, 250} /* GT,UG,A,G */
00883 , { 330, 315, 330, 315, 330} /* GT,UG,A,U/T */
00884 }
00885 , {{ 320, 320, 320, 310, 320} /* GT,UG,C,E */
00886 , { 320, 320, 320, 310, 320} /* GT,UG,C,A */
00887 , { 320, 320, 320, 310, 320} /* GT,UG,C,C */
00888 , { 305, 305, 305, 295, 305} /* GT,UG,C,G */
00889 , { 320, 320, 230, 310, 320} /* GT,UG,C,U/T */
00890 }
00891 , {{ 340, 260, 320, 260, 340} /* GT,UG,G,E */
00892 , { 260, 235, 240, 235, 260} /* GT,UG,G,A */
00893 , { 325, 245, 305, 245, 325} /* GT,UG,G,C */
00894 , { 260, 235, 240, 235, 260} /* GT,UG,G,G */
00895 , { 340, 260, 320, 260, 340} /* GT,UG,G,U/T */
00896 }
00897 , {{ 340, 340, 330, 340, 295} /* GT,UG,U/T,E */
00898 , { 340, 340, 330, 340, 295} /* GT,UG,U/T,A */
00899 , { 330, 330, 320, 330, 285} /* GT,UG,U/T,C */
00900 , { 340, 340, 330, 340, 295} /* GT,UG,U/T,G */
00901 , { 295, 295, 285, 295, 285} /* GT,UG,U/T,U/T */
00902 }
00903 }
00904 , {{ 340, 340, 330, 340, 340} /* GT,AT,E,E */
00905 , { 340, 340, 330, 340, 330} /* GT,AT,E,A */
00906 , { 320, 320, 315, 320, 320} /* GT,AT,E,C */
00907 , { 340, 340, 330, 340, 330} /* GT,AT,E,G */
00908 , { 340, 315, 330, 315, 340} /* GT,AT,E,U/T */
00909 }
00910 , {{ 330, 315, 330, 315, 330} /* GT,AT,A,E */
00911 , { 295, 280, 295, 280, 295} /* GT,AT,A,A */
00912 , { 305, 290, 305, 290, 305} /* GT,AT,A,C */
00913 , { 245, 230, 245, 230, 245} /* GT,AT,A,G */
00914 , { 330, 315, 330, 315, 330} /* GT,AT,A,U/T */
00915 }
00916 , {{ 320, 320, 320, 310, 320} /* GT,AT,C,E */
00917 , { 305, 305, 305, 295, 305} /* GT,AT,C,A */
00918 , { 315, 315, 315, 305, 315} /* GT,AT,C,C */
00919 , { 320, 320, 320, 310, 320} /* GT,AT,C,G */
00920 , { 310, 310, 310, 300, 310} /* GT,AT,C,U/T */
00921 }
00922 , {{ 340, 260, 320, 260, 340} /* GT,AT,G,E */
00923 , { 310, 230, 290, 230, 310} /* GT,AT,G,A */
00924 , { 320, 240, 300, 240, 320} /* GT,AT,G,C */
00925 , { 255, 230, 235, 230, 255} /* GT,AT,G,G */

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00927 }
00928 , { { 340, 340, 330, 340, 295} /* GT,AT,U/T,E */
00929 , { 340, 340, 330, 340, 295} /* GT,AT,U/T,A */
00930 , { 320, 320, 310, 320, 275} /* GT,AT,U/T,C */
00931 , { 340, 340, 330, 340, 295} /* GT,AT,U/T,G */
00932 , { 275, 275, 265, 275, 265} /* GT,AT,U/T,U/T */
00933 }
00934 }
00935 , { { 340, 340, 330, 340, 335} /* GT,UA,E,E */
00936 , { 340, 340, 330, 340, 330} /* GT,UA,E,A */
00937 , { 320, 320, 315, 320, 315} /* GT,UA,E,C */
00938 , { 340, 340, 330, 340, 330} /* GT,UA,E,G */
00939 , { 335, 315, 330, 315, 335} /* GT,UA,E,U/T */
00940 }
00941 , { { 330, 315, 330, 315, 330} /* GT,UA,A,E */
00942 , { 300, 285, 300, 285, 300} /* GT,UA,A,A */
00943 , { 305, 290, 305, 290, 305} /* GT,UA,A,C */
00944 , { 245, 230, 245, 230, 245} /* GT,UA,A,G */
00945 , { 330, 315, 330, 315, 330} /* GT,UA,A,U/T */
00946 }
00947 , { { 330, 330, 330, 320, 330} /* GT,UA,C,E */
00948 , { 305, 305, 305, 295, 305} /* GT,UA,C,A */
00949 , { 315, 315, 315, 305, 315} /* GT,UA,C,C */
00950 , { 330, 330, 330, 320, 330} /* GT,UA,C,G */
00951 , { 310, 310, 310, 300, 310} /* GT,UA,C,U/T */
00952 }
00953 , { { 335, 255, 315, 255, 335} /* GT,UA,G,E */
00954 , { 255, 230, 235, 230, 255} /* GT,UA,G,A */
00955 , { 315, 235, 295, 235, 315} /* GT,UA,G,C */
00956 , { 255, 230, 235, 230, 255} /* GT,UA,G,G */
00957 , { 335, 255, 315, 255, 335} /* GT,UA,G,U/T */
00958 }
00959 , { { 340, 340, 330, 340, 295} /* GT,UA,U/T,E */
00960 , { 340, 340, 330, 340, 295} /* GT,UA,U/T,A */
00961 , { 320, 320, 310, 320, 275} /* GT,UA,U/T,C */
00962 , { 340, 340, 330, 340, 295} /* GT,UA,U/T,G */
00963 , { 275, 275, 265, 275, 265} /* GT,UA,U/T,U/T */
00964 }
00965 }
00966 , { { { 340, 340, 330, 340, 340} /* GT,NN,E,E */
00967 , { 340, 340, 330, 340, 330} /* GT,NN,E,A */
00968 , { 330, 330, 320, 330, 325} /* GT,NN,E,C */
00969 , { 340, 340, 330, 340, 330} /* GT,NN,E,G */
00970 , { 340, 330, 330, 330, 340} /* GT,NN,E,U/T */
00971 }
00972 , { { 330, 315, 330, 315, 330} /* GT,NN,A,E */
00973 , { 305, 290, 305, 290, 305} /* GT,NN,A,A */
00974 , { 320, 305, 320, 305, 320} /* GT,NN,A,C */
00975 , { 250, 235, 250, 235, 250} /* GT,NN,A,G */
00976 , { 330, 315, 330, 315, 330} /* GT,NN,A,U/T */
00977 }
00978 , { { 330, 330, 330, 320, 330} /* GT,NN,C,E */
00979 , { 320, 320, 320, 310, 320} /* GT,NN,C,A */
00980 , { 320, 320, 320, 310, 320} /* GT,NN,C,C */
00981 , { 330, 330, 330, 320, 330} /* GT,NN,C,G */
00982 , { 320, 320, 320, 310, 320} /* GT,NN,C,U/T */
00983 }
00984 , { { 340, 260, 320, 260, 340} /* GT,NN,G,E */
00985 , { 315, 235, 295, 235, 315} /* GT,NN,G,A */
00986 , { 325, 245, 305, 245, 325} /* GT,NN,G,C */
00987 , { 260, 235, 240, 235, 260} /* GT,NN,G,G */
00988 , { 340, 260, 320, 260, 340} /* GT,NN,G,U/T */
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00991 , { 340, 340, 330, 340, 295} /* GT,NN,U/T,A */
00992 , { 330, 330, 320, 330, 285} /* GT,NN,U/T,C */
00993 , { 340, 340, 330, 340, 295} /* GT,NN,U/T,G */
00994 , { 295, 295, 285, 295, 285} /* GT,NN,U/T,U/T */
00995 }
00996 }
00997 }
00998 , { { { INF, INF, INF, INF, INF} /* UG,NP,E,E */
00999 , { INF, INF, INF, INF, INF} /* UG,NP,E,A */
01000 , { INF, INF, INF, INF, INF} /* UG,NP,E,C */
01001 , { INF, INF, INF, INF, INF} /* UG,NP,E,G */
01002 , { INF, INF, INF, INF, INF} /* UG,NP,E,U/T */
01003 }
01004 , { { INF, INF, INF, INF, INF} /* UG,NP,A,E */
01005 , { INF, INF, INF, INF, INF} /* UG,NP,A,A */
01006 , { INF, INF, INF, INF, INF} /* UG,NP,A,C */
01007 , { INF, INF, INF, INF, INF} /* UG,NP,A,G */
01008 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T */
01009 }
01010 , { { INF, INF, INF, INF, INF} /* UG,NP,C,E */
01011 , { INF, INF, INF, INF, INF} /* UG,NP,C,A */
01012 , { INF, INF, INF, INF, INF} /* UG,NP,C,C */
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01013 , { INF, INF, INF, INF, INF } /* UG,NP,C,G */
01014 , { INF, INF, INF, INF, INF } /* UG,NP,C,U/T */
01015 }
01016 , { { INF, INF, INF, INF, INF } /* UG,NP,G,E */
01017 , { INF, INF, INF, INF, INF } /* UG,NP,G,A */
01018 , { INF, INF, INF, INF, INF } /* UG,NP,G,C */
01019 , { INF, INF, INF, INF, INF } /* UG,NP,G,G */
01020 , { INF, INF, INF, INF, INF } /* UG,NP,G,U/T */
01021 }
01022 , { { INF, INF, INF, INF, INF } /* UG,NP,U/T,E */
01023 , { INF, INF, INF, INF, INF } /* UG,NP,U/T,A */
01024 , { INF, INF, INF, INF, INF } /* UG,NP,U/T,C */
01025 , { INF, INF, INF, INF, INF } /* UG,NP,U/T,G */
01026 , { INF, INF, INF, INF, INF } /* UG,NP,U/T,U/T */
01027 }
01028 }
01029 , { { 295, 285, 285, 285, 295 } /* UG,CG,E,E */
01030 , { 285, 285, 275, 285, 275 } /* UG,CG,E,A */
01031 , { 270, 270, 270, 270, 270 } /* UG,CG,E,C */
01032 , { 280, 280, 270, 280, 270 } /* UG,CG,E,G */
01033 , { 295, 270, 285, 270, 295 } /* UG,CG,E,U/T */
01034 }
01035 , { { 295, 270, 285, 215, 295 } /* UG,CG,A,E */
01036 , { 255, 230, 245, 175, 255 } /* UG,CG,A,A */
01037 , { 270, 245, 260, 190, 270 } /* UG,CG,A,C */
01038 , { 205, 180, 195, 180, 205 } /* UG,CG,A,G */
01039 , { 295, 270, 285, 215, 295 } /* UG,CG,A,U/T */
01040 }
01041 , { { 270, 270, 270, 265, 270 } /* UG,CG,C,E */
01042 , { 260, 260, 260, 255, 260 } /* UG,CG,C,A */
01043 , { 270, 270, 270, 265, 270 } /* UG,CG,C,C */
01044 , { 240, 240, 240, 235, 240 } /* UG,CG,C,G */
01045 , { 260, 260, 260, 255, 260 } /* UG,CG,C,U/T */
01046 }
01047 , { { 285, 205, 260, 205, 285 } /* UG,CG,G,E */
01048 , { 205, 180, 180, 180, 205 } /* UG,CG,G,A */
01049 , { 265, 185, 240, 185, 265 } /* UG,CG,G,C */
01050 , { 205, 180, 180, 180, 205 } /* UG,CG,G,G */
01051 , { 285, 205, 260, 205, 285 } /* UG,CG,G,U/T */
01052 }
01053 , { { 285, 285, 275, 285, 235 } /* UG,CG,U/T,E */
01054 , { 285, 285, 275, 285, 235 } /* UG,CG,U/T,A */
01055 , { 270, 270, 260, 270, 220 } /* UG,CG,U/T,C */
01056 , { 280, 280, 270, 280, 230 } /* UG,CG,U/T,G */
01057 , { 220, 220, 210, 220, 210 } /* UG,CG,U/T,U/T */
01058 }
01059 }
01060 , { { { 290, 290, 280, 290, 285 } /* UG,GC,E,E */
01061 , { 280, 280, 270, 280, 270 } /* UG,GC,E,A */
01062 , { 270, 270, 265, 270, 265 } /* UG,GC,E,C */
01063 , { 290, 290, 280, 290, 280 } /* UG,GC,E,G */
01064 , { 285, 260, 275, 260, 285 } /* UG,GC,E,U/T */
01065 }
01066 , { { 285, 260, 275, 205, 285 } /* UG,GC,A,E */
01067 , { 250, 225, 240, 170, 250 } /* UG,GC,A,A */
01068 , { 265, 240, 255, 185, 265 } /* UG,GC,A,C */
01069 , { 200, 175, 190, 175, 200 } /* UG,GC,A,G */
01070 , { 285, 260, 275, 205, 285 } /* UG,GC,A,U/T */
01071 }
01072 , { { 265, 265, 265, 260, 265 } /* UG,GC,C,E */
01073 , { 255, 255, 255, 250, 255 } /* UG,GC,C,A */
01074 , { 265, 265, 265, 260, 265 } /* UG,GC,C,C */
01075 , { 255, 255, 255, 250, 255 } /* UG,GC,C,G */
01076 , { 260, 260, 260, 255, 260 } /* UG,GC,C,U/T */
01077 }
01078 , { { 285, 205, 260, 205, 285 } /* UG,GC,G,E */
01079 , { 255, 175, 230, 175, 255 } /* UG,GC,G,A */
01080 , { 240, 160, 215, 160, 240 } /* UG,GC,G,C */
01081 , { 200, 175, 175, 175, 200 } /* UG,GC,G,G */
01082 , { 285, 205, 260, 205, 285 } /* UG,GC,G,U/T */
01083 }
01084 , { { 290, 290, 280, 290, 240 } /* UG,GC,U/T,E */
01085 , { 280, 280, 270, 280, 230 } /* UG,GC,U/T,A */
01086 , { 270, 270, 260, 270, 220 } /* UG,GC,U/T,C */
01087 , { 290, 290, 280, 290, 240 } /* UG,GC,U/T,G */
01088 , { 220, 220, 210, 220, 210 } /* UG,GC,U/T,U/T */
01089 }
01090 }
01091 , { { { 340, 340, 330, 340, 340 } /* UG,GT,E,E */
01092 , { 330, 330, 320, 330, 320 } /* UG,GT,E,A */
01093 , { 330, 330, 320, 330, 330 } /* UG,GT,E,C */
01094 , { 340, 340, 330, 340, 330 } /* UG,GT,E,G */
01095 , { 340, 330, 330, 330, 340 } /* UG,GT,E,U/T */
01096 }
01097 , { { 340, 315, 330, 260, 340 } /* UG,GT,A,E */
01098 , { 315, 290, 305, 235, 315 } /* UG,GT,A,A */
01099 , { 330, 305, 320, 250, 330 } /* UG,GT,A,C */

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01104 , { 320, 320, 320, 315, 320} /* UG,GT,C,A */
01105 , { 320, 320, 320, 315, 320} /* UG,GT,C,C */
01106 , { 310, 310, 310, 305, 310} /* UG,GT,C,G */
01107 , { 320, 320, 320, 315, 320} /* UG,GT,C,U/T */
01108 }
01109 , { { 340, 260, 315, 260, 340} /* UG,GT,G,E */
01110 , { 315, 235, 290, 235, 315} /* UG,GT,G,A */
01111 , { 320, 240, 295, 240, 320} /* UG,GT,G,C */
01112 , { 260, 235, 235, 235, 260} /* UG,GT,G,G */
01113 , { 340, 260, 315, 260, 340} /* UG,GT,G,U/T */
01114 }
01115 , { { 340, 340, 330, 340, 295} /* UG,GT,U/T,E */
01116 , { 330, 330, 320, 330, 285} /* UG,GT,U/T,A */
01117 , { 330, 330, 320, 330, 285} /* UG,GT,U/T,C */
01118 , { 340, 340, 330, 340, 295} /* UG,GT,U/T,G */
01119 , { 295, 295, 285, 295, 285} /* UG,GT,U/T,U/T */
01120 }
01121 }
01122 , { { { 340, 340, 330, 340, 340} /* UG,UG,E,E */
01123 , { 340, 340, 330, 340, 330} /* UG,UG,E,A */
01124 , { 330, 330, 320, 330, 330} /* UG,UG,E,C */
01125 , { 340, 340, 330, 340, 330} /* UG,UG,E,G */
01126 , { 340, 330, 330, 330, 340} /* UG,UG,E,U/T */
01127 }
01128 , { { 340, 315, 330, 260, 340} /* UG,UG,A,E */
01129 , { 315, 290, 305, 235, 315} /* UG,UG,A,A */
01130 , { 330, 305, 320, 250, 330} /* UG,UG,A,C */
01131 , { 260, 235, 250, 235, 260} /* UG,UG,A,G */
01132 , { 340, 315, 330, 260, 340} /* UG,UG,A,U/T */
01133 }
01134 , { { 320, 320, 320, 315, 320} /* UG,UG,C,E */
01135 , { 320, 320, 320, 315, 320} /* UG,UG,C,A */
01136 , { 320, 320, 320, 315, 320} /* UG,UG,C,C */
01137 , { 305, 305, 305, 300, 305} /* UG,UG,C,G */
01138 , { 320, 320, 320, 315, 320} /* UG,UG,C,U/T */
01139 }
01140 , { { 340, 260, 315, 260, 340} /* UG,UG,G,E */
01141 , { 260, 235, 235, 235, 260} /* UG,UG,G,A */
01142 , { 325, 245, 300, 245, 325} /* UG,UG,G,C */
01143 , { 260, 235, 235, 235, 260} /* UG,UG,G,G */
01144 , { 340, 260, 315, 260, 340} /* UG,UG,G,U/T */
01145 }
01146 , { { 340, 340, 330, 340, 295} /* UG,UG,U/T,E */
01147 , { 340, 340, 330, 340, 295} /* UG,UG,U/T,A */
01148 , { 330, 330, 320, 330, 285} /* UG,UG,U/T,C */
01149 , { 340, 340, 330, 340, 295} /* UG,UG,U/T,G */
01150 , { 295, 295, 285, 295, 285} /* UG,UG,U/T,U/T */
01151 }
01152 }
01153 , { { { 340, 340, 330, 340, 340} /* UG,AT,E,E */
01154 , { 340, 340, 330, 340, 330} /* UG,AT,E,A */
01155 , { 320, 320, 315, 320, 320} /* UG,AT,E,C */
01156 , { 340, 340, 330, 340, 330} /* UG,AT,E,G */
01157 , { 340, 315, 330, 315, 340} /* UG,AT,E,U/T */
01158 }
01159 , { { 340, 315, 330, 260, 340} /* UG,AT,A,E */
01160 , { 305, 280, 295, 225, 305} /* UG,AT,A,A */
01161 , { 315, 290, 305, 235, 315} /* UG,AT,A,C */
01162 , { 255, 230, 245, 230, 255} /* UG,AT,A,G */
01163 , { 340, 315, 330, 260, 340} /* UG,AT,A,U/T */
01164 }
01165 , { { 320, 320, 320, 315, 320} /* UG,AT,C,E */
01166 , { 305, 305, 305, 300, 305} /* UG,AT,C,A */
01167 , { 315, 315, 315, 310, 315} /* UG,AT,C,C */
01168 , { 320, 320, 320, 315, 320} /* UG,AT,C,G */
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01170 }
01171 , { { 340, 260, 315, 260, 340} /* UG,AT,G,E */
01172 , { 310, 230, 285, 230, 310} /* UG,AT,G,A */
01173 , { 320, 240, 295, 240, 320} /* UG,AT,G,C */
01174 , { 255, 230, 230, 230, 255} /* UG,AT,G,G */
01175 , { 340, 260, 315, 260, 340} /* UG,AT,G,U/T */
01176 }
01177 , { { 340, 340, 330, 340, 295} /* UG,AT,U/T,E */
01178 , { 340, 340, 330, 340, 295} /* UG,AT,U/T,A */
01179 , { 320, 320, 310, 320, 275} /* UG,AT,U/T,C */
01180 , { 340, 340, 330, 340, 295} /* UG,AT,U/T,G */
01181 , { 275, 275, 265, 275, 265} /* UG,AT,U/T,U/T */
01182 }
01183 }
01184 , { { { 340, 340, 330, 340, 340} /* UG,UA,E,E */
01185 , { 340, 340, 330, 340, 330} /* UG,UA,E,A */
01186 , { 320, 320, 315, 320, 315} /* UG,UA,E,C */
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01189 }
01190 , { { 340, 315, 330, 260, 340} /* UG,UA,A,E */
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01192 , { 315, 290, 305, 235, 315} /* UG,UA,A,C */
01193 , { 255, 230, 245, 230, 255} /* UG,UA,A,G */
01194 , { 340, 315, 330, 260, 340} /* UG,UA,A,U/T */
01195 }
01196 , { { 330, 330, 330, 325, 330} /* UG,UA,C,E */
01197 , { 305, 305, 305, 300, 305} /* UG,UA,C,A */
01198 , { 315, 315, 315, 310, 315} /* UG,UA,C,C */
01199 , { 330, 330, 330, 325, 330} /* UG,UA,C,G */
01200 , { 310, 310, 310, 305, 310} /* UG,UA,C,U/T */
01201 }
01202 , { { 335, 255, 310, 255, 335} /* UG,UA,G,E */
01203 , { 255, 230, 230, 230, 255} /* UG,UA,G,A */
01204 , { 315, 235, 290, 235, 315} /* UG,UA,G,C */
01205 , { 255, 230, 230, 230, 255} /* UG,UA,G,G */
01206 , { 335, 255, 310, 255, 335} /* UG,UA,G,U/T */
01207 }
01208 , { { 340, 340, 330, 340, 295} /* UG,UA,U/T,E */
01209 , { 340, 340, 330, 340, 295} /* UG,UA,U/T,A */
01210 , { 320, 320, 310, 320, 275} /* UG,UA,U/T,C */
01211 , { 340, 340, 330, 340, 295} /* UG,UA,U/T,G */
01212 , { 275, 275, 265, 275, 265} /* UG,UA,U/T,U/T */
01213 }
01214 }
01215 , { { { 340, 340, 330, 340, 340} /* UG,NN,E,E */
01216 , { 340, 340, 330, 340, 330} /* UG,NN,E,A */
01217 , { 330, 330, 320, 330, 330} /* UG,NN,E,C */
01218 , { 340, 340, 330, 340, 330} /* UG,NN,E,G */
01219 , { 340, 330, 330, 330, 340} /* UG,NN,E,U/T */
01220 }
01221 , { { 340, 315, 330, 260, 340} /* UG,NN,A,E */
01222 , { 315, 290, 305, 235, 315} /* UG,NN,A,A */
01223 , { 330, 305, 320, 250, 330} /* UG,NN,A,C */
01224 , { 260, 235, 250, 235, 260} /* UG,NN,A,G */
01225 , { 340, 315, 330, 260, 340} /* UG,NN,A,U/T */
01226 }
01227 , { { 330, 330, 330, 325, 330} /* UG,NN,C,E */
01228 , { 320, 320, 320, 315, 320} /* UG,NN,C,A */
01229 , { 320, 320, 320, 315, 320} /* UG,NN,C,C */
01230 , { 330, 330, 330, 325, 330} /* UG,NN,C,G */
01231 , { 320, 320, 320, 315, 320} /* UG,NN,C,U/T */
01232 }
01233 , { { 340, 260, 315, 260, 340} /* UG,NN,G,E */
01234 , { 315, 235, 290, 235, 315} /* UG,NN,G,A */
01235 , { 325, 245, 300, 245, 325} /* UG,NN,G,C */
01236 , { 260, 235, 235, 235, 260} /* UG,NN,G,G */
01237 , { 340, 260, 315, 260, 340} /* UG,NN,G,U/T */
01238 }
01239 , { { 340, 340, 330, 340, 295} /* UG,NN,U/T,E */
01240 , { 340, 340, 330, 340, 295} /* UG,NN,U/T,A */
01241 , { 330, 330, 320, 330, 285} /* UG,NN,U/T,C */
01242 , { 340, 340, 330, 340, 295} /* UG,NN,U/T,G */
01243 , { 295, 295, 285, 295, 285} /* UG,NN,U/T,U/T */
01244 }
01245 }
01246 }
01247 , { { { INF, INF, INF, INF, INF} /* AT,NP,E,E */
01248 , { INF, INF, INF, INF, INF} /* AT,NP,E,A */
01249 , { INF, INF, INF, INF, INF} /* AT,NP,E,C */
01250 , { INF, INF, INF, INF, INF} /* AT,NP,E,G */
01251 , { INF, INF, INF, INF, INF} /* AT,NP,E,U/T */
01252 }
01253 , { { INF, INF, INF, INF, INF} /* AT,NP,A,E */
01254 , { INF, INF, INF, INF, INF} /* AT,NP,A,A */
01255 , { INF, INF, INF, INF, INF} /* AT,NP,A,C */
01256 , { INF, INF, INF, INF, INF} /* AT,NP,A,G */
01257 , { INF, INF, INF, INF, INF} /* AT,NP,A,U/T */
01258 }
01259 , { { INF, INF, INF, INF, INF} /* AT,NP,C,E */
01260 , { INF, INF, INF, INF, INF} /* AT,NP,C,A */
01261 , { INF, INF, INF, INF, INF} /* AT,NP,C,C */
01262 , { INF, INF, INF, INF, INF} /* AT,NP,C,G */
01263 , { INF, INF, INF, INF, INF} /* AT,NP,C,U/T */
01264 }
01265 , { { INF, INF, INF, INF, INF} /* AT,NP,G,E */
01266 , { INF, INF, INF, INF, INF} /* AT,NP,G,A */
01267 , { INF, INF, INF, INF, INF} /* AT,NP,G,C */
01268 , { INF, INF, INF, INF, INF} /* AT,NP,G,G */
01269 , { INF, INF, INF, INF, INF} /* AT,NP,G,U/T */
01270 }
01271 , { { INF, INF, INF, INF, INF} /* AT,NP,U/T,E */
01272 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,A */
01273 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,C */

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01274 , { INF, INF, INF, INF, INF } /* AT,NP,U/T,G */
01275 , { INF, INF, INF, INF, INF } /* AT,NP,U/T,U/T */
01276 }
01277 }
01278 , {{ 295, 285, 275, 285, 295 } /* AT,CG,E,E */
01279 , { 285, 285, 265, 285, 260 } /* AT,CG,E,A */
01280 , { 270, 270, 265, 270, 270 } /* AT,CG,E,C */
01281 , { 280, 280, 260, 280, 260 } /* AT,CG,E,G */
01282 , { 295, 260, 275, 265, 295 } /* AT,CG,E,U/T */
01283 }
01284 , {{ 295, 260, 270, 265, 295 } /* AT,CG,A,E */
01285 , { 255, 220, 230, 225, 255 } /* AT,CG,A,A */
01286 , { 270, 235, 245, 240, 270 } /* AT,CG,A,C */
01287 , { 205, 170, 180, 175, 205 } /* AT,CG,A,G */
01288 , { 295, 260, 270, 265, 295 } /* AT,CG,A,U/T */
01289 }
01290 , {{ 265, 255, 265, 260, 260 } /* AT,CG,C,E */
01291 , { 255, 245, 255, 250, 250 } /* AT,CG,C,A */
01292 , { 265, 255, 265, 260, 260 } /* AT,CG,C,C */
01293 , { 235, 225, 235, 230, 230 } /* AT,CG,C,G */
01294 , { 255, 245, 255, 250, 250 } /* AT,CG,C,U/T */
01295 }
01296 , {{ 285, 200, 275, 200, 285 } /* AT,CG,G,E */
01297 , { 205, 175, 195, 175, 205 } /* AT,CG,G,A */
01298 , { 265, 180, 255, 180, 265 } /* AT,CG,G,C */
01299 , { 205, 175, 195, 175, 205 } /* AT,CG,G,G */
01300 , { 285, 200, 275, 200, 285 } /* AT,CG,G,U/T */
01301 }
01302 , {{ 285, 285, 265, 285, 215 } /* AT,CG,U/T,E */
01303 , { 285, 285, 265, 285, 215 } /* AT,CG,U/T,A */
01304 , { 270, 270, 250, 270, 200 } /* AT,CG,U/T,C */
01305 , { 280, 280, 260, 280, 210 } /* AT,CG,U/T,G */
01306 , { 220, 220, 200, 220, 190 } /* AT,CG,U/T,U/T */
01307 }
01308 }
01309 , {{ 290, 290, 275, 290, 285 } /* AT,GC,E,E */
01310 , { 280, 280, 260, 280, 255 } /* AT,GC,E,A */
01311 , { 270, 270, 260, 270, 265 } /* AT,GC,E,C */
01312 , { 290, 290, 270, 290, 260 } /* AT,GC,E,G */
01313 , { 285, 260, 275, 260, 285 } /* AT,GC,E,U/T */
01314 }
01315 , {{ 285, 250, 260, 255, 285 } /* AT,GC,A,E */
01316 , { 250, 215, 225, 220, 250 } /* AT,GC,A,A */
01317 , { 265, 230, 240, 235, 265 } /* AT,GC,A,C */
01318 , { 200, 165, 175, 170, 200 } /* AT,GC,A,G */
01319 , { 285, 250, 260, 255, 285 } /* AT,GC,A,U/T */
01320 }
01321 , {{ 260, 250, 260, 255, 255 } /* AT,GC,C,E */
01322 , { 250, 240, 250, 245, 245 } /* AT,GC,C,A */
01323 , { 260, 250, 260, 255, 255 } /* AT,GC,C,C */
01324 , { 250, 240, 250, 245, 245 } /* AT,GC,C,G */
01325 , { 255, 245, 255, 250, 250 } /* AT,GC,C,U/T */
01326 }
01327 , {{ 285, 200, 275, 200, 285 } /* AT,GC,G,E */
01328 , { 255, 170, 245, 170, 255 } /* AT,GC,G,A */
01329 , { 240, 155, 230, 155, 240 } /* AT,GC,G,C */
01330 , { 200, 170, 190, 170, 200 } /* AT,GC,G,G */
01331 , { 285, 200, 275, 200, 285 } /* AT,GC,G,U/T */
01332 }
01333 , {{ 290, 290, 270, 290, 220 } /* AT,GC,U/T,E */
01334 , { 280, 280, 260, 280, 210 } /* AT,GC,U/T,A */
01335 , { 270, 270, 250, 270, 200 } /* AT,GC,U/T,C */
01336 , { 290, 290, 270, 290, 220 } /* AT,GC,U/T,G */
01337 , { 220, 220, 200, 220, 190 } /* AT,GC,U/T,U/T */
01338 }
01339 }
01340 , {{ 340, 340, 330, 340, 340 } /* AT,GT,E,E */
01341 , { 330, 330, 315, 330, 315 } /* AT,GT,E,A */
01342 , { 330, 330, 315, 330, 330 } /* AT,GT,E,C */
01343 , { 340, 340, 320, 340, 315 } /* AT,GT,E,G */
01344 , { 340, 330, 330, 330, 340 } /* AT,GT,E,U/T */
01345 }
01346 , {{ 340, 305, 315, 310, 340 } /* AT,GT,A,E */
01347 , { 315, 280, 290, 285, 315 } /* AT,GT,A,A */
01348 , { 330, 295, 305, 300, 330 } /* AT,GT,A,C */
01349 , { 260, 225, 235, 230, 260 } /* AT,GT,A,G */
01350 , { 340, 305, 315, 310, 340 } /* AT,GT,A,U/T */
01351 }
01352 , {{ 315, 305, 315, 310, 310 } /* AT,GT,C,E */
01353 , { 315, 305, 315, 310, 310 } /* AT,GT,C,A */
01354 , { 315, 305, 315, 310, 310 } /* AT,GT,C,C */
01355 , { 305, 295, 305, 300, 300 } /* AT,GT,C,G */
01356 , { 315, 305, 315, 310, 310 } /* AT,GT,C,U/T */
01357 }
01358 , {{ 340, 255, 330, 255, 340 } /* AT,GT,G,E */
01359 , { 315, 230, 305, 230, 315 } /* AT,GT,G,A */
01360 , { 320, 235, 310, 235, 320 } /* AT,GT,G,C */

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01361 , { 260, 230, 250, 230, 260} /* AT,GT,G,G */
01362 , { 340, 255, 330, 255, 340} /* AT,GT,G,U/T */
01363 }
01364 , {{ 340, 340, 320, 340, 275} /* AT,GT,U/T,E */
01365 , { 330, 330, 310, 330, 265} /* AT,GT,U/T,A */
01366 , { 330, 330, 310, 330, 265} /* AT,GT,U/T,C */
01367 , { 340, 340, 320, 340, 275} /* AT,GT,U/T,G */
01368 , { 295, 295, 275, 295, 265} /* AT,GT,U/T,U/T */
01369 }
01370 }
01371 , {{ 340, 340, 330, 340, 340} /* AT,UG,E,E */
01372 , { 340, 340, 320, 340, 315} /* AT,UG,E,A */
01373 , { 330, 330, 315, 330, 330} /* AT,UG,E,C */
01374 , { 340, 340, 320, 340, 315} /* AT,UG,E,G */
01375 , { 340, 330, 330, 330, 340} /* AT,UG,E,U/T */
01376 }
01377 , {{ 340, 305, 315, 310, 340} /* AT,UG,A,E */
01378 , { 315, 280, 290, 285, 315} /* AT,UG,A,A */
01379 , { 330, 295, 305, 300, 330} /* AT,UG,A,C */
01380 , { 260, 225, 235, 230, 260} /* AT,UG,A,G */
01381 , { 340, 305, 315, 310, 340} /* AT,UG,A,U/T */
01382 }
01383 , {{ 315, 305, 315, 310, 310} /* AT,UG,C,E */
01384 , { 315, 305, 315, 310, 310} /* AT,UG,C,A */
01385 , { 315, 305, 315, 310, 310} /* AT,UG,C,C */
01386 , { 300, 290, 300, 295, 295} /* AT,UG,C,G */
01387 , { 315, 305, 315, 310, 310} /* AT,UG,C,U/T */
01388 }
01389 , {{ 340, 255, 330, 255, 340} /* AT,UG,G,E */
01390 , { 260, 230, 250, 230, 260} /* AT,UG,G,A */
01391 , { 325, 240, 315, 240, 325} /* AT,UG,G,C */
01392 , { 260, 230, 250, 230, 260} /* AT,UG,G,G */
01393 , { 340, 255, 330, 255, 340} /* AT,UG,G,U/T */
01394 }
01395 , {{ 340, 340, 320, 340, 275} /* AT,UG,U/T,E */
01396 , { 340, 340, 320, 340, 275} /* AT,UG,U/T,A */
01397 , { 330, 330, 310, 330, 265} /* AT,UG,U/T,C */
01398 , { 340, 340, 320, 340, 275} /* AT,UG,U/T,G */
01399 , { 295, 295, 275, 295, 265} /* AT,UG,U/T,U/T */
01400 }
01401 }
01402 , {{ 340, 340, 330, 340, 340} /* AT,AT,E,E */
01403 , { 340, 340, 320, 340, 310} /* AT,AT,E,A */
01404 , { 320, 320, 310, 320, 320} /* AT,AT,E,C */
01405 , { 340, 340, 320, 340, 310} /* AT,AT,E,G */
01406 , { 340, 310, 330, 310, 340} /* AT,AT,E,U/T */
01407 }
01408 , {{ 340, 305, 315, 310, 340} /* AT,AT,A,E */
01409 , { 305, 270, 280, 275, 305} /* AT,AT,A,A */
01410 , { 315, 280, 290, 285, 315} /* AT,AT,A,C */
01411 , { 255, 220, 230, 225, 255} /* AT,AT,A,G */
01412 , { 340, 305, 315, 310, 340} /* AT,AT,A,U/T */
01413 }
01414 , {{ 315, 305, 315, 310, 310} /* AT,AT,C,E */
01415 , { 300, 290, 300, 295, 295} /* AT,AT,C,A */
01416 , { 310, 300, 310, 305, 305} /* AT,AT,C,C */
01417 , { 315, 305, 315, 310, 310} /* AT,AT,C,G */
01418 , { 305, 295, 305, 300, 300} /* AT,AT,C,U/T */
01419 }
01420 , {{ 340, 255, 330, 255, 340} /* AT,AT,G,E */
01421 , { 310, 225, 300, 225, 310} /* AT,AT,G,A */
01422 , { 320, 235, 310, 235, 320} /* AT,AT,G,C */
01423 , { 255, 225, 245, 225, 255} /* AT,AT,G,G */
01424 , { 340, 255, 330, 255, 340} /* AT,AT,G,U/T */
01425 }
01426 , {{ 340, 340, 320, 340, 275} /* AT,AT,U/T,E */
01427 , { 340, 340, 320, 340, 275} /* AT,AT,U/T,A */
01428 , { 320, 320, 300, 320, 255} /* AT,AT,U/T,C */
01429 , { 340, 340, 320, 340, 275} /* AT,AT,U/T,G */
01430 , { 275, 275, 255, 275, 245} /* AT,AT,U/T,U/T */
01431 }
01432 }
01433 , {{ 340, 340, 325, 340, 340} /* AT,UA,E,E */
01434 , { 340, 340, 320, 340, 310} /* AT,UA,E,A */
01435 , { 320, 320, 310, 320, 315} /* AT,UA,E,C */
01436 , { 340, 340, 325, 340, 320} /* AT,UA,E,G */
01437 , { 340, 310, 325, 310, 340} /* AT,UA,E,U/T */
01438 }
01439 , {{ 340, 305, 315, 310, 340} /* AT,UA,A,E */
01440 , { 310, 275, 285, 310, 310} /* AT,UA,A,A */
01441 , { 315, 280, 290, 285, 315} /* AT,UA,A,C */
01442 , { 255, 220, 230, 225, 255} /* AT,UA,A,G */
01443 , { 340, 305, 315, 310, 340} /* AT,UA,A,U/T */
01444 }
01445 , {{ 325, 315, 325, 320, 320} /* AT,UA,C,E */
01446 , { 300, 290, 300, 295, 295} /* AT,UA,C,A */
01447 , { 310, 300, 310, 305, 305} /* AT,UA,C,C */

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01448 , { 325, 315, 325, 320, 320} /* AT,UA,C,G */
01449 , { 305, 295, 305, 300, 300} /* AT,UA,C,U/T */
01450 }
01451 , { { 335, 250, 325, 250, 335} /* AT,UA,G,E */
01452 , { 255, 225, 245, 225, 255} /* AT,UA,G,A */
01453 , { 315, 230, 305, 230, 315} /* AT,UA,G,C */
01454 , { 255, 225, 245, 225, 255} /* AT,UA,G,G */
01455 , { 335, 250, 325, 250, 335} /* AT,UA,G,U/T */
01456 }
01457 , { { 340, 340, 320, 340, 275} /* AT,UA,U/T,E */
01458 , { 340, 340, 320, 340, 275} /* AT,UA,U/T,A */
01459 , { 320, 320, 300, 320, 255} /* AT,UA,U/T,C */
01460 , { 340, 340, 320, 340, 275} /* AT,UA,U/T,G */
01461 , { 275, 275, 255, 275, 245} /* AT,UA,U/T,U/T */
01462 }
01463 }
01464 , { { { 340, 340, 330, 340, 340} /* AT,NN,E,E */
01465 , { 340, 340, 320, 340, 315} /* AT,NN,E,A */
01466 , { 330, 330, 315, 330, 330} /* AT,NN,E,C */
01467 , { 340, 340, 325, 340, 320} /* AT,NN,E,G */
01468 , { 340, 330, 330, 330, 340} /* AT,NN,E,U/T */
01469 }
01470 , { { 340, 305, 315, 310, 340} /* AT,NN,A,E */
01471 , { 315, 280, 290, 285, 315} /* AT,NN,A,A */
01472 , { 330, 295, 305, 300, 330} /* AT,NN,A,C */
01473 , { 260, 225, 235, 230, 260} /* AT,NN,A,G */
01474 , { 340, 305, 315, 310, 340} /* AT,NN,A,U/T */
01475 }
01476 , { { 325, 315, 325, 320, 320} /* AT,NN,C,E */
01477 , { 315, 305, 315, 310, 310} /* AT,NN,C,A */
01478 , { 315, 305, 315, 310, 310} /* AT,NN,C,C */
01479 , { 325, 315, 325, 320, 320} /* AT,NN,C,G */
01480 , { 315, 305, 315, 310, 310} /* AT,NN,C,U/T */
01481 }
01482 , { { 340, 255, 330, 255, 340} /* AT,NN,G,E */
01483 , { 315, 230, 305, 230, 315} /* AT,NN,G,A */
01484 , { 325, 240, 315, 240, 325} /* AT,NN,G,C */
01485 , { 260, 230, 250, 230, 260} /* AT,NN,G,G */
01486 , { 340, 255, 330, 255, 340} /* AT,NN,G,U/T */
01487 }
01488 , { { 340, 340, 320, 340, 275} /* AT,NN,U/T,E */
01489 , { 340, 340, 320, 340, 275} /* AT,NN,U/T,A */
01490 , { 330, 330, 310, 330, 265} /* AT,NN,U/T,C */
01491 , { 340, 340, 320, 340, 275} /* AT,NN,U/T,G */
01492 , { 295, 295, 275, 295, 265} /* AT,NN,U/T,U/T */
01493 }
01494 }
01495 }
01496 , { { { INF, INF, INF, INF, INF} /* UA,NP,E,E */
01497 , { INF, INF, INF, INF, INF} /* UA,NP,E,A */
01498 , { INF, INF, INF, INF, INF} /* UA,NP,E,C */
01499 , { INF, INF, INF, INF, INF} /* UA,NP,E,G */
01500 , { INF, INF, INF, INF, INF} /* UA,NP,E,U/T */
01501 }
01502 , { { INF, INF, INF, INF, INF} /* UA,NP,A,E */
01503 , { INF, INF, INF, INF, INF} /* UA,NP,A,A */
01504 , { INF, INF, INF, INF, INF} /* UA,NP,A,C */
01505 , { INF, INF, INF, INF, INF} /* UA,NP,A,G */
01506 , { INF, INF, INF, INF, INF} /* UA,NP,A,U/T */
01507 }
01508 , { { INF, INF, INF, INF, INF} /* UA,NP,C,E */
01509 , { INF, INF, INF, INF, INF} /* UA,NP,C,A */
01510 , { INF, INF, INF, INF, INF} /* UA,NP,C,C */
01511 , { INF, INF, INF, INF, INF} /* UA,NP,C,G */
01512 , { INF, INF, INF, INF, INF} /* UA,NP,C,U/T */
01513 }
01514 , { { INF, INF, INF, INF, INF} /* UA,NP,G,E */
01515 , { INF, INF, INF, INF, INF} /* UA,NP,G,A */
01516 , { INF, INF, INF, INF, INF} /* UA,NP,G,C */
01517 , { INF, INF, INF, INF, INF} /* UA,NP,G,G */
01518 , { INF, INF, INF, INF, INF} /* UA,NP,G,U/T */
01519 }
01520 , { { INF, INF, INF, INF, INF} /* UA,NP,U/T,E */
01521 , { INF, INF, INF, INF, INF} /* UA,NP,U/T,A */
01522 , { INF, INF, INF, INF, INF} /* UA,NP,U/T,C */
01523 , { INF, INF, INF, INF, INF} /* UA,NP,U/T,G */
01524 , { INF, INF, INF, INF, INF} /* UA,NP,U/T,U/T */
01525 }
01526 }
01527 , { { { 295, 285, 285, 280, 295} /* UA,CG,E,E */
01528 , { 285, 285, 265, 280, 260} /* UA,CG,E,A */
01529 , { 270, 270, 265, 265, 270} /* UA,CG,E,C */
01530 , { 280, 280, 260, 275, 260} /* UA,CG,E,G */
01531 , { 295, 265, 285, 265, 295} /* UA,CG,E,U/T */
01532 }
01533 , { { 295, 265, 270, 210, 295} /* UA,CG,A,E */
01534 , { 255, 225, 230, 170, 255} /* UA,CG,A,A */

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01535 , { 270, 240, 245, 185, 270} /* UA,CG,A,C */
01536 , { 205, 175, 180, 175, 205} /* UA,CG,A,G */
01537 , { 295, 265, 270, 210, 295} /* UA,CG,A,U/T */
01538 }
01539 , {{ 265, 255, 265, 255, 260} /* UA,CG,C,E */
01540 , { 255, 245, 255, 245, 250} /* UA,CG,C,A */
01541 , { 265, 255, 265, 255, 260} /* UA,CG,C,C */
01542 , { 235, 225, 235, 225, 230} /* UA,CG,C,G */
01543 , { 255, 245, 255, 245, 250} /* UA,CG,C,U/T */
01544 }
01545 , {{ 285, 200, 285, 200, 285} /* UA,CG,G,E */
01546 , { 205, 175, 205, 175, 205} /* UA,CG,G,A */
01547 , { 265, 180, 265, 180, 265} /* UA,CG,G,C */
01548 , { 205, 175, 205, 175, 205} /* UA,CG,G,G */
01549 , { 285, 200, 285, 200, 285} /* UA,CG,G,U/T */
01550 }
01551 , {{ 285, 285, 265, 280, 215} /* UA,CG,U/T,E */
01552 , { 285, 285, 265, 280, 215} /* UA,CG,U/T,A */
01553 , { 270, 270, 250, 265, 200} /* UA,CG,U/T,C */
01554 , { 280, 280, 260, 275, 210} /* UA,CG,U/T,G */
01555 , { 220, 220, 200, 215, 190} /* UA,CG,U/T,U/T */
01556 }
01557 }
01558 , {{{ 290, 290, 285, 285, 285} /* UA,GC,E,E */
01559 , { 280, 280, 260, 275, 255} /* UA,GC,E,A */
01560 , { 270, 270, 260, 265, 265} /* UA,GC,E,C */
01561 , { 290, 290, 270, 285, 260} /* UA,GC,E,G */
01562 , { 285, 260, 285, 255, 285} /* UA,GC,E,U/T */
01563 }
01564 , {{ 285, 255, 260, 200, 285} /* UA,GC,A,E */
01565 , { 250, 220, 225, 165, 250} /* UA,GC,A,A */
01566 , { 265, 235, 240, 180, 265} /* UA,GC,A,C */
01567 , { 200, 170, 175, 170, 200} /* UA,GC,A,G */
01568 , { 285, 255, 260, 200, 285} /* UA,GC,A,U/T */
01569 }
01570 , {{ 260, 250, 260, 250, 255} /* UA,GC,C,E */
01571 , { 250, 240, 250, 240, 245} /* UA,GC,C,A */
01572 , { 260, 250, 260, 250, 255} /* UA,GC,C,C */
01573 , { 250, 240, 250, 240, 245} /* UA,GC,C,G */
01574 , { 255, 245, 255, 245, 250} /* UA,GC,C,U/T */
01575 }
01576 , {{ 285, 200, 285, 200, 285} /* UA,GC,G,E */
01577 , { 255, 170, 255, 170, 255} /* UA,GC,G,A */
01578 , { 240, 155, 240, 155, 240} /* UA,GC,G,C */
01579 , { 200, 170, 200, 170, 200} /* UA,GC,G,G */
01580 , { 285, 200, 285, 200, 285} /* UA,GC,G,U/T */
01581 }
01582 , {{ 290, 290, 270, 285, 220} /* UA,GC,U/T,E */
01583 , { 280, 280, 260, 275, 210} /* UA,GC,U/T,A */
01584 , { 270, 270, 250, 265, 200} /* UA,GC,U/T,C */
01585 , { 290, 290, 270, 285, 220} /* UA,GC,U/T,G */
01586 , { 220, 220, 200, 215, 190} /* UA,GC,U/T,U/T */
01587 }
01588 }
01589 , {{{ 340, 340, 340, 335, 340} /* UA,GT,E,E */
01590 , { 330, 330, 315, 325, 315} /* UA,GT,E,A */
01591 , { 330, 330, 320, 325, 330} /* UA,GT,E,C */
01592 , { 340, 340, 320, 335, 315} /* UA,GT,E,G */
01593 , { 340, 330, 340, 325, 340} /* UA,GT,E,U/T */
01594 }
01595 , {{ 340, 310, 315, 255, 340} /* UA,GT,A,E */
01596 , { 315, 285, 290, 230, 315} /* UA,GT,A,A */
01597 , { 330, 300, 305, 245, 330} /* UA,GT,A,C */
01598 , { 260, 230, 235, 230, 260} /* UA,GT,A,G */
01599 , { 340, 310, 315, 255, 340} /* UA,GT,A,U/T */
01600 }
01601 , {{ 315, 305, 315, 305, 310} /* UA,GT,C,E */
01602 , { 315, 305, 315, 305, 310} /* UA,GT,C,A */
01603 , { 315, 305, 315, 305, 310} /* UA,GT,C,C */
01604 , { 305, 295, 305, 295, 300} /* UA,GT,C,G */
01605 , { 315, 305, 315, 305, 310} /* UA,GT,C,U/T */
01606 }
01607 , {{ 340, 255, 340, 255, 340} /* UA,GT,G,E */
01608 , { 315, 230, 315, 230, 315} /* UA,GT,G,A */
01609 , { 320, 235, 320, 235, 320} /* UA,GT,G,C */
01610 , { 260, 230, 260, 230, 260} /* UA,GT,G,G */
01611 , { 340, 255, 340, 255, 340} /* UA,GT,G,U/T */
01612 }
01613 , {{ 340, 340, 320, 335, 275} /* UA,GT,U/T,E */
01614 , { 330, 330, 310, 325, 265} /* UA,GT,U/T,A */
01615 , { 330, 330, 310, 325, 265} /* UA,GT,U/T,C */
01616 , { 340, 340, 320, 335, 275} /* UA,GT,U/T,G */
01617 , { 295, 295, 275, 290, 265} /* UA,GT,U/T,U/T */
01618 }
01619 }
01620 , {{{ 340, 340, 340, 335, 340} /* UA,UG,E,E */
01621 , { 340, 340, 320, 335, 315} /* UA,UG,E,A */

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01622 , { 330, 330, 325, 325, 330} /* UA,UG,E,C */
01623 , { 340, 340, 320, 335, 315} /* UA,UG,E,G */
01624 , { 340, 330, 340, 325, 340} /* UA,UG,E,U/T */
01625 }
01626 , { { 340, 310, 315, 255, 340} /* UA,UG,A,E */
01627 , { 315, 285, 290, 230, 315} /* UA,UG,A,A */
01628 , { 330, 300, 305, 245, 330} /* UA,UG,A,C */
01629 , { 260, 230, 235, 230, 260} /* UA,UG,A,G */
01630 , { 340, 310, 315, 255, 340} /* UA,UG,A,U/T */
01631 }
01632 , { { 315, 305, 315, 305, 310} /* UA,UG,C,E */
01633 , { 315, 305, 315, 305, 310} /* UA,UG,C,A */
01634 , { 315, 305, 315, 305, 310} /* UA,UG,C,C */
01635 , { 300, 290, 300, 290, 295} /* UA,UG,C,G */
01636 , { 315, 305, 315, 305, 310} /* UA,UG,C,U/T */
01637 }
01638 , { { 340, 255, 340, 255, 340} /* UA,UG,G,E */
01639 , { 260, 230, 260, 230, 260} /* UA,UG,G,A */
01640 , { 325, 240, 325, 240, 325} /* UA,UG,G,C */
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01642 , { 340, 255, 340, 255, 340} /* UA,UG,G,U/T */
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01644 , { { 340, 340, 320, 335, 275} /* UA,UG,U/T,E */
01645 , { 340, 340, 320, 335, 275} /* UA,UG,U/T,A */
01646 , { 330, 330, 310, 325, 265} /* UA,UG,U/T,C */
01647 , { 340, 340, 320, 335, 275} /* UA,UG,U/T,G */
01648 , { 295, 295, 275, 290, 265} /* UA,UG,U/T,U/T */
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01650 }
01651 , { { { 340, 340, 340, 335, 340} /* UA,AT,E,E */
01652 , { 340, 340, 320, 335, 310} /* UA,AT,E,A */
01653 , { 320, 320, 320, 315, 320} /* UA,AT,E,C */
01654 , { 340, 340, 320, 335, 310} /* UA,AT,E,G */
01655 , { 340, 310, 340, 310, 340} /* UA,AT,E,U/T */
01656 }
01657 , { { 340, 310, 315, 255, 340} /* UA,AT,A,E */
01658 , { 305, 275, 280, 220, 305} /* UA,AT,A,A */
01659 , { 315, 285, 290, 230, 315} /* UA,AT,A,C */
01660 , { 255, 225, 230, 225, 255} /* UA,AT,A,G */
01661 , { 340, 310, 315, 255, 340} /* UA,AT,A,U/T */
01662 }
01663 , { { 315, 305, 315, 305, 310} /* UA,AT,C,E */
01664 , { 300, 290, 300, 290, 295} /* UA,AT,C,A */
01665 , { 310, 300, 310, 300, 305} /* UA,AT,C,C */
01666 , { 315, 305, 315, 305, 310} /* UA,AT,C,G */
01667 , { 305, 295, 305, 295, 300} /* UA,AT,C,U/T */
01668 }
01669 , { { 340, 255, 340, 255, 340} /* UA,AT,G,E */
01670 , { 310, 225, 310, 225, 310} /* UA,AT,G,A */
01671 , { 320, 235, 320, 235, 320} /* UA,AT,G,C */
01672 , { 255, 225, 255, 225, 255} /* UA,AT,G,G */
01673 , { 340, 255, 340, 255, 340} /* UA,AT,G,U/T */
01674 }
01675 , { { 340, 340, 320, 335, 275} /* UA,AT,U/T,E */
01676 , { 340, 340, 320, 335, 275} /* UA,AT,U/T,A */
01677 , { 320, 320, 300, 315, 255} /* UA,AT,U/T,C */
01678 , { 340, 340, 320, 335, 275} /* UA,AT,U/T,G */
01679 , { 275, 275, 255, 270, 245} /* UA,AT,U/T,U/T */
01680 }
01681 }
01682 , { { { 340, 340, 335, 335, 340} /* UA,UA,E,E */
01683 , { 340, 340, 320, 335, 310} /* UA,UA,E,A */
01684 , { 320, 320, 315, 315, 315} /* UA,UA,E,C */
01685 , { 340, 340, 325, 335, 320} /* UA,UA,E,G */
01686 , { 340, 310, 335, 310, 340} /* UA,UA,E,U/T */
01687 }
01688 , { { 340, 310, 315, 255, 340} /* UA,UA,A,E */
01689 , { 310, 280, 285, 225, 310} /* UA,UA,A,A */
01690 , { 315, 285, 290, 230, 315} /* UA,UA,A,C */
01691 , { 255, 225, 230, 225, 255} /* UA,UA,A,G */
01692 , { 340, 310, 315, 255, 340} /* UA,UA,A,U/T */
01693 }
01694 , { { 325, 315, 325, 315, 320} /* UA,UA,C,E */
01695 , { 300, 290, 300, 290, 295} /* UA,UA,C,A */
01696 , { 310, 300, 310, 300, 305} /* UA,UA,C,C */
01697 , { 325, 315, 325, 315, 320} /* UA,UA,C,G */
01698 , { 305, 295, 305, 295, 300} /* UA,UA,C,U/T */
01699 }
01700 , { { 335, 250, 335, 250, 335} /* UA,UA,G,E */
01701 , { 255, 225, 255, 225, 255} /* UA,UA,G,A */
01702 , { 315, 230, 315, 230, 315} /* UA,UA,G,C */
01703 , { 255, 225, 255, 225, 255} /* UA,UA,G,G */
01704 , { 335, 250, 335, 250, 335} /* UA,UA,G,U/T */
01705 }
01706 , { { 340, 340, 320, 335, 275} /* UA,UA,U/T,E */
01707 , { 340, 340, 320, 335, 275} /* UA,UA,U/T,A */
01708 , { 320, 320, 300, 315, 255} /* UA,UA,U/T,C */

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01710 , { 275, 275, 255, 270, 245} /* UA,UA,U/T,U/T */
01711 }
01712 }
01713 , {{ { 340, 340, 340, 335, 340} /* UA,NN,E,E */
01714 , { 340, 340, 320, 335, 315} /* UA,NN,E,A */
01715 , { 330, 330, 325, 325, 330} /* UA,NN,E,C */
01716 , { 340, 340, 325, 335, 320} /* UA,NN,E,G */
01717 , { 340, 330, 340, 325, 340} /* UA,NN,E,U/T */
01718 }
01719 , {{ { 340, 310, 315, 255, 340} /* UA,NN,A,E */
01720 , { 315, 285, 290, 230, 315} /* UA,NN,A,A */
01721 , { 330, 300, 305, 245, 330} /* UA,NN,A,C */
01722 , { 260, 230, 235, 230, 260} /* UA,NN,A,G */
01723 , { 340, 310, 315, 255, 340} /* UA,NN,A,U/T */
01724 }
01725 , {{ { 325, 315, 325, 315, 320} /* UA,NN,C,E */
01726 , { 315, 305, 315, 305, 310} /* UA,NN,C,A */
01727 , { 315, 305, 315, 305, 310} /* UA,NN,C,C */
01728 , { 325, 315, 325, 315, 320} /* UA,NN,C,G */
01729 , { 315, 305, 315, 305, 310} /* UA,NN,C,U/T */
01730 }
01731 , {{ { 340, 255, 340, 255, 340} /* UA,NN,G,E */
01732 , { 315, 230, 315, 230, 315} /* UA,NN,G,A */
01733 , { 325, 240, 325, 240, 325} /* UA,NN,G,C */
01734 , { 260, 230, 260, 230, 260} /* UA,NN,G,G */
01735 , { 340, 255, 340, 255, 340} /* UA,NN,G,U/T */
01736 }
01737 , {{ { 340, 340, 320, 335, 275} /* UA,NN,U/T,E */
01738 , { 340, 340, 320, 335, 275} /* UA,NN,U/T,A */
01739 , { 330, 330, 310, 325, 265} /* UA,NN,U/T,C */
01740 , { 340, 340, 320, 335, 275} /* UA,NN,U/T,G */
01741 , { 295, 295, 275, 290, 265} /* UA,NN,U/T,U/T */
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01743 }
01744 }
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01746 , { INF, INF, INF, INF, INF} /* NN,NP,E,A */
01747 , { INF, INF, INF, INF, INF} /* NN,NP,E,C */
01748 , { INF, INF, INF, INF, INF} /* NN,NP,E,G */
01749 , { INF, INF, INF, INF, INF} /* NN,NP,E,U/T */
01750 }
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01752 , { INF, INF, INF, INF, INF} /* NN,NP,A,A */
01753 , { INF, INF, INF, INF, INF} /* NN,NP,A,C */
01754 , { INF, INF, INF, INF, INF} /* NN,NP,A,G */
01755 , { INF, INF, INF, INF, INF} /* NN,NP,A,U/T */
01756 }
01757 , {{ { INF, INF, INF, INF, INF} /* NN,NP,C,E */
01758 , { INF, INF, INF, INF, INF} /* NN,NP,C,A */
01759 , { INF, INF, INF, INF, INF} /* NN,NP,C,C */
01760 , { INF, INF, INF, INF, INF} /* NN,NP,C,G */
01761 , { INF, INF, INF, INF, INF} /* NN,NP,C,U/T */
01762 }
01763 , {{ { INF, INF, INF, INF, INF} /* NN,NP,G,E */
01764 , { INF, INF, INF, INF, INF} /* NN,NP,G,A */
01765 , { INF, INF, INF, INF, INF} /* NN,NP,G,C */
01766 , { INF, INF, INF, INF, INF} /* NN,NP,G,G */
01767 , { INF, INF, INF, INF, INF} /* NN,NP,G,U/T */
01768 }
01769 , {{ { INF, INF, INF, INF, INF} /* NN,NP,U/T,E */
01770 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,A */
01771 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,C */
01772 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,G */
01773 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,U/T */
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01775 }
01776 , {{{ { 295, 285, 285, 285, 295} /* NN,CG,E,E */
01777 , { 285, 285, 275, 285, 275} /* NN,CG,E,A */
01778 , { 270, 270, 270, 270, 270} /* NN,CG,E,C */
01779 , { 280, 280, 270, 280, 270} /* NN,CG,E,G */
01780 , { 295, 270, 285, 270, 295} /* NN,CG,E,U/T */
01781 }
01782 , {{ { 295, 270, 285, 270, 295} /* NN,CG,A,E */
01783 , { 255, 230, 245, 230, 255} /* NN,CG,A,A */
01784 , { 270, 245, 260, 245, 270} /* NN,CG,A,C */
01785 , { 205, 180, 195, 180, 205} /* NN,CG,A,G */
01786 , { 295, 270, 285, 270, 295} /* NN,CG,A,U/T */
01787 }
01788 , {{ { 270, 270, 270, 265, 270} /* NN,CG,C,E */
01789 , { 260, 260, 260, 255, 260} /* NN,CG,C,A */
01790 , { 270, 270, 270, 265, 270} /* NN,CG,C,C */
01791 , { 240, 240, 240, 235, 240} /* NN,CG,C,G */
01792 , { 260, 260, 260, 255, 260} /* NN,CG,C,U/T */
01793 }
01794 , {{ { 285, 205, 285, 205, 285} /* NN,CG,G,E */
01795 , { 205, 180, 205, 180, 205} /* NN,CG,G,A */

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01797 , { 205, 180, 205, 180, 205} /* NN,CG,G,G */
01798 , { 285, 205, 285, 205, 285} /* NN,CG,G,U/T */
01799 }
01800 , { { 285, 285, 275, 285, 235} /* NN,CG,U/T,E */
01801 , { 285, 285, 275, 285, 235} /* NN,CG,U/T,A */
01802 , { 270, 270, 260, 270, 220} /* NN,CG,U/T,C */
01803 , { 280, 280, 270, 280, 230} /* NN,CG,U/T,G */
01804 , { 220, 220, 210, 220, 210} /* NN,CG,U/T,U/T */
01805 }
01806 }
01807 , { { 290, 290, 285, 290, 285} /* NN,GC,E,E */
01808 , { 280, 280, 270, 280, 270} /* NN,GC,E,A */
01809 , { 270, 270, 265, 270, 265} /* NN,GC,E,C */
01810 , { 290, 290, 280, 290, 280} /* NN,GC,E,G */
01811 , { 285, 260, 285, 260, 285} /* NN,GC,E,U/T */
01812 }
01813 , { { 285, 260, 275, 260, 285} /* NN,GC,A,E */
01814 , { 250, 225, 240, 225, 250} /* NN,GC,A,A */
01815 , { 265, 240, 255, 240, 265} /* NN,GC,A,C */
01816 , { 200, 175, 190, 175, 200} /* NN,GC,A,G */
01817 , { 285, 260, 275, 260, 285} /* NN,GC,A,U/T */
01818 }
01819 , { { 265, 265, 265, 260, 265} /* NN,GC,C,E */
01820 , { 255, 255, 255, 250, 255} /* NN,GC,C,A */
01821 , { 265, 265, 265, 260, 265} /* NN,GC,C,C */
01822 , { 255, 255, 255, 250, 255} /* NN,GC,C,G */
01823 , { 260, 260, 260, 255, 260} /* NN,GC,C,U/T */
01824 }
01825 , { { 285, 205, 285, 205, 285} /* NN,GC,G,E */
01826 , { 255, 175, 255, 175, 255} /* NN,GC,G,A */
01827 , { 240, 160, 240, 160, 240} /* NN,GC,G,C */
01828 , { 200, 175, 200, 175, 200} /* NN,GC,G,G */
01829 , { 285, 205, 285, 205, 285} /* NN,GC,G,U/T */
01830 }
01831 , { { 290, 290, 280, 290, 240} /* NN,GC,U/T,E */
01832 , { 280, 280, 270, 280, 230} /* NN,GC,U/T,A */
01833 , { 270, 270, 260, 270, 220} /* NN,GC,U/T,C */
01834 , { 290, 290, 280, 290, 240} /* NN,GC,U/T,G */
01835 , { 220, 220, 210, 220, 210} /* NN,GC,U/T,U/T */
01836 }
01837 }
01838 , { { { 340, 340, 340, 340, 340} /* NN,GT,E,E */
01839 , { 330, 330, 320, 330, 320} /* NN,GT,E,A */
01840 , { 330, 330, 320, 330, 330} /* NN,GT,E,C */
01841 , { 340, 340, 330, 340, 330} /* NN,GT,E,G */
01842 , { 340, 330, 340, 330, 340} /* NN,GT,E,U/T */
01843 }
01844 , { { 340, 315, 330, 315, 340} /* NN,GT,A,E */
01845 , { 315, 290, 305, 290, 315} /* NN,GT,A,A */
01846 , { 330, 305, 320, 305, 330} /* NN,GT,A,C */
01847 , { 260, 235, 250, 235, 260} /* NN,GT,A,G */
01848 , { 340, 315, 330, 315, 340} /* NN,GT,A,U/T */
01849 }
01850 , { { 320, 320, 320, 315, 320} /* NN,GT,C,E */
01851 , { 320, 320, 320, 315, 320} /* NN,GT,C,A */
01852 , { 320, 320, 320, 315, 320} /* NN,GT,C,C */
01853 , { 310, 310, 310, 305, 310} /* NN,GT,C,G */
01854 , { 320, 320, 320, 315, 320} /* NN,GT,C,U/T */
01855 }
01856 , { { 340, 260, 340, 260, 340} /* NN,GT,G,E */
01857 , { 315, 235, 315, 235, 315} /* NN,GT,G,A */
01858 , { 320, 240, 320, 240, 320} /* NN,GT,G,C */
01859 , { 260, 235, 260, 235, 260} /* NN,GT,G,G */
01860 , { 340, 260, 340, 260, 340} /* NN,GT,G,U/T */
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01862 , { { 340, 340, 330, 340, 295} /* NN,GT,U/T,E */
01863 , { 330, 330, 320, 330, 285} /* NN,GT,U/T,A */
01864 , { 330, 330, 320, 330, 285} /* NN,GT,U/T,C */
01865 , { 340, 340, 330, 340, 295} /* NN,GT,U/T,G */
01866 , { 295, 295, 285, 295, 285} /* NN,GT,U/T,U/T */
01867 }
01868 }
01869 , { { { 340, 340, 340, 340, 340} /* NN,UG,E,E */
01870 , { 340, 340, 330, 340, 330} /* NN,UG,E,A */
01871 , { 330, 330, 325, 330, 330} /* NN,UG,E,C */
01872 , { 340, 340, 330, 340, 330} /* NN,UG,E,G */
01873 , { 340, 330, 340, 330, 340} /* NN,UG,E,U/T */
01874 }
01875 , { { 340, 315, 330, 315, 340} /* NN,UG,A,E */
01876 , { 315, 290, 305, 290, 315} /* NN,UG,A,A */
01877 , { 330, 305, 320, 305, 330} /* NN,UG,A,C */
01878 , { 260, 235, 250, 235, 260} /* NN,UG,A,G */
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01881 , { { 320, 320, 320, 315, 320} /* NN,UG,C,E */
01882 , { 320, 320, 320, 315, 320} /* NN,UG,C,A */
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01884 , { 305, 305, 305, 300, 305} /* NN,UG,C,G */
01885 , { 320, 320, 320, 315, 320} /* NN,UG,C,U/T */
01886 }
01887 , { { 340, 260, 340, 260, 340} /* NN,UG,G,E */
01888 , { 260, 235, 260, 235, 260} /* NN,UG,G,A */
01889 , { 325, 245, 325, 245, 325} /* NN,UG,G,C */
01890 , { 260, 235, 260, 235, 260} /* NN,UG,G,G */
01891 , { 340, 260, 340, 260, 340} /* NN,UG,G,U/T */
01892 }
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01894 , { 340, 340, 330, 340, 295} /* NN,UG,U/T,A */
01895 , { 330, 330, 320, 330, 285} /* NN,UG,U/T,C */
01896 , { 340, 340, 330, 340, 295} /* NN,UG,U/T,G */
01897 , { 295, 295, 285, 295, 285} /* NN,UG,U/T,U/T */
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01899 }
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01902 , { 320, 320, 320, 320, 320} /* NN,AT,E,C */
01903 , { 340, 340, 330, 340, 330} /* NN,AT,E,G */
01904 , { 340, 315, 340, 315, 340} /* NN,AT,E,U/T */
01905 }
01906 , { { 340, 315, 330, 315, 340} /* NN,AT,A,E */
01907 , { 305, 280, 295, 280, 305} /* NN,AT,A,A */
01908 , { 315, 290, 305, 290, 315} /* NN,AT,A,C */
01909 , { 255, 230, 245, 230, 255} /* NN,AT,A,G */
01910 , { 340, 315, 330, 315, 340} /* NN,AT,A,U/T */
01911 }
01912 , { { 320, 320, 320, 315, 320} /* NN,AT,C,E */
01913 , { 305, 305, 305, 300, 305} /* NN,AT,C,A */
01914 , { 315, 315, 315, 310, 315} /* NN,AT,C,C */
01915 , { 320, 320, 320, 315, 320} /* NN,AT,C,G */
01916 , { 310, 310, 310, 305, 310} /* NN,AT,C,U/T */
01917 }
01918 , { { 340, 260, 340, 260, 340} /* NN,AT,G,E */
01919 , { 310, 230, 310, 230, 310} /* NN,AT,G,A */
01920 , { 320, 240, 320, 240, 320} /* NN,AT,G,C */
01921 , { 255, 230, 255, 230, 255} /* NN,AT,G,G */
01922 , { 340, 260, 340, 260, 340} /* NN,AT,G,U/T */
01923 }
01924 , { { 340, 340, 330, 340, 295} /* NN,AT,U/T,E */
01925 , { 340, 340, 330, 340, 295} /* NN,AT,U/T,A */
01926 , { 320, 320, 310, 320, 275} /* NN,AT,U/T,C */
01927 , { 340, 340, 330, 340, 295} /* NN,AT,U/T,G */
01928 , { 275, 275, 265, 275, 265} /* NN,AT,U/T,U/T */
01929 }
01930 }
01931 , { { { 340, 340, 335, 340, 340} /* NN,UA,E,E */
01932 , { 340, 340, 330, 340, 330} /* NN,UA,E,A */
01933 , { 320, 320, 315, 320, 315} /* NN,UA,E,C */
01934 , { 340, 340, 330, 340, 330} /* NN,UA,E,G */
01935 , { 340, 315, 335, 315, 340} /* NN,UA,E,U/T */
01936 }
01937 , { { 340, 315, 330, 315, 340} /* NN,UA,A,E */
01938 , { 310, 285, 300, 285, 310} /* NN,UA,A,A */
01939 , { 315, 290, 305, 290, 315} /* NN,UA,A,C */
01940 , { 255, 230, 245, 230, 255} /* NN,UA,A,G */
01941 , { 340, 315, 330, 315, 340} /* NN,UA,A,U/T */
01942 }
01943 , { { 330, 330, 330, 325, 330} /* NN,UA,C,E */
01944 , { 305, 305, 305, 300, 305} /* NN,UA,C,A */
01945 , { 315, 315, 315, 310, 315} /* NN,UA,C,C */
01946 , { 330, 330, 330, 325, 330} /* NN,UA,C,G */
01947 , { 310, 310, 310, 305, 310} /* NN,UA,C,U/T */
01948 }
01949 , { { 335, 255, 335, 255, 335} /* NN,UA,G,E */
01950 , { 255, 230, 255, 230, 255} /* NN,UA,G,A */
01951 , { 315, 235, 315, 235, 315} /* NN,UA,G,C */
01952 , { 255, 230, 255, 230, 255} /* NN,UA,G,G */
01953 , { 335, 255, 335, 255, 335} /* NN,UA,G,U/T */
01954 }
01955 , { { 340, 340, 330, 340, 295} /* NN,UA,U/T,E */
01956 , { 340, 340, 330, 340, 295} /* NN,UA,U/T,A */
01957 , { 320, 320, 310, 320, 275} /* NN,UA,U/T,C */
01958 , { 340, 340, 330, 340, 295} /* NN,UA,U/T,G */
01959 , { 275, 275, 265, 275, 265} /* NN,UA,U/T,U/T */
01960 }
01961 }
01962 , { { { 340, 340, 340, 340, 340} /* NN,NN,E,E */
01963 , { 340, 340, 330, 340, 330} /* NN,NN,E,A */
01964 , { 330, 330, 325, 330, 330} /* NN,NN,E,C */
01965 , { 340, 340, 330, 340, 330} /* NN,NN,E,G */
01966 , { 340, 330, 340, 330, 340} /* NN,NN,E,U/T */
01967 }
01968 , { { 340, 315, 330, 315, 340} /* NN,NN,A,E */
01969 , { 315, 290, 305, 290, 315} /* NN,NN,A,A */

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01970      , {      330,      305,      320,      305,      330} /* NN,NN,A,C */
01971      , {      260,      235,      250,      235,      260} /* NN,NN,A,G */
01972      , {      340,      315,      330,      315,      340} /* NN,NN,A,U/T */
01973      }
01974      , { {      330,      330,      330,      325,      330} /* NN,NN,C,E */
01975      , {      320,      320,      320,      315,      320} /* NN,NN,C,A */
01976      , {      320,      320,      320,      315,      320} /* NN,NN,C,C */
01977      , {      330,      330,      330,      325,      330} /* NN,NN,C,G */
01978      , {      320,      320,      320,      315,      320} /* NN,NN,C,U/T */
01979      }
01980      , { {      340,      260,      340,      260,      340} /* NN,NN,G,E */
01981      , {      315,      235,      315,      235,      315} /* NN,NN,G,A */
01982      , {      325,      245,      325,      245,      325} /* NN,NN,G,C */
01983      , {      260,      235,      260,      235,      260} /* NN,NN,G,G */
01984      , {      340,      260,      340,      260,      340} /* NN,NN,G,U/T */
01985      }
01986      , { {      340,      340,      330,      340,      295} /* NN,NN,U/T,E */
01987      , {      340,      340,      330,      340,      295} /* NN,NN,U/T,A */
01988      , {      330,      330,      320,      330,      285} /* NN,NN,U/T,C */
01989      , {      340,      340,      330,      340,      295} /* NN,NN,U/T,G */
01990      , {      295,      295,      285,      295,      285} /* NN,NN,U/T,U/T */
01991      }
01992      }
01993      }
01994

```

11.97 intl21dH.h

```

00001 PUBLIC int intl21_dH[NBPAIRS+1][NBPAIRS+1][5][5][5] =
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00003      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,A */
00004      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,C */
00005      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,G */
00006      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,U */
00007      }
00008      , { {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,E */
00009      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,A */
00010      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,C */
00011      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,G */
00012      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,U */
00013      }
00014      , { {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,E */
00015      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,A */
00016      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,C */
00017      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,G */
00018      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,U */
00019      }
00020      , { {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E */
00021      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A */
00022      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C */
00023      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G */
00024      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U */
00025      }
00026      , { {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,E */
00027      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,A */
00028      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,C */
00029      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,G */
00030      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,U */
00031      }
00032      }
00033      , {{{ INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E */
00034      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,A */
00035      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,C */
00036      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G */
00037      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,U */
00038      }
00039      , { {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E */
00040      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,A */
00041      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,C */
00042      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,G */
00043      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,U */
00044      }
00045      , { {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E */
00046      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A */
00047      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,C */
00048      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,G */
00049      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,U */
00050      }
00051      , { {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,E */
00052      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,A */
00053      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,C */
00054      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,G */
00055      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,U */
00056      }
00057      , { {      INF,      INF,      INF,      INF,      INF} /* NP,CG,U,E */

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00058 , { INF, INF, INF, INF, INF } /* NP,CG,U,A */
00059 , { INF, INF, INF, INF, INF } /* NP,CG,U,C */
00060 , { INF, INF, INF, INF, INF } /* NP,CG,U,G */
00061 , { INF, INF, INF, INF, INF } /* NP,CG,U,U */
00062 }
00063 }
00064 , { { INF, INF, INF, INF, INF } /* NP,GC,E,E */
00065 , { INF, INF, INF, INF, INF } /* NP,GC,E,A */
00066 , { INF, INF, INF, INF, INF } /* NP,GC,E,C */
00067 , { INF, INF, INF, INF, INF } /* NP,GC,E,G */
00068 , { INF, INF, INF, INF, INF } /* NP,GC,E,U */
00069 }
00070 , { { INF, INF, INF, INF, INF } /* NP,GC,A,E */
00071 , { INF, INF, INF, INF, INF } /* NP,GC,A,A */
00072 , { INF, INF, INF, INF, INF } /* NP,GC,A,C */
00073 , { INF, INF, INF, INF, INF } /* NP,GC,A,G */
00074 , { INF, INF, INF, INF, INF } /* NP,GC,A,U */
00075 }
00076 , { { INF, INF, INF, INF, INF } /* NP,GC,C,E */
00077 , { INF, INF, INF, INF, INF } /* NP,GC,C,A */
00078 , { INF, INF, INF, INF, INF } /* NP,GC,C,C */
00079 , { INF, INF, INF, INF, INF } /* NP,GC,C,G */
00080 , { INF, INF, INF, INF, INF } /* NP,GC,C,U */
00081 }
00082 , { { INF, INF, INF, INF, INF } /* NP,GC,G,E */
00083 , { INF, INF, INF, INF, INF } /* NP,GC,G,A */
00084 , { INF, INF, INF, INF, INF } /* NP,GC,G,C */
00085 , { INF, INF, INF, INF, INF } /* NP,GC,G,G */
00086 , { INF, INF, INF, INF, INF } /* NP,GC,G,U */
00087 }
00088 , { { INF, INF, INF, INF, INF } /* NP,GC,U,E */
00089 , { INF, INF, INF, INF, INF } /* NP,GC,U,A */
00090 , { INF, INF, INF, INF, INF } /* NP,GC,U,C */
00091 , { INF, INF, INF, INF, INF } /* NP,GC,U,G */
00092 , { INF, INF, INF, INF, INF } /* NP,GC,U,U */
00093 }
00094 }
00095 , { { INF, INF, INF, INF, INF } /* NP,GU,E,E */
00096 , { INF, INF, INF, INF, INF } /* NP,GU,E,A */
00097 , { INF, INF, INF, INF, INF } /* NP,GU,E,C */
00098 , { INF, INF, INF, INF, INF } /* NP,GU,E,G */
00099 , { INF, INF, INF, INF, INF } /* NP,GU,E,U */
00100 }
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00102 , { INF, INF, INF, INF, INF } /* NP,GU,A,A */
00103 , { INF, INF, INF, INF, INF } /* NP,GU,A,C */
00104 , { INF, INF, INF, INF, INF } /* NP,GU,A,G */
00105 , { INF, INF, INF, INF, INF } /* NP,GU,A,U */
00106 }
00107 , { { INF, INF, INF, INF, INF } /* NP,GU,C,E */
00108 , { INF, INF, INF, INF, INF } /* NP,GU,C,A */
00109 , { INF, INF, INF, INF, INF } /* NP,GU,C,C */
00110 , { INF, INF, INF, INF, INF } /* NP,GU,C,G */
00111 , { INF, INF, INF, INF, INF } /* NP,GU,C,U */
00112 }
00113 , { { INF, INF, INF, INF, INF } /* NP,GU,G,E */
00114 , { INF, INF, INF, INF, INF } /* NP,GU,G,A */
00115 , { INF, INF, INF, INF, INF } /* NP,GU,G,C */
00116 , { INF, INF, INF, INF, INF } /* NP,GU,G,G */
00117 , { INF, INF, INF, INF, INF } /* NP,GU,G,U */
00118 }
00119 , { { INF, INF, INF, INF, INF } /* NP,GU,U,E */
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00123 , { INF, INF, INF, INF, INF } /* NP,GU,U,U */
00124 }
00125 }
00126 , { { INF, INF, INF, INF, INF } /* NP,UG,E,E */
00127 , { INF, INF, INF, INF, INF } /* NP,UG,E,A */
00128 , { INF, INF, INF, INF, INF } /* NP,UG,E,C */
00129 , { INF, INF, INF, INF, INF } /* NP,UG,E,G */
00130 , { INF, INF, INF, INF, INF } /* NP,UG,E,U */
00131 }
00132 , { { INF, INF, INF, INF, INF } /* NP,UG,A,E */
00133 , { INF, INF, INF, INF, INF } /* NP,UG,A,A */
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00135 , { INF, INF, INF, INF, INF } /* NP,UG,A,G */
00136 , { INF, INF, INF, INF, INF } /* NP,UG,A,U */
00137 }
00138 , { { INF, INF, INF, INF, INF } /* NP,UG,C,E */
00139 , { INF, INF, INF, INF, INF } /* NP,UG,C,A */
00140 , { INF, INF, INF, INF, INF } /* NP,UG,C,C */
00141 , { INF, INF, INF, INF, INF } /* NP,UG,C,G */
00142 , { INF, INF, INF, INF, INF } /* NP,UG,C,U */
00143 }
00144 , { { INF, INF, INF, INF, INF } /* NP,UG,G,E */

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00145 , { INF, INF, INF, INF, INF } /* NP,UG,G,A */
00146 , { INF, INF, INF, INF, INF } /* NP,UG,G,C */
00147 , { INF, INF, INF, INF, INF } /* NP,UG,G,G */
00148 , { INF, INF, INF, INF, INF } /* NP,UG,G,U */
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00150 , { { INF, INF, INF, INF, INF } /* NP,UG,U,E */
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00152 , { INF, INF, INF, INF, INF } /* NP,UG,U,C */
00153 , { INF, INF, INF, INF, INF } /* NP,UG,U,G */
00154 , { INF, INF, INF, INF, INF } /* NP,UG,U,U */
00155 }
00156 }
00157 , { { INF, INF, INF, INF, INF } /* NP,AU,E,E */
00158 , { INF, INF, INF, INF, INF } /* NP,AU,E,A */
00159 , { INF, INF, INF, INF, INF } /* NP,AU,E,C */
00160 , { INF, INF, INF, INF, INF } /* NP,AU,E,G */
00161 , { INF, INF, INF, INF, INF } /* NP,AU,E,U */
00162 }
00163 , { { INF, INF, INF, INF, INF } /* NP,AU,A,E */
00164 , { INF, INF, INF, INF, INF } /* NP,AU,A,A */
00165 , { INF, INF, INF, INF, INF } /* NP,AU,A,C */
00166 , { INF, INF, INF, INF, INF } /* NP,AU,A,G */
00167 , { INF, INF, INF, INF, INF } /* NP,AU,A,U */
00168 }
00169 , { { INF, INF, INF, INF, INF } /* NP,AU,C,E */
00170 , { INF, INF, INF, INF, INF } /* NP,AU,C,A */
00171 , { INF, INF, INF, INF, INF } /* NP,AU,C,C */
00172 , { INF, INF, INF, INF, INF } /* NP,AU,C,G */
00173 , { INF, INF, INF, INF, INF } /* NP,AU,C,U */
00174 }
00175 , { { INF, INF, INF, INF, INF } /* NP,AU,G,E */
00176 , { INF, INF, INF, INF, INF } /* NP,AU,G,A */
00177 , { INF, INF, INF, INF, INF } /* NP,AU,G,C */
00178 , { INF, INF, INF, INF, INF } /* NP,AU,G,G */
00179 , { INF, INF, INF, INF, INF } /* NP,AU,G,U */
00180 }
00181 , { { INF, INF, INF, INF, INF } /* NP,AU,U,E */
00182 , { INF, INF, INF, INF, INF } /* NP,AU,U,A */
00183 , { INF, INF, INF, INF, INF } /* NP,AU,U,C */
00184 , { INF, INF, INF, INF, INF } /* NP,AU,U,G */
00185 , { INF, INF, INF, INF, INF } /* NP,AU,U,U */
00186 }
00187 }
00188 , { { INF, INF, INF, INF, INF } /* NP,UA,E,E */
00189 , { INF, INF, INF, INF, INF } /* NP,UA,E,A */
00190 , { INF, INF, INF, INF, INF } /* NP,UA,E,C */
00191 , { INF, INF, INF, INF, INF } /* NP,UA,E,G */
00192 , { INF, INF, INF, INF, INF } /* NP,UA,E,U */
00193 }
00194 , { { INF, INF, INF, INF, INF } /* NP,UA,A,E */
00195 , { INF, INF, INF, INF, INF } /* NP,UA,A,A */
00196 , { INF, INF, INF, INF, INF } /* NP,UA,A,C */
00197 , { INF, INF, INF, INF, INF } /* NP,UA,A,G */
00198 , { INF, INF, INF, INF, INF } /* NP,UA,A,U */
00199 }
00200 , { { INF, INF, INF, INF, INF } /* NP,UA,C,E */
00201 , { INF, INF, INF, INF, INF } /* NP,UA,C,A */
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00203 , { INF, INF, INF, INF, INF } /* NP,UA,C,G */
00204 , { INF, INF, INF, INF, INF } /* NP,UA,C,U */
00205 }
00206 , { { INF, INF, INF, INF, INF } /* NP,UA,G,E */
00207 , { INF, INF, INF, INF, INF } /* NP,UA,G,A */
00208 , { INF, INF, INF, INF, INF } /* NP,UA,G,C */
00209 , { INF, INF, INF, INF, INF } /* NP,UA,G,G */
00210 , { INF, INF, INF, INF, INF } /* NP,UA,G,U */
00211 }
00212 , { { INF, INF, INF, INF, INF } /* NP,UA,U,E */
00213 , { INF, INF, INF, INF, INF } /* NP,UA,U,A */
00214 , { INF, INF, INF, INF, INF } /* NP,UA,U,C */
00215 , { INF, INF, INF, INF, INF } /* NP,UA,U,G */
00216 , { INF, INF, INF, INF, INF } /* NP,UA,U,U */
00217 }
00218 }
00219 , { { INF, INF, INF, INF, INF } /* NP,NN,E,E */
00220 , { INF, INF, INF, INF, INF } /* NP,NN,E,A */
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00223 , { INF, INF, INF, INF, INF } /* NP,NN,E,U */
00224 }
00225 , { { INF, INF, INF, INF, INF } /* NP,NN,A,E */
00226 , { INF, INF, INF, INF, INF } /* NP,NN,A,A */
00227 , { INF, INF, INF, INF, INF } /* NP,NN,A,C */
00228 , { INF, INF, INF, INF, INF } /* NP,NN,A,G */
00229 , { INF, INF, INF, INF, INF } /* NP,NN,A,U */
00230 }
00231 , { { INF, INF, INF, INF, INF } /* NP,NN,C,E */

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00234 , { INF, INF, INF, INF, INF } /* NP,NN,C,G */
00235 , { INF, INF, INF, INF, INF } /* NP,NN,C,U */
00236 }
00237 , { { INF, INF, INF, INF, INF } /* NP,NN,G,E */
00238 , { INF, INF, INF, INF, INF } /* NP,NN,G,A */
00239 , { INF, INF, INF, INF, INF } /* NP,NN,G,C */
00240 , { INF, INF, INF, INF, INF } /* NP,NN,G,G */
00241 , { INF, INF, INF, INF, INF } /* NP,NN,G,U */
00242 }
00243 , { { INF, INF, INF, INF, INF } /* NP,NN,U,E */
00244 , { INF, INF, INF, INF, INF } /* NP,NN,U,A */
00245 , { INF, INF, INF, INF, INF } /* NP,NN,U,C */
00246 , { INF, INF, INF, INF, INF } /* NP,NN,U,G */
00247 , { INF, INF, INF, INF, INF } /* NP,NN,U,U */
00248 }
00249 }
00250 }
00251 , { { { INF, INF, INF, INF, INF } /* CG,NP,E,E */
00252 , { INF, INF, INF, INF, INF } /* CG,NP,E,A */
00253 , { INF, INF, INF, INF, INF } /* CG,NP,E,C */
00254 , { INF, INF, INF, INF, INF } /* CG,NP,E,G */
00255 , { INF, INF, INF, INF, INF } /* CG,NP,E,U */
00256 }
00257 , { { INF, INF, INF, INF, INF } /* CG,NP,A,E */
00258 , { INF, INF, INF, INF, INF } /* CG,NP,A,A */
00259 , { INF, INF, INF, INF, INF } /* CG,NP,A,C */
00260 , { INF, INF, INF, INF, INF } /* CG,NP,A,G */
00261 , { INF, INF, INF, INF, INF } /* CG,NP,A,U */
00262 }
00263 , { { INF, INF, INF, INF, INF } /* CG,NP,C,E */
00264 , { INF, INF, INF, INF, INF } /* CG,NP,C,A */
00265 , { INF, INF, INF, INF, INF } /* CG,NP,C,C */
00266 , { INF, INF, INF, INF, INF } /* CG,NP,C,G */
00267 , { INF, INF, INF, INF, INF } /* CG,NP,C,U */
00268 }
00269 , { { INF, INF, INF, INF, INF } /* CG,NP,G,E */
00270 , { INF, INF, INF, INF, INF } /* CG,NP,G,A */
00271 , { INF, INF, INF, INF, INF } /* CG,NP,G,C */
00272 , { INF, INF, INF, INF, INF } /* CG,NP,G,G */
00273 , { INF, INF, INF, INF, INF } /* CG,NP,G,U */
00274 }
00275 , { { INF, INF, INF, INF, INF } /* CG,NP,U,E */
00276 , { INF, INF, INF, INF, INF } /* CG,NP,U,A */
00277 , { INF, INF, INF, INF, INF } /* CG,NP,U,C */
00278 , { INF, INF, INF, INF, INF } /* CG,NP,U,G */
00279 , { INF, INF, INF, INF, INF } /* CG,NP,U,U */
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00293 }
00294 , { { 350, 350, 350, 350, 350 } /* CG,CG,C,E */
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00296 , { 350, 350, 350, 350, 350 } /* CG,CG,C,C */
00297 , { 350, 350, 350, 350, 350 } /* CG,CG,C,G */
00298 , { 350, 350, 350, 350, 350 } /* CG,CG,C,U */
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00301 , { -230, -230, -230, -230, -230 } /* CG,CG,G,A */
00302 , { 350, -230, 350, -230, 350 } /* CG,CG,G,C */
00303 , { -230, -230, -230, -230, -230 } /* CG,CG,G,G */
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00309 , { 350, 350, 350, 350, -670 } /* CG,CG,U,G */
00310 , { -670, -670, -670, -670, -670 } /* CG,CG,U,U */
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00312 }
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00316 , { 350, 350, 350, 350, 350 } /* CG,GC,E,G */
00317 , { 640, 640, 350, 350, 350 } /* CG,GC,E,U */
00318 }

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00326 ,{ 350, 160, 350, 350, 350} /* CG,GC,C,A */
00327 ,{ 780, 350, 780, 350, 350} /* CG,GC,C,C */
00328 ,{ 350, 350, 350, 350, 350} /* CG,GC,C,G */
00329 ,{ 640, 640, 350, 350, 350} /* CG,GC,C,U */
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00346 ,{ 850, 850, 850, 850, 850} /* CG,GU,E,C */
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00348 ,{ 850, 850, 850, 850, 850} /* CG,GU,E,U */
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00352 ,{ 850, 850, 850, 280, 850} /* CG,GU,A,C */
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00364 ,{ 850, 280, 850, 280, 850} /* CG,GU,G,C */
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00372 ,{ -160, -160, -160, -160, -160} /* CG,GU,U,U */
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00374 }
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00378 ,{ 850, 850, 850, 850, 850} /* CG,UG,E,G */
00379 ,{ 850, 850, 850, 850, 850} /* CG,UG,E,U */
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00389 ,{ 850, 850, 850, 850, 850} /* CG,UG,C,C */
00390 ,{ 850, 850, 850, 850, 850} /* CG,UG,C,G */
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00394 ,{ 280, 280, 280, 280, 280} /* CG,UG,G,A */
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00396 ,{ 280, 280, 280, 280, 280} /* CG,UG,G,G */
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00405 }
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00433 ,{ 850, 850, 850, 850, -160} /* CG,AU,U,G */
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00436 }
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00439 ,{ 850, 850, 850, 850, 850} /* CG,UA,E,C */
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00470 ,{ 850, 850, 850, 850, 850} /* CG,NN,E,C */
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00522 , { INF, INF, INF, INF, INF} /* GC,NP,G,U */
00523 }
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00528 , { INF, INF, INF, INF, INF} /* GC,NP,U,U */
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00578 , { 350, 350, 350, 350, 350} /* GC,GC,C,U */
00579 }

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00595 ,{ 850, 850, 850, 850, 850} /* GC,GU,E,C */
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00608 ,{ 850, 850, 850, 850, 850} /* GC,GU,C,G */
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00613 ,{ 850, 280, 850, 280, 850} /* GC,GU,G,C */
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00621 ,{ -160, -160, -160, -160, -160} /* GC,GU,U,U */
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00623 }
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00626 ,{ 850, 850, 850, 850, 850} /* GC,UG,E,C */
00627 ,{ 850, 850, 850, 850, 850} /* GC,UG,E,G */
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00637 ,{ 850, 850, 850, 850, 850} /* GC,UG,C,A */
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00643 ,{ 280, 280, 280, 280, 280} /* GC,UG,G,A */
00644 ,{ 850, 280, 850, 280, 850} /* GC,UG,G,C */
00645 ,{ 280, 280, 280, 280, 280} /* GC,UG,G,G */
00646 ,{ 850, 280, 850, 280, 850} /* GC,UG,G,U */
00647 }
00648 ,{{{ 850, 850, 850, 850, -160} /* GC,UG,U,E */
00649 ,{ 850, 850, 850, 850, -160} /* GC,UG,U,A */
00650 ,{ 850, 850, 850, 850, -160} /* GC,UG,U,C */
00651 ,{ 850, 850, 850, 850, -160} /* GC,UG,U,G */
00652 ,{ -160, -160, -160, -160, -160} /* GC,UG,U,U */
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00654 }
00655 ,{{{ 850, 850, 850, 850, 850} /* GC,AU,E,E */
00656 ,{ 850, 850, 850, 850, 850} /* GC,AU,E,A */
00657 ,{ 850, 850, 850, 850, 850} /* GC,AU,E,C */
00658 ,{ 850, 850, 850, 850, 850} /* GC,AU,E,G */
00659 ,{ 850, 850, 850, 850, 850} /* GC,AU,E,U */
00660 }
00661 ,{{{ 850, 850, 850, 850, 850} /* GC,AU,A,E */
00662 ,{ 850, 850, 850, 850, 850} /* GC,AU,A,A */
00663 ,{ 850, 850, 850, 850, 850} /* GC,AU,A,C */
00664 ,{ 280, 280, 280, 280, 280} /* GC,AU,A,G */
00665 ,{ 850, 850, 850, 850, 850} /* GC,AU,A,U */
00666 }

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00667 ,{{ 850, 850, 850, 850, 850} /* GC,AU,C,E */
00668 ,{ 850, 850, 850, 850, 850} /* GC,AU,C,A */
00669 ,{ 850, 850, 850, 850, 850} /* GC,AU,C,C */
00670 ,{ 850, 850, 850, 850, 850} /* GC,AU,C,G */
00671 ,{ 850, 850, 850, 850, 850} /* GC,AU,C,U */
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00673 ,{{ 850, 280, 850, 280, 850} /* GC,AU,G,E */
00674 ,{ 850, 280, 850, 280, 850} /* GC,AU,G,A */
00675 ,{ 850, 280, 850, 280, 850} /* GC,AU,G,C */
00676 ,{ 280, 280, 280, 280, 280} /* GC,AU,G,G */
00677 ,{ 850, 280, 850, 280, 850} /* GC,AU,G,U */
00678 }
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00680 ,{ 850, 850, 850, 850, -160} /* GC,AU,U,A */
00681 ,{ 850, 850, 850, 850, -160} /* GC,AU,U,C */
00682 ,{ 850, 850, 850, 850, -160} /* GC,AU,U,G */
00683 ,{ -160, -160, -160, -160, -160} /* GC,AU,U,U */
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00685 }
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00687 ,{ 850, 850, 850, 850, 850} /* GC,UA,E,A */
00688 ,{ 850, 850, 850, 850, 850} /* GC,UA,E,C */
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00690 ,{ 850, 850, 850, 850, 850} /* GC,UA,E,U */
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00692 ,{{ 850, 850, 850, 850, 850} /* GC,UA,A,E */
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00694 ,{ 850, 850, 850, 850, 850} /* GC,UA,A,C */
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00705 ,{ 280, 280, 280, 280, 280} /* GC,UA,G,A */
00706 ,{ 850, 280, 850, 280, 850} /* GC,UA,G,C */
00707 ,{ 280, 280, 280, 280, 280} /* GC,UA,G,G */
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00710 ,{{ 850, 850, 850, 850, -160} /* GC,UA,U,E */
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00712 ,{ 850, 850, 850, 850, -160} /* GC,UA,U,C */
00713 ,{ 850, 850, 850, 850, -160} /* GC,UA,U,G */
00714 ,{ -160, -160, -160, -160, -160} /* GC,UA,U,U */
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00716 }
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00718 ,{ 850, 850, 850, 850, 850} /* GC,NN,E,A */
00719 ,{ 850, 850, 850, 850, 850} /* GC,NN,E,C */
00720 ,{ 850, 850, 850, 850, 850} /* GC,NN,E,G */
00721 ,{ 850, 850, 850, 850, 850} /* GC,NN,E,U */
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00723 ,{{ 850, 850, 850, 850, 850} /* GC,NN,A,E */
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00725 ,{ 850, 850, 850, 850, 850} /* GC,NN,A,C */
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00727 ,{ 850, 850, 850, 850, 850} /* GC,NN,A,U */
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00733 ,{ 850, 850, 850, 850, 850} /* GC,NN,C,U */
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00736 ,{ 850, 280, 850, 280, 850} /* GC,NN,G,A */
00737 ,{ 850, 280, 850, 280, 850} /* GC,NN,G,C */
00738 ,{ 280, 280, 280, 280, 280} /* GC,NN,G,G */
00739 ,{ 850, 280, 850, 280, 850} /* GC,NN,G,U */
00740 }
00741 ,{{ 850, 850, 850, 850, -160} /* GC,NN,U,E */
00742 ,{ 850, 850, 850, 850, -160} /* GC,NN,U,A */
00743 ,{ 850, 850, 850, 850, -160} /* GC,NN,U,C */
00744 ,{ 850, 850, 850, 850, -160} /* GC,NN,U,G */
00745 ,{ -160, -160, -160, -160, -160} /* GC,NN,U,U */
00746 }
00747 }
00748 }
00749 ,{{{ INF, INF, INF, INF, INF} /* GU,NP,E,E */
00750 ,{ INF, INF, INF, INF, INF} /* GU,NP,E,A */
00751 ,{ INF, INF, INF, INF, INF} /* GU,NP,E,C */
00752 ,{ INF, INF, INF, INF, INF} /* GU,NP,E,G */
00753 ,{ INF, INF, INF, INF, INF} /* GU,NP,E,U */
```

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00755      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,E */
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00757      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,C */
00758      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,G */
00759      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U */
00760      }
00761      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E */
00762      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A */
00763      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C */
00764      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G */
00765      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U */
00766      }
00767      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E */
00768      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A */
00769      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C */
00770      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G */
00771      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U */
00772      }
00773      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E */
00774      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A */
00775      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C */
00776      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G */
00777      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U */
00778      }
00779      }
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00781      ,{{      850,      850,      850,      850,      850} /* GU,CG,E,A */
00782      ,{{      850,      850,      850,      850,      850} /* GU,CG,E,C */
00783      ,{{      850,      850,      850,      850,      850} /* GU,CG,E,G */
00784      ,{{      850,      850,      850,      850,      850} /* GU,CG,E,U */
00785      }
00786      ,{{{      850,      850,      850,      850,      850} /* GU,CG,A,E */
00787      ,{{      850,      690,      850,      240,      850} /* GU,CG,A,A */
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00790      ,{{      850,      850,      850,      850,      850} /* GU,CG,A,U */
00791      }
00792      ,{{{      850,      850,      850,      850,      850} /* GU,CG,C,E */
00793      ,{{      850,      850,      850,      850,      850} /* GU,CG,C,A */
00794      ,{{      850,      850,      850,      850,      850} /* GU,CG,C,C */
00795      ,{{      850,      850,      850,      850,      850} /* GU,CG,C,G */
00796      ,{{      850,      850,      130,      850,      850} /* GU,CG,C,U */
00797      }
00798      ,{{{      850,      280,      850,      280,      850} /* GU,CG,G,E */
00799      ,{{      280,      280,      280,      280,      280} /* GU,CG,G,A */
00800      ,{{      850,      280,      850,      280,      850} /* GU,CG,G,C */
00801      ,{{      280,      280,      280,      280,      280} /* GU,CG,G,G */
00802      ,{{      850,      280,      850,      280,      850} /* GU,CG,G,U */
00803      }
00804      ,{{{      850,      850,      850,      850,      -160} /* GU,CG,U,E */
00805      ,{{      850,      850,      850,      850,      -160} /* GU,CG,U,A */
00806      ,{{      850,      850,      850,      850,      -160} /* GU,CG,U,C */
00807      ,{{      850,      850,      850,      850,      -160} /* GU,CG,U,G */
00808      ,{{      -160,      -160,      -160,      -160,      -160} /* GU,CG,U,U */
00809      }
00810      }
00811      ,{{{      850,      850,      850,      850,      850} /* GU,GC,E,E */
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00813      ,{{      850,      850,      850,      850,      850} /* GU,GC,E,C */
00814      ,{{      850,      850,      850,      850,      850} /* GU,GC,E,G */
00815      ,{{      850,      850,      850,      850,      850} /* GU,GC,E,U */
00816      }
00817      ,{{{      850,      850,      850,      850,      850} /* GU,GC,A,E */
00818      ,{{      850,      850,      850,      850,      850} /* GU,GC,A,A */
00819      ,{{      850,      850,      850,      850,      850} /* GU,GC,A,C */
00820      ,{{      280,      280,      280,      280,      280} /* GU,GC,A,G */
00821      ,{{      850,      850,      850,      850,      850} /* GU,GC,A,U */
00822      }
00823      ,{{{      850,      850,      850,      850,      850} /* GU,GC,C,E */
00824      ,{{      850,      850,      850,      850,      850} /* GU,GC,C,A */
00825      ,{{      850,      850,      850,      850,      850} /* GU,GC,C,C */
00826      ,{{      850,      850,      850,      850,      850} /* GU,GC,C,G */
00827      ,{{      850,      850,      850,      850,      850} /* GU,GC,C,U */
00828      }
00829      ,{{{      850,      280,      850,      280,      850} /* GU,GC,G,E */
00830      ,{{      850,      280,      850,      280,      850} /* GU,GC,G,A */
00831      ,{{      850,      280,      850,      280,      850} /* GU,GC,G,C */
00832      ,{{      280,      280,      280,      280,      280} /* GU,GC,G,G */
00833      ,{{      850,      280,      850,      280,      850} /* GU,GC,G,U */
00834      }
00835      ,{{{      850,      850,      850,      850,      -160} /* GU,GC,U,E */
00836      ,{{      850,      850,      850,      850,      -160} /* GU,GC,U,A */
00837      ,{{      850,      850,      850,      850,      -160} /* GU,GC,U,C */
00838      ,{{      850,      850,      850,      850,      -160} /* GU,GC,U,G */
00839      ,{{      -160,      -160,      -160,      -160,      -160} /* GU,GC,U,U */
00840      }

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00845     , { 1350, 1350, 1350, 1350, 1350} /* GU, GU, E, G */
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00848     ,{{ { 1350, 1350, 1350, 1350, 1350} /* GU, GU, A, E */
00849     , { 1350, 1350, 1350, 1350, 1350} /* GU, GU, A, A */
00850     , { 1350, 1350, 1350, 1350, 1350} /* GU, GU, A, C */
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00866     ,{{ { 1350, 1350, 1350, 1350, 340} /* GU, GU, U, E */
00867     , { 1350, 1350, 1350, 1350, 340} /* GU, GU, U, A */
00868     , { 1350, 1350, 1350, 1350, 340} /* GU, GU, U, C */
00869     , { 1350, 1350, 1350, 1350, 340} /* GU, GU, U, G */
00870     , { 340, 340, 340, 340, 340} /* GU, GU, U, U */
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00877     , { 1350, 1350, 1350, 1350, 1350} /* GU, UG, E, U */
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00903     }
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00920     , { 1350, 1350, 1350, 1350, 1350} /* GU, AU, C, U */
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00922     ,{{ { 1350, 780, 1350, 780, 1350} /* GU, AU, G, E */
00923     , { 1350, 780, 1350, 780, 1350} /* GU, AU, G, A */
00924     , { 1350, 780, 1350, 780, 1350} /* GU, AU, G, C */
00925     , { 780, 780, 780, 780, 780} /* GU, AU, G, G */
00926     , { 1350, 780, 1350, 780, 1350} /* GU, AU, G, U */
00927     }

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00934 }
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00937 ,{ 1350, 1350, 1350, 1350, 1350} /* GU,UA,E,C */
00938 ,{ 1350, 1350, 1350, 1350, 1350} /* GU,UA,E,G */
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00965 }
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00972 ,{{{ 1350, 1350, 1350, 1350, 1350} /* GU,NN,A,E */
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00974 ,{ 1350, 1350, 1350, 1350, 1350} /* GU,NN,A,C */
00975 ,{ 780, 780, 780, 780, 780} /* GU,NN,A,G */
00976 ,{ 1350, 1350, 1350, 1350, 1350} /* GU,NN,A,U */
00977 }
00978 ,{{{ 1350, 1350, 1350, 1350, 1350} /* GU,NN,C,E */
00979 ,{ 1350, 1350, 1350, 1350, 1350} /* GU,NN,C,A */
00980 ,{ 1350, 1350, 1350, 1350, 1350} /* GU,NN,C,C */
00981 ,{ 1350, 1350, 1350, 1350, 1350} /* GU,NN,C,G */
00982 ,{ 1350, 1350, 1350, 1350, 1350} /* GU,NN,C,U */
00983 }
00984 ,{{{ 1350, 780, 1350, 780, 1350} /* GU,NN,G,E */
00985 ,{ 1350, 780, 1350, 780, 1350} /* GU,NN,G,A */
00986 ,{ 1350, 780, 1350, 780, 1350} /* GU,NN,G,C */
00987 ,{ 780, 780, 780, 780, 780} /* GU,NN,G,G */
00988 ,{ 1350, 780, 1350, 780, 1350} /* GU,NN,G,U */
00989 }
00990 ,{{{ 1350, 1350, 1350, 1350, 340} /* GU,NN,U,E */
00991 ,{ 1350, 1350, 1350, 1350, 340} /* GU,NN,U,A */
00992 ,{ 1350, 1350, 1350, 1350, 340} /* GU,NN,U,C */
00993 ,{ 1350, 1350, 1350, 1350, 340} /* GU,NN,U,G */
00994 ,{ 340, 340, 340, 340, 340} /* GU,NN,U,U */
00995 }
00996 }
00997 }
00998 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E,E */
00999 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,A */
01000 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,C */
01001 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,G */
01002 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,U */
01003 }
01004 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,E */
01005 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,A */
01006 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,C */
01007 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,G */
01008 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,U */
01009 }
01010 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,C,E */
01011 ,{ INF, INF, INF, INF, INF} /* UG,NP,C,A */
01012 ,{ INF, INF, INF, INF, INF} /* UG,NP,C,C */
01013 ,{ INF, INF, INF, INF, INF} /* UG,NP,C,G */
01014 ,{ INF, INF, INF, INF, INF} /* UG,NP,C,U */

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01017     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,G,A */
01018     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,G,C */
01019     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,G,G */
01020     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,G,U */
01021     }
01022     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,U,E */
01023     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,U,A */
01024     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,U,C */
01025     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,U,G */
01026     ,{{    INF,    INF,    INF,    INF,    INF} /* UG,NP,U,U */
01027     }
01028     }
01029     ,{{{    850,    850,    850,    850,    850} /* UG,CG,E,E */
01030     ,{{    850,    850,    850,    850,    850} /* UG,CG,E,A */
01031     ,{{    850,    850,    850,    850,    850} /* UG,CG,E,C */
01032     ,{{    850,    850,    850,    850,    850} /* UG,CG,E,G */
01033     ,{{    850,    850,    850,    850,    850} /* UG,CG,E,U */
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01035     ,{{    850,    850,    850,    280,    850} /* UG,CG,A,E */
01036     ,{{    850,    850,    850,    280,    850} /* UG,CG,A,A */
01037     ,{{    850,    850,    850,    280,    850} /* UG,CG,A,C */
01038     ,{{    280,    280,    280,    280,    280} /* UG,CG,A,G */
01039     ,{{    850,    850,    850,    280,    850} /* UG,CG,A,U */
01040     }
01041     ,{{{    850,    850,    850,    850,    850} /* UG,CG,C,E */
01042     ,{{    850,    850,    850,    850,    850} /* UG,CG,C,A */
01043     ,{{    850,    850,    850,    850,    850} /* UG,CG,C,C */
01044     ,{{    850,    850,    850,    850,    850} /* UG,CG,C,G */
01045     ,{{    850,    850,    850,    850,    850} /* UG,CG,C,U */
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01047     ,{{{    850,    280,    850,    280,    850} /* UG,CG,G,E */
01048     ,{{    280,    280,    280,    280,    280} /* UG,CG,G,A */
01049     ,{{    850,    280,    850,    280,    850} /* UG,CG,G,C */
01050     ,{{    280,    280,    280,    280,    280} /* UG,CG,G,G */
01051     ,{{    850,    280,    850,    280,    850} /* UG,CG,G,U */
01052     }
01053     ,{{{    850,    850,    850,    850,   -160} /* UG,CG,U,E */
01054     ,{{    850,    850,    850,    850,   -160} /* UG,CG,U,A */
01055     ,{{    850,    850,    850,    850,   -160} /* UG,CG,U,C */
01056     ,{{    850,    850,    850,    850,   -160} /* UG,CG,U,G */
01057     ,{{   -160,   -160,   -160,   -160,   -160} /* UG,CG,U,U */
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01059     }
01060     ,{{{    850,    850,    850,    850,    850} /* UG,GC,E,E */
01061     ,{{    850,    850,    850,    850,    850} /* UG,GC,E,A */
01062     ,{{    850,    850,    850,    850,    850} /* UG,GC,E,C */
01063     ,{{    850,    850,    850,    850,    850} /* UG,GC,E,G */
01064     ,{{    850,    850,    850,    850,    850} /* UG,GC,E,U */
01065     }
01066     ,{{{    850,    850,    850,    280,    850} /* UG,GC,A,E */
01067     ,{{    850,    850,    850,    280,    850} /* UG,GC,A,A */
01068     ,{{    850,    850,    850,    280,    850} /* UG,GC,A,C */
01069     ,{{    280,    280,    280,    280,    280} /* UG,GC,A,G */
01070     ,{{    850,    850,    850,    280,    850} /* UG,GC,A,U */
01071     }
01072     ,{{{    850,    850,    850,    850,    850} /* UG,GC,C,E */
01073     ,{{    850,    850,    850,    850,    850} /* UG,GC,C,A */
01074     ,{{    850,    850,    850,    850,    850} /* UG,GC,C,C */
01075     ,{{    850,    850,    850,    850,    850} /* UG,GC,C,G */
01076     ,{{    850,    850,    850,    850,    850} /* UG,GC,C,U */
01077     }
01078     ,{{{    850,    280,    850,    280,    850} /* UG,GC,G,E */
01079     ,{{    850,    280,    850,    280,    850} /* UG,GC,G,A */
01080     ,{{    850,    280,    850,    280,    850} /* UG,GC,G,C */
01081     ,{{    280,    280,    280,    280,    280} /* UG,GC,G,G */
01082     ,{{    850,    280,    850,    280,    850} /* UG,GC,G,U */
01083     }
01084     ,{{{    850,    850,    850,    850,   -160} /* UG,GC,U,E */
01085     ,{{    850,    850,    850,    850,   -160} /* UG,GC,U,A */
01086     ,{{    850,    850,    850,    850,   -160} /* UG,GC,U,C */
01087     ,{{    850,    850,    850,    850,   -160} /* UG,GC,U,G */
01088     ,{{   -160,   -160,   -160,   -160,   -160} /* UG,GC,U,U */
01089     }
01090     }
01091     ,{{{   1350,   1350,   1350,   1350,   1350} /* UG,GU,E,E */
01092     ,{{   1350,   1350,   1350,   1350,   1350} /* UG,GU,E,A */
01093     ,{{   1350,   1350,   1350,   1350,   1350} /* UG,GU,E,C */
01094     ,{{   1350,   1350,   1350,   1350,   1350} /* UG,GU,E,G */
01095     ,{{   1350,   1350,   1350,   1350,   1350} /* UG,GU,E,U */
01096     }
01097     ,{{{   1350,   1350,   1350,    780,   1350} /* UG,GU,A,E */
01098     ,{{   1350,   1350,   1350,    780,   1350} /* UG,GU,A,A */
01099     ,{{   1350,   1350,   1350,    780,   1350} /* UG,GU,A,C */
01100     ,{{    780,    780,    780,    780,    780} /* UG,GU,A,G */
01101     ,{{   1350,   1350,   1350,    780,   1350} /* UG,GU,A,U */

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01104     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, GU, C, A */
01105     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, GU, C, C */
01106     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, GU, C, G */
01107     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, GU, C, U */
01108     }
01109     ,{{ 1350, 780, 1350, 780, 1350} /* UG, GU, G, E */
01110     ,{{ 1350, 780, 1350, 780, 1350} /* UG, GU, G, A */
01111     ,{{ 1350, 780, 1350, 780, 1350} /* UG, GU, G, C */
01112     ,{{ 780, 780, 780, 780, 780} /* UG, GU, G, G */
01113     ,{{ 1350, 780, 1350, 780, 1350} /* UG, GU, G, U */
01114     }
01115     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, GU, U, E */
01116     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, GU, U, A */
01117     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, GU, U, C */
01118     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, GU, U, G */
01119     ,{{ 340, 340, 340, 340, 340} /* UG, GU, U, U */
01120     }
01121     }
01122     ,{{{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, E, E */
01123     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, E, A */
01124     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, E, C */
01125     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, E, G */
01126     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, E, U */
01127     }
01128     ,{{ 1350, 1350, 1350, 780, 1350} /* UG, UG, A, E */
01129     ,{{ 1350, 1350, 1350, 780, 1350} /* UG, UG, A, A */
01130     ,{{ 1350, 1350, 1350, 780, 1350} /* UG, UG, A, C */
01131     ,{{ 780, 780, 780, 780, 780} /* UG, UG, A, G */
01132     ,{{ 1350, 1350, 1350, 780, 1350} /* UG, UG, A, U */
01133     }
01134     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, C, E */
01135     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, C, A */
01136     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, C, C */
01137     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, C, G */
01138     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UG, C, U */
01139     }
01140     ,{{ 1350, 780, 1350, 780, 1350} /* UG, UG, G, E */
01141     ,{{ 780, 780, 780, 780, 780} /* UG, UG, G, A */
01142     ,{{ 1350, 780, 1350, 780, 1350} /* UG, UG, G, C */
01143     ,{{ 780, 780, 780, 780, 780} /* UG, UG, G, G */
01144     ,{{ 1350, 780, 1350, 780, 1350} /* UG, UG, G, U */
01145     }
01146     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, UG, U, E */
01147     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, UG, U, A */
01148     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, UG, U, C */
01149     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, UG, U, G */
01150     ,{{ 340, 340, 340, 340, 340} /* UG, UG, U, U */
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01152     }
01153     ,{{{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, E, E */
01154     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, E, A */
01155     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, E, C */
01156     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, E, G */
01157     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, E, U */
01158     }
01159     ,{{ 1350, 1350, 1350, 780, 1350} /* UG, AU, A, E */
01160     ,{{ 1350, 1350, 1350, 780, 1350} /* UG, AU, A, A */
01161     ,{{ 1350, 1350, 1350, 780, 1350} /* UG, AU, A, C */
01162     ,{{ 780, 780, 780, 780, 780} /* UG, AU, A, G */
01163     ,{{ 1350, 1350, 1350, 780, 1350} /* UG, AU, A, U */
01164     }
01165     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, C, E */
01166     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, C, A */
01167     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, C, C */
01168     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, C, G */
01169     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, AU, C, U */
01170     }
01171     ,{{ 1350, 780, 1350, 780, 1350} /* UG, AU, G, E */
01172     ,{{ 1350, 780, 1350, 780, 1350} /* UG, AU, G, A */
01173     ,{{ 1350, 780, 1350, 780, 1350} /* UG, AU, G, C */
01174     ,{{ 780, 780, 780, 780, 780} /* UG, AU, G, G */
01175     ,{{ 1350, 780, 1350, 780, 1350} /* UG, AU, G, U */
01176     }
01177     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, AU, U, E */
01178     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, AU, U, A */
01179     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, AU, U, C */
01180     ,{{ 1350, 1350, 1350, 1350, 340} /* UG, AU, U, G */
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01182     }
01183     }
01184     ,{{{{ 1350, 1350, 1350, 1350, 1350} /* UG, UA, E, E */
01185     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UA, E, A */
01186     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UA, E, C */
01187     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UA, E, G */
01188     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG, UA, E, U */

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01189     }
01190     ,{{ 1350, 1350, 1350, 780, 1350} /* UG,UA,A,E */
01191     ,{{ 1350, 1350, 1350, 780, 1350} /* UG,UA,A,A */
01192     ,{{ 1350, 1350, 1350, 780, 1350} /* UG,UA,A,C */
01193     ,{{ 780, 780, 780, 780, 780} /* UG,UA,A,G */
01194     ,{{ 1350, 1350, 1350, 780, 1350} /* UG,UA,A,U */
01195     }
01196     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,UA,C,E */
01197     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,UA,C,A */
01198     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,UA,C,C */
01199     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,UA,C,G */
01200     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,UA,C,U */
01201     }
01202     ,{{ 1350, 780, 1350, 780, 1350} /* UG,UA,G,E */
01203     ,{{ 780, 780, 780, 780, 780} /* UG,UA,G,A */
01204     ,{{ 1350, 780, 1350, 780, 1350} /* UG,UA,G,C */
01205     ,{{ 780, 780, 780, 780, 780} /* UG,UA,G,G */
01206     ,{{ 1350, 780, 1350, 780, 1350} /* UG,UA,G,U */
01207     }
01208     ,{{ 1350, 1350, 1350, 1350, 340} /* UG,UA,U,E */
01209     ,{{ 1350, 1350, 1350, 1350, 340} /* UG,UA,U,A */
01210     ,{{ 1350, 1350, 1350, 1350, 340} /* UG,UA,U,C */
01211     ,{{ 1350, 1350, 1350, 1350, 340} /* UG,UA,U,G */
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01213     }
01214     }
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01216     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,E,A */
01217     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,E,C */
01218     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,E,G */
01219     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,E,U */
01220     }
01221     ,{{ 1350, 1350, 1350, 780, 1350} /* UG,NN,A,E */
01222     ,{{ 1350, 1350, 1350, 780, 1350} /* UG,NN,A,A */
01223     ,{{ 1350, 1350, 1350, 780, 1350} /* UG,NN,A,C */
01224     ,{{ 780, 780, 780, 780, 780} /* UG,NN,A,G */
01225     ,{{ 1350, 1350, 1350, 780, 1350} /* UG,NN,A,U */
01226     }
01227     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,C,E */
01228     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,C,A */
01229     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,C,C */
01230     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,C,G */
01231     ,{{ 1350, 1350, 1350, 1350, 1350} /* UG,NN,C,U */
01232     }
01233     ,{{ 1350, 780, 1350, 780, 1350} /* UG,NN,G,E */
01234     ,{{ 1350, 780, 1350, 780, 1350} /* UG,NN,G,A */
01235     ,{{ 1350, 780, 1350, 780, 1350} /* UG,NN,G,C */
01236     ,{{ 780, 780, 780, 780, 780} /* UG,NN,G,G */
01237     ,{{ 1350, 780, 1350, 780, 1350} /* UG,NN,G,U */
01238     }
01239     ,{{ 1350, 1350, 1350, 1350, 340} /* UG,NN,U,E */
01240     ,{{ 1350, 1350, 1350, 1350, 340} /* UG,NN,U,A */
01241     ,{{ 1350, 1350, 1350, 1350, 340} /* UG,NN,U,C */
01242     ,{{ 1350, 1350, 1350, 1350, 340} /* UG,NN,U,G */
01243     ,{{ 340, 340, 340, 340, 340} /* UG,NN,U,U */
01244     }
01245     }
01246     }
01247     ,{{{ INF, INF, INF, INF, INF} /* AU,NP,E,E */
01248     ,{{ INF, INF, INF, INF, INF} /* AU,NP,E,A */
01249     ,{{ INF, INF, INF, INF, INF} /* AU,NP,E,C */
01250     ,{{ INF, INF, INF, INF, INF} /* AU,NP,E,G */
01251     ,{{ INF, INF, INF, INF, INF} /* AU,NP,E,U */
01252     }
01253     ,{{ INF, INF, INF, INF, INF} /* AU,NP,A,E */
01254     ,{{ INF, INF, INF, INF, INF} /* AU,NP,A,A */
01255     ,{{ INF, INF, INF, INF, INF} /* AU,NP,A,C */
01256     ,{{ INF, INF, INF, INF, INF} /* AU,NP,A,G */
01257     ,{{ INF, INF, INF, INF, INF} /* AU,NP,A,U */
01258     }
01259     ,{{ INF, INF, INF, INF, INF} /* AU,NP,C,E */
01260     ,{{ INF, INF, INF, INF, INF} /* AU,NP,C,A */
01261     ,{{ INF, INF, INF, INF, INF} /* AU,NP,C,C */
01262     ,{{ INF, INF, INF, INF, INF} /* AU,NP,C,G */
01263     ,{{ INF, INF, INF, INF, INF} /* AU,NP,C,U */
01264     }
01265     ,{{ INF, INF, INF, INF, INF} /* AU,NP,G,E */
01266     ,{{ INF, INF, INF, INF, INF} /* AU,NP,G,A */
01267     ,{{ INF, INF, INF, INF, INF} /* AU,NP,G,C */
01268     ,{{ INF, INF, INF, INF, INF} /* AU,NP,G,G */
01269     ,{{ INF, INF, INF, INF, INF} /* AU,NP,G,U */
01270     }
01271     ,{{ INF, INF, INF, INF, INF} /* AU,NP,U,E */
01272     ,{{ INF, INF, INF, INF, INF} /* AU,NP,U,A */
01273     ,{{ INF, INF, INF, INF, INF} /* AU,NP,U,C */
01274     ,{{ INF, INF, INF, INF, INF} /* AU,NP,U,G */
01275     ,{{ INF, INF, INF, INF, INF} /* AU,NP,U,U */

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01276     }
01277     }
01278     ,{{ 850, 850, 850, 850, 850} /* AU,CG,E,E */
01279     ,{{ 850, 850, 850, 850, 850} /* AU,CG,E,A */
01280     ,{{ 850, 850, 850, 850, 850} /* AU,CG,E,C */
01281     ,{{ 850, 850, 850, 850, 850} /* AU,CG,E,G */
01282     ,{{ 850, 850, 850, 850, 850} /* AU,CG,E,U */
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01617 , { 340, 340, 340, 340, 340} /* UA,GU,U,U */
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01619 }
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01622 , { 1350, 1350, 1350, 1350, 1350} /* UA,UG,E,C */
01623 , { 1350, 1350, 1350, 1350, 1350} /* UA,UG,E,G */
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01710 , { 340, 340, 340, 340, 340} /* UA,UA,U,U */

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01734     ,{ 780, 780, 780, 780, 780} /* UA,NN,G,G */
01735     ,{ 1350, 780, 1350, 780, 1350} /* UA,NN,G,U */
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01739     ,{ 1350, 1350, 1350, 1350, 340} /* UA,NN,U,C */
01740     ,{ 1350, 1350, 1350, 1350, 340} /* UA,NN,U,G */
01741     ,{ 340, 340, 340, 340, 340} /* UA,NN,U,U */
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01747     ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C */
01748     ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G */
01749     ,{ INF, INF, INF, INF, INF} /* NN,NP,E,U */
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01766     ,{ INF, INF, INF, INF, INF} /* NN,NP,G,G */
01767     ,{ INF, INF, INF, INF, INF} /* NN,NP,G,U */
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01773     ,{ INF, INF, INF, INF, INF} /* NN,NP,U,U */
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01947 , { { 1350, 1350, 1350, 1350, 1350} /* NN,UA,C,U */
01948 }
01949 , { { 1350, 780, 1350, 780, 1350} /* NN,UA,G,E */
01950 , { { 780, 780, 780, 780, 780} /* NN,UA,G,A */
01951 , { { 1350, 780, 1350, 780, 1350} /* NN,UA,G,C */
01952 , { { 780, 780, 780, 780, 780} /* NN,UA,G,G */
01953 , { { 1350, 780, 1350, 780, 1350} /* NN,UA,G,U */
01954 }
01955 , { { 1350, 1350, 1350, 1350, 340} /* NN,UA,U,E */
01956 , { { 1350, 1350, 1350, 1350, 340} /* NN,UA,U,A */
01957 , { { 1350, 1350, 1350, 1350, 340} /* NN,UA,U,C */
01958 , { { 1350, 1350, 1350, 1350, 340} /* NN,UA,U,G */
01959 , { { 340, 340, 340, 340, 340} /* NN,UA,U,U */
01960 }
01961 }
01962 , { { { 1350, 1350, 1350, 1350, 1350} /* NN,NN,E,E */
01963 , { { 1350, 1350, 1350, 1350, 1350} /* NN,NN,E,A */
01964 , { { 1350, 1350, 1350, 1350, 1350} /* NN,NN,E,C */
01965 , { { 1350, 1350, 1350, 1350, 1350} /* NN,NN,E,G */
01966 , { { 1350, 1350, 1350, 1350, 1350} /* NN,NN,E,U */
01967 }
01968 , { { 1350, 1350, 1350, 1350, 1350} /* NN,NN,A,E */
01969 , { { 1350, 1350, 1350, 1350, 1350} /* NN,NN,A,A */
01970 , { { 1350, 1350, 1350, 1350, 1350} /* NN,NN,A,C */
01971 , { { 780, 780, 780, 780, 780} /* NN,NN,A,G */
```

```

01972     , { 1350, 1350, 1350, 1350, 1350 } /* NN,NN,A,U */
01973     }
01974     , { { 1350, 1350, 1350, 1350, 1350 } /* NN,NN,C,E */
01975     , { 1350, 1350, 1350, 1350, 1350 } /* NN,NN,C,A */
01976     , { 1350, 1350, 1350, 1350, 1350 } /* NN,NN,C,C */
01977     , { 1350, 1350, 1350, 1350, 1350 } /* NN,NN,C,G */
01978     , { 1350, 1350, 1350, 1350, 1350 } /* NN,NN,C,U */
01979     }
01980     , { { 1350, 780, 1350, 780, 1350 } /* NN,NN,G,E */
01981     , { 1350, 780, 1350, 780, 1350 } /* NN,NN,G,A */
01982     , { 1350, 780, 1350, 780, 1350 } /* NN,NN,G,C */
01983     , { 780, 780, 780, 780, 780 } /* NN,NN,G,G */
01984     , { 1350, 780, 1350, 780, 1350 } /* NN,NN,G,U */
01985     }
01986     , { { 1350, 1350, 1350, 1350, 340 } /* NN,NN,U,E */
01987     , { 1350, 1350, 1350, 1350, 340 } /* NN,NN,U,A */
01988     , { 1350, 1350, 1350, 1350, 340 } /* NN,NN,U,C */
01989     , { 1350, 1350, 1350, 1350, 340 } /* NN,NN,U,G */
01990     , { 340, 340, 340, 340, 340 } /* NN,NN,U,U */
01991     }
01992     }
01993     };;
01994

```

11.98 intl21dH_D.h

```

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00003     , { INF, INF, INF, INF, INF } /* NP,NP,E,A */
00004     , { INF, INF, INF, INF, INF } /* NP,NP,E,C */
00005     , { INF, INF, INF, INF, INF } /* NP,NP,E,G */
00006     , { INF, INF, INF, INF, INF } /* NP,NP,E,T */
00007     }
00008     , {{{ INF, INF, INF, INF, INF } /* NP,NP,A,E */
00009     , { INF, INF, INF, INF, INF } /* NP,NP,A,A */
00010     , { INF, INF, INF, INF, INF } /* NP,NP,A,C */
00011     , { INF, INF, INF, INF, INF } /* NP,NP,A,G */
00012     , { INF, INF, INF, INF, INF } /* NP,NP,A,T */
00013     }
00014     , {{{ INF, INF, INF, INF, INF } /* NP,NP,C,E */
00015     , { INF, INF, INF, INF, INF } /* NP,NP,C,A */
00016     , { INF, INF, INF, INF, INF } /* NP,NP,C,C */
00017     , { INF, INF, INF, INF, INF } /* NP,NP,C,G */
00018     , { INF, INF, INF, INF, INF } /* NP,NP,C,T */
00019     }
00020     , {{{ INF, INF, INF, INF, INF } /* NP,NP,G,E */
00021     , { INF, INF, INF, INF, INF } /* NP,NP,G,A */
00022     , { INF, INF, INF, INF, INF } /* NP,NP,G,C */
00023     , { INF, INF, INF, INF, INF } /* NP,NP,G,G */
00024     , { INF, INF, INF, INF, INF } /* NP,NP,G,T */
00025     }
00026     , {{{ INF, INF, INF, INF, INF } /* NP,NP,T,E */
00027     , { INF, INF, INF, INF, INF } /* NP,NP,T,A */
00028     , { INF, INF, INF, INF, INF } /* NP,NP,T,C */
00029     , { INF, INF, INF, INF, INF } /* NP,NP,T,G */
00030     , { INF, INF, INF, INF, INF } /* NP,NP,T,T */
00031     }
00032     }
00033     , {{{ INF, INF, INF, INF, INF } /* NP,CG,E,E */
00034     , { INF, INF, INF, INF, INF } /* NP,CG,E,A */
00035     , { INF, INF, INF, INF, INF } /* NP,CG,E,C */
00036     , { INF, INF, INF, INF, INF } /* NP,CG,E,G */
00037     , { INF, INF, INF, INF, INF } /* NP,CG,E,T */
00038     }
00039     , {{{ INF, INF, INF, INF, INF } /* NP,CG,A,E */
00040     , { INF, INF, INF, INF, INF } /* NP,CG,A,A */
00041     , { INF, INF, INF, INF, INF } /* NP,CG,A,C */
00042     , { INF, INF, INF, INF, INF } /* NP,CG,A,G */
00043     , { INF, INF, INF, INF, INF } /* NP,CG,A,T */
00044     }
00045     , {{{ INF, INF, INF, INF, INF } /* NP,CG,C,E */
00046     , { INF, INF, INF, INF, INF } /* NP,CG,C,A */
00047     , { INF, INF, INF, INF, INF } /* NP,CG,C,C */
00048     , { INF, INF, INF, INF, INF } /* NP,CG,C,G */
00049     , { INF, INF, INF, INF, INF } /* NP,CG,C,T */
00050     }
00051     , {{{ INF, INF, INF, INF, INF } /* NP,CG,G,E */
00052     , { INF, INF, INF, INF, INF } /* NP,CG,G,A */
00053     , { INF, INF, INF, INF, INF } /* NP,CG,G,C */
00054     , { INF, INF, INF, INF, INF } /* NP,CG,G,G */
00055     , { INF, INF, INF, INF, INF } /* NP,CG,G,T */
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00057     , {{{ INF, INF, INF, INF, INF } /* NP,CG,T,E */
00058     , { INF, INF, INF, INF, INF } /* NP,CG,T,A */
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00066 , { INF, INF, INF, INF, INF } /* NP,GC,E,C */
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00072 , { INF, INF, INF, INF, INF } /* NP,GC,A,C */
00073 , { INF, INF, INF, INF, INF } /* NP,GC,A,G */
00074 , { INF, INF, INF, INF, INF } /* NP,GC,A,T */
00075 }
00076 , { { INF, INF, INF, INF, INF } /* NP,GC,C,E */
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00079 , { INF, INF, INF, INF, INF } /* NP,GC,C,G */
00080 , { INF, INF, INF, INF, INF } /* NP,GC,C,T */
00081 }
00082 , { { INF, INF, INF, INF, INF } /* NP,GC,G,E */
00083 , { INF, INF, INF, INF, INF } /* NP,GC,G,A */
00084 , { INF, INF, INF, INF, INF } /* NP,GC,G,C */
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00087 }
00088 , { { INF, INF, INF, INF, INF } /* NP,GC,T,E */
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00179 , { INF, INF, INF, INF, INF } /* NP, AT, G, T */
00180 }
00181 , { { INF, INF, INF, INF, INF } /* NP, AT, T, E */
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00187 }
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00218 }
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00233 , { INF, INF, INF, INF, INF } /* NP, NN, C, C */

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00242 }
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00256 }
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00260 , { INF, INF, INF, INF, INF } /* CG,NP,A,G */
00261 , { INF, INF, INF, INF, INF } /* CG,NP,A,T */
00262 }
00263 , { { INF, INF, INF, INF, INF } /* CG,NP,C,E */
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00267 , { INF, INF, INF, INF, INF } /* CG,NP,C,T */
00268 }
00269 , { { INF, INF, INF, INF, INF } /* CG,NP,G,E */
00270 , { INF, INF, INF, INF, INF } /* CG,NP,G,A */
00271 , { INF, INF, INF, INF, INF } /* CG,NP,G,C */
00272 , { INF, INF, INF, INF, INF } /* CG,NP,G,G */
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00274 }
00275 , { { INF, INF, INF, INF, INF } /* CG,NP,T,E */
00276 , { INF, INF, INF, INF, INF } /* CG,NP,T,A */
00277 , { INF, INF, INF, INF, INF } /* CG,NP,T,C */
00278 , { INF, INF, INF, INF, INF } /* CG,NP,T,G */
00279 , { INF, INF, INF, INF, INF } /* CG,NP,T,T */
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00297 , { 2400, 2400, 2400, 2400, 2050 } /* CG,CG,C,G */
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00303 , { 2500, 2500, 1900, 1900, 1900 } /* CG,CG,G,G */
00304 , { 2500, 2500, 2400, 1900, 2400 } /* CG,CG,G,T */
00305 }
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00307 , { 2400, 2400, 2050, 2400, 1620 } /* CG,CG,T,A */
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00309 , { 2400, 2400, 2050, 2400, 1620 } /* CG,CG,T,G */
00310 , { 1620, 1620, 1620, 1620, 1620 } /* CG,CG,T,T */
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00312 }
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00314 , { 2820, 2820, 2820, 2820, 2350 } /* CG,GC,E,A */
00315 , { 2820, 2820, 2640, 2820, 2350 } /* CG,GC,E,C */
00316 , { 2820, 2820, 2820, 2820, 2100 } /* CG,GC,E,G */
00317 , { 2350, 2350, 2350, 2100, 2350 } /* CG,GC,E,T */
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00327 , { 2820, 2820, 2640, 2820, 2080} /* CG,GC,C,C */
00328 , { 2820, 2820, 2820, 2820, 2080} /* CG,GC,C,G */
00329 , { 2080, 2080, 2080, 2080, 2080} /* CG,GC,C,T */
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00332 , { 2280, 2280, 2280, 1800, 2280} /* CG,GC,G,A */
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00334 , { 1800, 1800, 1800, 1800, 1800} /* CG,GC,G,G */
00335 , { 2350, 2280, 2350, 1800, 2350} /* CG,GC,G,T */
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00340 , { 2820, 2820, 1940, 2820, 2100} /* CG,GC,T,G */
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00346 , { 2820, 2820, 2640, 2820, 2350} /* CG,GT,E,C */
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00348 , { 2350, 2350, 2350, 2100, 2350} /* CG,GT,E,T */
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00358 , { 2820, 2820, 2640, 2820, 2080} /* CG,GT,C,C */
00359 , { 2820, 2820, 2820, 2820, 2080} /* CG,GT,C,G */
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00363 , { 2280, 2280, 2280, 1800, 2280} /* CG,GT,G,A */
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00384 , { 2500, 2500, 2500, 2500, 2500} /* CG,TG,A,G */
00385 , { 2500, 2290, 2400, 2500, 2400} /* CG,TG,A,T */
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00389 , { 2400, 2400, 2300, 2400, 2050} /* CG,TG,C,C */
00390 , { 2400, 2400, 2400, 2400, 2050} /* CG,TG,C,G */
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00394 , { 2500, 2500, 2500, 2500, 2500} /* CG,TG,G,A */
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00396 , { 2500, 2500, 1900, 1900, 1900} /* CG,TG,G,G */
00397 , { 2500, 2500, 2400, 1900, 2400} /* CG,TG,G,T */
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00413 , { 2420, 2390, 2420, 1670, 2420} /* CG,AT,A,A */
00414 , { 2420, 2420, 2420, 1670, 2420} /* CG,AT,A,C */
00415 , { 1670, 1670, 1670, 1670, 1670} /* CG,AT,A,G */
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00420 , { 2280, 2280, 2150, 2280, 660} /* CG,AT,C,C */
00421 , { 2280, 2280, 2280, 2280, 660} /* CG,AT,C,G */
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00427 , { 900, 900, 900, 900, 900} /* CG,AT,G,G */
00428 , { 2420, 1260, 2420, 900, 2420} /* CG,AT,G,T */
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00432 , { 1400, 1400, 1400, 1400, 1140} /* CG,AT,T,C */
00433 , { 2280, 2280, 1400, 2280, 1140} /* CG,AT,T,G */
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00458 , { 1780, 1780, 1780, 1780, 1780} /* CG,TA,G,G */
00459 , { 3210, 2580, 3210, 1780, 3210} /* CG,TA,G,T */
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00504 , { INF, INF, INF, INF, INF} /* GC,NP,E,T */
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00539 , { 2820, 1830, 2820, 2280, 2820} /* GC,CG,A,C */
00540 , { 2280, 2280, 2280, 2280, 2280} /* GC,CG,A,G */
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00559 , { 2350, 2350, 2100, 2350, 2100} /* GC,CG,T,T */
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00584 , { 2280, 2130, 2280, 1610, 2280} /* GC,GC,G,T */
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00587 , { 2280, 2280, 2280, 2280, 2280} /* GC,GC,T,A */
00588 , { 2280, 2280, 1830, 2280, 1830} /* GC,GC,T,C */
00589 , { 2280, 2280, 2280, 2280, 2280} /* GC,GC,T,G */
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00594 , { 2280, 2280, 2280, 2280, 2280} /* GC,GT,E,A */
00595 , { 2490, 2280, 2490, 2280, 2280} /* GC,GT,E,C */
00596 , { 2280, 2280, 2280, 2280, 2280} /* GC,GT,E,G */
00597 , { 2280, 2280, 2280, 2280, 2280} /* GC,GT,E,T */
00598 }
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00602 , { 2130, 2130, 2130, 2130, 2130} /* GC,GT,A,G */
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00607 , { 2490, 2280, 2490, 2280, 1830} /* GC,GT,C,C */
00608 , { 2280, 2280, 2280, 2280, 2280} /* GC,GT,C,G */
00609 , { 2280, 2280, 1830, 2280, 1830} /* GC,GT,C,T */
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00611 , { { 2280, 2130, 2280, 1610, 2280} /* GC,GT,G,E */
00612 , { 2130, 2130, 2130, 1610, 2130} /* GC,GT,G,A */
00613 , { 2280, 2130, 2280, 1610, 2280} /* GC,GT,G,C */
00614 , { 1610, 1610, 1610, 1610, 1610} /* GC,GT,G,G */
00615 , { 2280, 2130, 2280, 1610, 2280} /* GC,GT,G,T */
00616 }
00617 , { { 2280, 2280, 2280, 2280, 2280} /* GC,GT,T,E */
00618 , { 2280, 2280, 2280, 2280, 2280} /* GC,GT,T,A */
00619 , { 2280, 2280, 1830, 2280, 1830} /* GC,GT,T,C */
00620 , { 2280, 2280, 2280, 2280, 2280} /* GC,GT,T,G */
00621 , { 2280, 2280, 1830, 2280, 1920} /* GC,GT,T,T */
00622 }
00623 }
00624 , { { { 2820, 2350, 2820, 2350, 2820} /* GC,TG,E,E */
00625 , { 2350, 2350, 2350, 2350, 2350} /* GC,TG,E,A */
00626 , { 2820, 2350, 2820, 2350, 2820} /* GC,TG,E,C */
00627 , { 2350, 2350, 2350, 2350, 2350} /* GC,TG,E,G */
00628 , { 2820, 2350, 2820, 2350, 2820} /* GC,TG,E,T */
00629 }
00630 , { { 2820, 2280, 2820, 2280, 2820} /* GC,TG,A,E */
00631 , { 2280, 1830, 1830, 2280, 1830} /* GC,TG,A,A */
00632 , { 2820, 1830, 2820, 2280, 2820} /* GC,TG,A,C */
00633 , { 2280, 2280, 2280, 2280, 2280} /* GC,TG,A,G */
00634 , { 2820, 1830, 2820, 2280, 2820} /* GC,TG,A,T */
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00636 , { { 2640, 2350, 2640, 2350, 2350} /* GC,TG,C,E */
00637 , { 2350, 2350, 2350, 2350, 2350} /* GC,TG,C,A */
00638 , { 2640, 2350, 2640, 2350, 1940} /* GC,TG,C,C */
00639 , { 2350, 2350, 2350, 2350, 2350} /* GC,TG,C,G */
00640 , { 2350, 2350, 1940, 2350, 1940} /* GC,TG,C,T */
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00645 , { 2020, 2020, 1800, 1800, 1800} /* GC,TG,G,G */
00646 , { 2820, 2020, 2820, 1800, 2820} /* GC,TG,G,T */
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00649 , { 2350, 2350, 2350, 2350, 2350} /* GC,TG,T,A */
00650 , { 2350, 2350, 2080, 2350, 2100} /* GC,TG,T,C */
00651 , { 2350, 2350, 2350, 2350, 2350} /* GC,TG,T,G */
00652 , { 2350, 2350, 2100, 2350, 2100} /* GC,TG,T,T */
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00654 }
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00656 , { 2980, 2980, 2980, 2980, 2980} /* GC,AT,E,A */
00657 , { 3170, 2980, 3170, 2980, 3050} /* GC,AT,E,C */
00658 , { 2980, 2980, 2980, 2980, 2980} /* GC,AT,E,G */
00659 , { 3050, 2980, 3050, 2980, 3050} /* GC,AT,E,T */
00660 }
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00662 , { 2890, 2890, 2300, 2340, 2300} /* GC,AT,A,A */
00663 , { 2340, 2300, 2300, 2340, 2300} /* GC,AT,A,C */
00664 , { 2340, 2340, 2340, 2340, 2340} /* GC,AT,A,G */
00665 , { 2340, 2300, 2300, 2340, 2300} /* GC,AT,A,T */
00666 }
00667 , { { 3170, 2980, 3170, 2980, 3050} /* GC,AT,C,E */
00668 , { 2980, 2980, 2980, 2980, 2980} /* GC,AT,C,A */
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00670 , { 2980, 2980, 2980, 2980, 2980} /* GC,AT,C,G */
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00672 }
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00674 , { 2780, 2780, 2780, 1390, 2780} /* GC,AT,G,A */
00675 , { 2780, 2780, 2300, 1390, 2300} /* GC,AT,G,C */
00676 , { 1390, 1390, 1390, 1390, 1390} /* GC,AT,G,G */
00677 , { 2780, 2780, 2300, 1390, 2300} /* GC,AT,G,T */
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00681 , { 2020, 2020, 2020, 2020, 2020} /* GC,AT,T,C */
00682 , { 2980, 2980, 2020, 2980, 1940} /* GC,AT,T,G */
00683 , { 1940, 1940, 1940, 1940, 1940} /* GC,AT,T,T */
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00685 }
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00687 , { 2580, 2580, 2580, 2580, 2580} /* GC,TA,E,A */
00688 , { 3210, 2580, 3210, 3020, 3210} /* GC,TA,E,C */
00689 , { 3020, 3020, 3020, 3020, 3020} /* GC,TA,E,G */
00690 , { 3210, 2580, 3210, 3020, 3210} /* GC,TA,E,T */
00691 }
00692 , {{ 3210, 3020, 3210, 3020, 3210} /* GC,TA,A,E */
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00694 , { 3210, 1750, 3210, 3020, 3210} /* GC,TA,A,C */
00695 , { 3020, 3020, 3020, 3020, 3020} /* GC,TA,A,G */
00696 , { 3210, 1750, 3210, 3020, 3210} /* GC,TA,A,T */
00697 }
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00701 , { 2310, 2310, 2310, 2310, 2310} /* GC,TA,C,G */
00702 , { 2310, 2310, 1850, 2310, 1850} /* GC,TA,C,T */
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00705 , { 2580, 2580, 2580, 2580, 2580} /* GC,TA,G,A */
00706 , { 3210, 2580, 3210, 2230, 3210} /* GC,TA,G,C */
00707 , { 2580, 2580, 2230, 2230, 2230} /* GC,TA,G,G */
00708 , { 3210, 2580, 3210, 2230, 3210} /* GC,TA,G,T */
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00711 , { 2310, 2310, 2310, 2310, 890} /* GC,TA,T,A */
00712 , { 2310, 2310, 2260, 2310, 890} /* GC,TA,T,C */
00713 , { 2310, 2310, 2310, 2310, 890} /* GC,TA,T,G */
00714 , { 890, 890, 890, 890, 890} /* GC,TA,T,T */
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00716 }
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00719 , { 3210, 2980, 3210, 3020, 3210} /* GC,NN,E,C */
00720 , { 3020, 3020, 3020, 3020, 3020} /* GC,NN,E,G */
00721 , { 3210, 2980, 3210, 3020, 3210} /* GC,NN,E,T */
00722 }
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00726 , { 3020, 3020, 3020, 3020, 3020} /* GC,NN,A,G */
00727 , { 3210, 2300, 3210, 3020, 3210} /* GC,NN,A,T */
00728 }
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00733 , { 3050, 2980, 3050, 2980, 3050} /* GC,NN,C,T */
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00736 , { 2780, 2780, 2780, 2580, 2780} /* GC,NN,G,A */
00737 , { 3210, 2780, 3210, 2230, 3210} /* GC,NN,G,C */
00738 , { 2580, 2580, 2230, 2230, 2230} /* GC,NN,G,G */
00739 , { 3210, 2780, 3210, 2230, 3210} /* GC,NN,G,T */
00740 }
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00744 , { 2980, 2980, 2350, 2980, 2350} /* GC,NN,T,G */
00745 , { 2350, 2350, 2100, 2350, 2100} /* GC,NN,T,T */
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00747 }
00748 }
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00752 , { INF, INF, INF, INF, INF} /* GT,NP,E,G */
00753 , { INF, INF, INF, INF, INF} /* GT,NP,E,T */
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00755 , {{ INF, INF, INF, INF, INF} /* GT,NP,A,E */

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00763 , { INF, INF, INF, INF, INF } /* GT,NP,C,C */
00764 , { INF, INF, INF, INF, INF } /* GT,NP,C,G */
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00767 , { { INF, INF, INF, INF, INF } /* GT,NP,G,E */
00768 , { INF, INF, INF, INF, INF } /* GT,NP,G,A */
00769 , { INF, INF, INF, INF, INF } /* GT,NP,G,C */
00770 , { INF, INF, INF, INF, INF } /* GT,NP,G,G */
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00775 , { INF, INF, INF, INF, INF } /* GT,NP,T,C */
00776 , { INF, INF, INF, INF, INF } /* GT,NP,T,G */
00777 , { INF, INF, INF, INF, INF } /* GT,NP,T,T */
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00783 , { 2350, 2350, 2350, 2350, 2350 } /* GT,CG,E,G */
00784 , { 2820, 2350, 2820, 2350, 2820 } /* GT,CG,E,T */
00785 }
00786 , { { 2820, 2280, 2820, 2280, 2820 } /* GT,CG,A,E */
00787 , { 2280, 1830, 1830, 2280, 1830 } /* GT,CG,A,A */
00788 , { 2820, 1830, 2820, 2280, 2820 } /* GT,CG,A,C */
00789 , { 2280, 2280, 2280, 2280, 2280 } /* GT,CG,A,G */
00790 , { 2820, 1830, 2820, 2280, 2820 } /* GT,CG,A,T */
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00793 , { 2350, 2350, 2350, 2350, 2350 } /* GT,CG,C,A */
00794 , { 2640, 2350, 2640, 2350, 1940 } /* GT,CG,C,C */
00795 , { 2350, 2350, 2350, 2350, 2350 } /* GT,CG,C,G */
00796 , { 2350, 2350, 1940, 2350, 1940 } /* GT,CG,C,T */
00797 }
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00801 , { 2020, 2020, 1800, 1800, 1800 } /* GT,CG,G,G */
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00803 }
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00805 , { 2350, 2350, 2350, 2350, 2350 } /* GT,CG,T,A */
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00807 , { 2350, 2350, 2350, 2350, 2350 } /* GT,CG,T,G */
00808 , { 2350, 2350, 2100, 2350, 2100 } /* GT,CG,T,T */
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00812 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GC,E,A */
00813 , { 2490, 2280, 2490, 2280, 2280 } /* GT,GC,E,C */
00814 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GC,E,G */
00815 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GC,E,T */
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00818 , { 2150, 2150, 2150, 2130, 2150 } /* GT,GC,A,A */
00819 , { 2280, 2150, 2280, 2130, 2280 } /* GT,GC,A,C */
00820 , { 2280, 2130, 2130, 2130, 2130 } /* GT,GC,A,G */
00821 , { 2280, 2150, 2280, 2130, 2280 } /* GT,GC,A,T */
00822 }
00823 , { { 2490, 2280, 2490, 2280, 2280 } /* GT,GC,C,E */
00824 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GC,C,A */
00825 , { 2490, 2280, 2490, 2280, 1830 } /* GT,GC,C,C */
00826 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GC,C,G */
00827 , { 2280, 2280, 1830, 2280, 1830 } /* GT,GC,C,T */
00828 }
00829 , { { 2280, 2130, 2280, 1610, 2280 } /* GT,GC,G,E */
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00831 , { 2280, 2130, 2280, 1610, 2280 } /* GT,GC,G,C */
00832 , { 1610, 1610, 1610, 1610, 1610 } /* GT,GC,G,G */
00833 , { 2280, 2130, 2280, 1610, 2280 } /* GT,GC,G,T */
00834 }
00835 , { { 2280, 2280, 2280, 2280, 2280 } /* GT,GC,T,E */
00836 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GC,T,A */
00837 , { 2280, 2280, 1830, 2280, 1830 } /* GT,GC,T,C */
00838 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GC,T,G */
00839 , { 2280, 2280, 1830, 2280, 1920 } /* GT,GC,T,T */
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00842 , { { 2490, 2280, 2490, 2280, 2280 } /* GT,GT,E,E */
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00843 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GT,E,A */
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00845 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GT,E,G */
00846 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GT,E,T */
00847 }
00848 , { { 2280, 2150, 2280, 2130, 2280 } /* GT,GT,A,E */
00849 , { { 2150, 2150, 2150, 2130, 2150 } /* GT,GT,A,A */
00850 , { 2280, 2150, 2280, 2130, 2280 } /* GT,GT,A,C */
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00852 , { 2280, 2150, 2280, 2130, 2280 } /* GT,GT,A,T */
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00855 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GT,C,A */
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00858 , { 2280, 2280, 1830, 2280, 1830 } /* GT,GT,C,T */
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00862 , { 2280, 2130, 2280, 1610, 2280 } /* GT,GT,G,C */
00863 , { 1610, 1610, 1610, 1610, 1610 } /* GT,GT,G,G */
00864 , { 2280, 2130, 2280, 1610, 2280 } /* GT,GT,G,T */
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00868 , { 2280, 2280, 1830, 2280, 1830 } /* GT,GT,T,C */
00869 , { 2280, 2280, 2280, 2280, 2280 } /* GT,GT,T,G */
00870 , { 2280, 2280, 1830, 2280, 1920 } /* GT,GT,T,T */
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00877 , { { 2820, 2350, 2820, 2350, 2820 } /* GT,TG,E,T */
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00879 , { { 2820, 2280, 2820, 2280, 2820 } /* GT,TG,A,E */
00880 , { { 2280, 1830, 1830, 2280, 1830 } /* GT,TG,A,A */
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00883 , { { 2820, 1830, 2820, 2280, 2820 } /* GT,TG,A,T */
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00886 , { { 2350, 2350, 2350, 2350, 2350 } /* GT,TG,C,A */
00887 , { { 2640, 2350, 2640, 2350, 1940 } /* GT,TG,C,C */
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00889 , { { 2350, 2350, 1940, 2350, 1940 } /* GT,TG,C,T */
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00893 , { { 2820, 2020, 2820, 1800, 2820 } /* GT,TG,G,C */
00894 , { { 2020, 2020, 1800, 1800, 1800 } /* GT,TG,G,G */
00895 , { { 2820, 2020, 2820, 1800, 2820 } /* GT,TG,G,T */
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00901 , { { 2350, 2350, 2100, 2350, 2100 } /* GT,TG,T,T */
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00907 , { { 2980, 2980, 2980, 2980, 2980 } /* GT,AT,E,G */
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00914 , { { 2340, 2300, 2300, 2340, 2300 } /* GT,AT,A,T */
00915 }
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00917 , { { 2980, 2980, 2980, 2980, 2980 } /* GT,AT,C,A */
00918 , { { 3170, 2980, 3170, 2980, 3050 } /* GT,AT,C,C */
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00920 , { { 3050, 2980, 3050, 2980, 3050 } /* GT,AT,C,T */
00921 }
00922 , { { 2780, 2780, 2780, 1390, 2780 } /* GT,AT,G,E */
00923 , { { 2780, 2780, 2780, 1390, 2780 } /* GT,AT,G,A */
00924 , { { 2780, 2780, 2300, 1390, 2300 } /* GT,AT,G,C */
00925 , { { 1390, 1390, 1390, 1390, 1390 } /* GT,AT,G,G */
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00929 , { { 2980, 2980, 2020, 2980, 1940 } /* GT,AT,T,A */

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00931 , { 2980, 2980, 2020, 2980, 1940} /* GT,AT,T,G */
00932 , { 1940, 1940, 1940, 1940, 1940} /* GT,AT,T,T */
00933 }
00934 }
00935 , {{{ 3210, 3020, 3210, 3020, 3210} /* GT,TA,E,E */
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00937 , { 3210, 2580, 3210, 3020, 3210} /* GT,TA,E,C */
00938 , { 3020, 3020, 3020, 3020, 3020} /* GT,TA,E,G */
00939 , { 3210, 2580, 3210, 3020, 3210} /* GT,TA,E,T */
00940 }
00941 , {{{ 3210, 3020, 3210, 3020, 3210} /* GT,TA,A,E */
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00943 , { 3210, 1750, 3210, 3020, 3210} /* GT,TA,A,C */
00944 , { 3020, 3020, 3020, 3020, 3020} /* GT,TA,A,G */
00945 , { 3210, 1750, 3210, 3020, 3210} /* GT,TA,A,T */
00946 }
00947 , {{{ 3180, 2310, 3180, 2310, 2310} /* GT,TA,C,E */
00948 , { 2310, 2310, 2310, 2310, 2310} /* GT,TA,C,A */
00949 , { 3180, 2310, 3180, 2310, 1850} /* GT,TA,C,C */
00950 , { 2310, 2310, 2310, 2310, 2310} /* GT,TA,C,G */
00951 , { 2310, 2310, 1850, 2310, 1850} /* GT,TA,C,T */
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00953 , {{{ 3210, 2580, 3210, 2580, 3210} /* GT,TA,G,E */
00954 , { 2580, 2580, 2580, 2580, 2580} /* GT,TA,G,A */
00955 , { 3210, 2580, 3210, 2230, 3210} /* GT,TA,G,C */
00956 , { 2580, 2580, 2230, 2230, 2230} /* GT,TA,G,G */
00957 , { 3210, 2580, 3210, 2230, 3210} /* GT,TA,G,T */
00958 }
00959 , {{{ 2310, 2310, 2310, 2310, 890} /* GT,TA,T,E */
00960 , { 2310, 2310, 2310, 2310, 890} /* GT,TA,T,A */
00961 , { 2310, 2310, 2260, 2310, 890} /* GT,TA,T,C */
00962 , { 2310, 2310, 2310, 2310, 890} /* GT,TA,T,G */
00963 , { 890, 890, 890, 890, 890} /* GT,TA,T,T */
00964 }
00965 }
00966 , {{{ 3210, 3020, 3210, 3020, 3210} /* GT,NN,E,E */
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00968 , { 3210, 2980, 3210, 3020, 3210} /* GT,NN,E,C */
00969 , { 3020, 3020, 3020, 3020, 3020} /* GT,NN,E,G */
00970 , { 3210, 2980, 3210, 3020, 3210} /* GT,NN,E,T */
00971 }
00972 , {{{ 3210, 3020, 3210, 3020, 3210} /* GT,NN,A,E */
00973 , { 2890, 2890, 2300, 2340, 2300} /* GT,NN,A,A */
00974 , { 3210, 2300, 3210, 3020, 3210} /* GT,NN,A,C */
00975 , { 3020, 3020, 3020, 3020, 3020} /* GT,NN,A,G */
00976 , { 3210, 2300, 3210, 3020, 3210} /* GT,NN,A,T */
00977 }
00978 , {{{ 3180, 2980, 3180, 2980, 3050} /* GT,NN,C,E */
00979 , { 2980, 2980, 2980, 2980, 2980} /* GT,NN,C,A */
00980 , { 3180, 2980, 3180, 2980, 3050} /* GT,NN,C,C */
00981 , { 2980, 2980, 2980, 2980, 2980} /* GT,NN,C,G */
00982 , { 3050, 2980, 3050, 2980, 3050} /* GT,NN,C,T */
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00985 , { 2780, 2780, 2780, 2580, 2780} /* GT,NN,G,A */
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00987 , { 2580, 2580, 2230, 2230, 2230} /* GT,NN,G,G */
00988 , { 3210, 2780, 3210, 2230, 3210} /* GT,NN,G,T */
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00991 , { 2980, 2980, 2350, 2980, 2350} /* GT,NN,T,A */
00992 , { 2350, 2350, 2260, 2350, 2100} /* GT,NN,T,C */
00993 , { 2980, 2980, 2350, 2980, 2350} /* GT,NN,T,G */
00994 , { 2350, 2350, 2100, 2350, 2100} /* GT,NN,T,T */
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00996 }
00997 }
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01004 , {{{ INF, INF, INF, INF, INF} /* TG,NP,A,E */
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01006 , { INF, INF, INF, INF, INF} /* TG,NP,A,C */
01007 , { INF, INF, INF, INF, INF} /* TG,NP,A,G */
01008 , { INF, INF, INF, INF, INF} /* TG,NP,A,T */
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01012 , { INF, INF, INF, INF, INF} /* TG,NP,C,C */
01013 , { INF, INF, INF, INF, INF} /* TG,NP,C,G */
01014 , { INF, INF, INF, INF, INF} /* TG,NP,C,T */
01015 }
01016 , {{{ INF, INF, INF, INF, INF} /* TG,NP,G,E */
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01019 , { INF, INF, INF, INF, INF } /* TG,NP,G,G */
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01021 }
01022 , { { INF, INF, INF, INF, INF } /* TG,NP,T,E */
01023 , { INF, INF, INF, INF, INF } /* TG,NP,T,A */
01024 , { INF, INF, INF, INF, INF } /* TG,NP,T,C */
01025 , { INF, INF, INF, INF, INF } /* TG,NP,T,G */
01026 , { INF, INF, INF, INF, INF } /* TG,NP,T,T */
01027 }
01028 }
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01032 , { 2500, 2500, 2500, 2500, 2500 } /* TG,CG,E,G */
01033 , { 2500, 2500, 2400, 2500, 2400 } /* TG,CG,E,T */
01034 }
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01037 , { 2500, 2290, 2400, 2500, 2400 } /* TG,CG,A,C */
01038 , { 2500, 2500, 2500, 2500, 2500 } /* TG,CG,A,G */
01039 , { 2500, 2290, 2400, 2500, 2400 } /* TG,CG,A,T */
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01043 , { 2400, 2400, 2300, 2400, 2050 } /* TG,CG,C,C */
01044 , { 2400, 2400, 2400, 2400, 2050 } /* TG,CG,C,G */
01045 , { 2050, 2050, 2050, 2050, 2050 } /* TG,CG,C,T */
01046 }
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01048 , { 2500, 2500, 2500, 2500, 2500 } /* TG,CG,G,A */
01049 , { 2500, 2500, 2400, 1900, 2400 } /* TG,CG,G,C */
01050 , { 2500, 2500, 1900, 1900, 1900 } /* TG,CG,G,G */
01051 , { 2500, 2500, 2400, 1900, 2400 } /* TG,CG,G,T */
01052 }
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01054 , { 2400, 2400, 2050, 2400, 1620 } /* TG,CG,T,A */
01055 , { 2050, 2050, 2050, 2050, 1620 } /* TG,CG,T,C */
01056 , { 2400, 2400, 2050, 2400, 1620 } /* TG,CG,T,G */
01057 , { 1620, 1620, 1620, 1620, 1620 } /* TG,CG,T,T */
01058 }
01059 }
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01062 , { 2820, 2820, 2640, 2820, 2350 } /* TG,GC,E,C */
01063 , { 2820, 2820, 2820, 2820, 2100 } /* TG,GC,E,G */
01064 , { 2350, 2350, 2350, 2100, 2350 } /* TG,GC,E,T */
01065 }
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01068 , { 2350, 2350, 2350, 2020, 2350 } /* TG,GC,A,C */
01069 , { 2020, 2020, 2020, 2020, 2020 } /* TG,GC,A,G */
01070 , { 2350, 2350, 2350, 2020, 2350 } /* TG,GC,A,T */
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01074 , { 2820, 2820, 2640, 2820, 2080 } /* TG,GC,C,C */
01075 , { 2820, 2820, 2820, 2820, 2080 } /* TG,GC,C,G */
01076 , { 2080, 2080, 2080, 2080, 2080 } /* TG,GC,C,T */
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01079 , { 2280, 2280, 2280, 1800, 2280 } /* TG,GC,G,A */
01080 , { 2350, 2280, 2350, 1800, 2350 } /* TG,GC,G,C */
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01082 , { 2350, 2280, 2350, 1800, 2350 } /* TG,GC,G,T */
01083 }
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01086 , { 1940, 1940, 1940, 1940, 1940 } /* TG,GC,T,C */
01087 , { 2820, 2820, 1940, 2820, 2100 } /* TG,GC,T,G */
01088 , { 2100, 2100, 2100, 2100, 2100 } /* TG,GC,T,T */
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01090 }
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01092 , { 2820, 2820, 2820, 2820, 2350 } /* TG,GT,E,A */
01093 , { 2820, 2820, 2640, 2820, 2350 } /* TG,GT,E,C */
01094 , { 2820, 2820, 2820, 2820, 2100 } /* TG,GT,E,G */
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01096 }
01097 , { { 2350, 2350, 2350, 2020, 2350 } /* TG,GT,A,E */
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01100 , { 2020, 2020, 2020, 2020, 2020 } /* TG,GT,A,G */
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01102 }
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01105 , { 2820, 2820, 2640, 2820, 2080} /* TG,GT,C,C */
01106 , { 2820, 2820, 2820, 2820, 2080} /* TG,GT,C,G */
01107 , { 2080, 2080, 2080, 2080, 2080} /* TG,GT,C,T */
01108 }
01109 , { { 2350, 2280, 2350, 1800, 2350} /* TG,GT,G,E */
01110 , { 2280, 2280, 2280, 1800, 2280} /* TG,GT,G,A */
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01112 , { 1800, 1800, 1800, 1800, 1800} /* TG,GT,G,G */
01113 , { 2350, 2280, 2350, 1800, 2350} /* TG,GT,G,T */
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01115 , { { 2820, 2820, 2100, 2820, 2100} /* TG,GT,T,E */
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01118 , { 2820, 2820, 1940, 2820, 2100} /* TG,GT,T,G */
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01125 , { 2500, 2500, 2500, 2500, 2500} /* TG,TG,E,G */
01126 , { 2500, 2500, 2400, 2500, 2400} /* TG,TG,E,T */
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01130 , { 2500, 2290, 2400, 2500, 2400} /* TG,TG,A,C */
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01133 }
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01138 , { 2050, 2050, 2050, 2050, 2050} /* TG,TG,C,T */
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01140 , { { 2500, 2500, 2500, 2500, 2500} /* TG,TG,G,E */
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01143 , { 2500, 2500, 1900, 1900, 1900} /* TG,TG,G,G */
01144 , { 2500, 2500, 2400, 1900, 2400} /* TG,TG,G,T */
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01146 , { { 2400, 2400, 2050, 2400, 1620} /* TG,TG,T,E */
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01148 , { 2050, 2050, 2050, 2050, 1620} /* TG,TG,T,C */
01149 , { 2400, 2400, 2050, 2400, 1620} /* TG,TG,T,G */
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01155 , { 2420, 2420, 2420, 2280, 2420} /* TG,AT,E,C */
01156 , { 2280, 2280, 2280, 2280, 1670} /* TG,AT,E,G */
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01160 , { 2420, 2390, 2420, 1670, 2420} /* TG,AT,A,A */
01161 , { 2420, 2420, 2420, 1670, 2420} /* TG,AT,A,C */
01162 , { 1670, 1670, 1670, 1670, 1670} /* TG,AT,A,G */
01163 , { 2420, 2420, 2420, 1670, 2420} /* TG,AT,A,T */
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01167 , { 2280, 2280, 2150, 2280, 660} /* TG,AT,C,C */
01168 , { 2280, 2280, 2280, 2280, 660} /* TG,AT,C,G */
01169 , { 660, 660, 660, 660, 660} /* TG,AT,C,T */
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01172 , { 1260, 1260, 1260, 900, 1260} /* TG,AT,G,A */
01173 , { 2420, 1260, 2420, 900, 2420} /* TG,AT,G,C */
01174 , { 900, 900, 900, 900, 900} /* TG,AT,G,G */
01175 , { 2420, 1260, 2420, 900, 2420} /* TG,AT,G,T */
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01177 , { { 2280, 2280, 1400, 2280, 1140} /* TG,AT,T,E */
01178 , { 2280, 2280, 1400, 2280, 1140} /* TG,AT,T,A */
01179 , { 1400, 1400, 1400, 1400, 1140} /* TG,AT,T,C */
01180 , { 2280, 2280, 1400, 2280, 1140} /* TG,AT,T,G */
01181 , { 1140, 1140, 1140, 1140, 1140} /* TG,AT,T,T */
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01183 }
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01187 , { 3020, 3020, 3020, 3020, 3020} /* TG,TA,E,G */
01188 , { 3210, 2890, 3210, 3020, 3210} /* TG,TA,E,T */
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01190 , { { 3210, 3020, 3210, 3020, 3210} /* TG,TA,A,E */

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01198 , { 2850, 2850, 2480, 2850, 1900} /* TG,TA,C,C */
01199 , { 2850, 2850, 2850, 2850, 1900} /* TG,TA,C,G */
01200 , { 1900, 1900, 1900, 1900, 1900} /* TG,TA,C,T */
01201 }
01202 , { { 3210, 2580, 3210, 1780, 3210} /* TG,TA,G,E */
01203 , { 2580, 2580, 2580, 1780, 2580} /* TG,TA,G,A */
01204 , { 3210, 2580, 3210, 1780, 3210} /* TG,TA,G,C */
01205 , { 1780, 1780, 1780, 1780, 1780} /* TG,TA,G,G */
01206 , { 3210, 2580, 3210, 1780, 3210} /* TG,TA,G,T */
01207 }
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01210 , { 2190, 2190, 2190, 2190, 1960} /* TG,TA,T,C */
01211 , { 2850, 2850, 2190, 2850, 1960} /* TG,TA,T,G */
01212 , { 1960, 1960, 1960, 1960, 1960} /* TG,TA,T,T */
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01214 }
01215 , { { { 3210, 3020, 3210, 3020, 3210} /* TG,NN,E,E */
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01217 , { 3210, 2890, 3210, 3020, 3210} /* TG,NN,E,C */
01218 , { 3020, 3020, 3020, 3020, 3020} /* TG,NN,E,G */
01219 , { 3210, 2890, 3210, 3020, 3210} /* TG,NN,E,T */
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01223 , { 3210, 2890, 3210, 3020, 3210} /* TG,NN,A,C */
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01225 , { 3210, 2890, 3210, 3020, 3210} /* TG,NN,A,T */
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01229 , { 2850, 2850, 2640, 2850, 2080} /* TG,NN,C,C */
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01235 , { 3210, 2580, 3210, 1900, 3210} /* TG,NN,G,C */
01236 , { 2500, 2500, 1900, 1900, 1900} /* TG,NN,G,G */
01237 , { 3210, 2580, 3210, 1900, 3210} /* TG,NN,G,T */
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01241 , { 2190, 2190, 2190, 2190, 1960} /* TG,NN,T,C */
01242 , { 2850, 2850, 2190, 2850, 2100} /* TG,NN,T,G */
01243 , { 2100, 2100, 2100, 2100, 2100} /* TG,NN,T,T */
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01245 }
01246 }
01247 , { { { INF, INF, INF, INF, INF} /* AT,NP,E,E */
01248 , { INF, INF, INF, INF, INF} /* AT,NP,E,A */
01249 , { INF, INF, INF, INF, INF} /* AT,NP,E,C */
01250 , { INF, INF, INF, INF, INF} /* AT,NP,E,G */
01251 , { INF, INF, INF, INF, INF} /* AT,NP,E,T */
01252 }
01253 , { { INF, INF, INF, INF, INF} /* AT,NP,A,E */
01254 , { INF, INF, INF, INF, INF} /* AT,NP,A,A */
01255 , { INF, INF, INF, INF, INF} /* AT,NP,A,C */
01256 , { INF, INF, INF, INF, INF} /* AT,NP,A,G */
01257 , { INF, INF, INF, INF, INF} /* AT,NP,A,T */
01258 }
01259 , { { INF, INF, INF, INF, INF} /* AT,NP,C,E */
01260 , { INF, INF, INF, INF, INF} /* AT,NP,C,A */
01261 , { INF, INF, INF, INF, INF} /* AT,NP,C,C */
01262 , { INF, INF, INF, INF, INF} /* AT,NP,C,G */
01263 , { INF, INF, INF, INF, INF} /* AT,NP,C,T */
01264 }
01265 , { { INF, INF, INF, INF, INF} /* AT,NP,G,E */
01266 , { INF, INF, INF, INF, INF} /* AT,NP,G,A */
01267 , { INF, INF, INF, INF, INF} /* AT,NP,G,C */
01268 , { INF, INF, INF, INF, INF} /* AT,NP,G,G */
01269 , { INF, INF, INF, INF, INF} /* AT,NP,G,T */
01270 }
01271 , { { INF, INF, INF, INF, INF} /* AT,NP,T,E */
01272 , { INF, INF, INF, INF, INF} /* AT,NP,T,A */
01273 , { INF, INF, INF, INF, INF} /* AT,NP,T,C */
01274 , { INF, INF, INF, INF, INF} /* AT,NP,T,G */
01275 , { INF, INF, INF, INF, INF} /* AT,NP,T,T */
01276 }
01277 }

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01282 ,{ 2280, 2280, 2280, 1400, 2280} /* AT,CG,E,T */
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01284 ,{{{ 2390, 2390, 2390, 1260, 2390} /* AT,CG,A,E */
01285 ,{ 2390, 2390, 2390, 1260, 2390} /* AT,CG,A,A */
01286 ,{ 2280, 2280, 2280, 1260, 2280} /* AT,CG,A,C */
01287 ,{ 1260, 1260, 1260, 1260, 1260} /* AT,CG,A,G */
01288 ,{ 2280, 2280, 2280, 1260, 2280} /* AT,CG,A,T */
01289 }
01290 ,{{{ 2420, 2420, 2420, 2420, 1400} /* AT,CG,C,E */
01291 ,{ 2420, 2420, 2420, 2420, 1400} /* AT,CG,C,A */
01292 ,{ 2420, 2420, 2150, 2420, 1400} /* AT,CG,C,C */
01293 ,{ 2420, 2420, 2420, 2420, 1400} /* AT,CG,C,G */
01294 ,{ 1400, 1400, 1400, 1400, 1400} /* AT,CG,C,T */
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01298 ,{ 2280, 1670, 2280, 900, 2280} /* AT,CG,G,C */
01299 ,{ 1670, 1670, 900, 900, 900} /* AT,CG,G,G */
01300 ,{ 2280, 1670, 2280, 900, 2280} /* AT,CG,G,T */
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01303 ,{ 2420, 2420, 660, 2420, 1140} /* AT,CG,T,A */
01304 ,{ 660, 660, 660, 660, 660} /* AT,CG,T,C */
01305 ,{ 2420, 2420, 660, 2420, 1140} /* AT,CG,T,G */
01306 ,{ 1140, 1140, 660, 1140, 1140} /* AT,CG,T,T */
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01308 }
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01317 ,{ 2980, 2980, 2980, 2780, 2980} /* AT,GC,A,C */
01318 ,{ 2780, 2780, 2780, 2780, 2780} /* AT,GC,A,G */
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01323 ,{ 3170, 2300, 3170, 2300, 2020} /* AT,GC,C,C */
01324 ,{ 2300, 2300, 2300, 2300, 2020} /* AT,GC,C,G */
01325 ,{ 2020, 2020, 2020, 2020, 2020} /* AT,GC,C,T */
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01330 ,{ 1390, 1390, 1390, 1390, 1390} /* AT,GC,G,G */
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01335 ,{ 3050, 2300, 3050, 2300, 1940} /* AT,GC,T,C */
01336 ,{ 2300, 2300, 2300, 2300, 1940} /* AT,GC,T,G */
01337 ,{ 1940, 1940, 1940, 1940, 1940} /* AT,GC,T,T */
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01339 }
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01343 ,{ 2780, 2780, 2780, 2780, 2780} /* AT,GT,E,G */
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01346 ,{{{ 2980, 2980, 2980, 2780, 2980} /* AT,GT,A,E */
01347 ,{ 2980, 2890, 2980, 2780, 2980} /* AT,GT,A,A */
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01349 ,{ 2780, 2780, 2780, 2780, 2780} /* AT,GT,A,G */
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01354 ,{ 3170, 2300, 3170, 2300, 2020} /* AT,GT,C,C */
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01372 , { 2420, 2420, 2420, 2420, 2390} /* AT,TG,E,A */
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01374 , { 2420, 2420, 2420, 2420, 1400} /* AT,TG,E,G */
01375 , { 2280, 2280, 2280, 1400, 2280} /* AT,TG,E,T */
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01378 , { 2390, 2390, 2390, 1260, 2390} /* AT,TG,A,A */
01379 , { 2280, 2280, 2280, 1260, 2280} /* AT,TG,A,C */
01380 , { 1260, 1260, 1260, 1260, 1260} /* AT,TG,A,G */
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01384 , { 2420, 2420, 2420, 2420, 1400} /* AT,TG,C,A */
01385 , { 2420, 2420, 2150, 2420, 1400} /* AT,TG,C,C */
01386 , { 2420, 2420, 2420, 2420, 1400} /* AT,TG,C,G */
01387 , { 1400, 1400, 1400, 1400, 1400} /* AT,TG,C,T */
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01392 , { 1670, 1670, 900, 900, 900} /* AT,TG,G,G */
01393 , { 2280, 1670, 2280, 900, 2280} /* AT,TG,G,T */
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01397 , { 660, 660, 660, 660, 660} /* AT,TG,T,C */
01398 , { 2420, 2420, 660, 2420, 1140} /* AT,TG,T,G */
01399 , { 1140, 1140, 660, 1140, 1140} /* AT,TG,T,T */
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01417 , { 2870, 2870, 2870, 2870, 2320} /* AT,AT,C,G */
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01429 , { 2870, 2870, 2320, 2870, 2870} /* AT,AT,T,G */
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01432 }
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01435 , { 3360, 3180, 3360, 2960, 2040} /* AT,TA,E,C */
01436 , { 2960, 2960, 2960, 2960, 2960} /* AT,TA,E,G */
01437 , { 3180, 3180, 2040, 2960, 2040} /* AT,TA,E,T */
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01448 , { 2930, 2930, 2930, 2930, 2930} /* AT,TA,C,G */
01449 , { 1730, 1730, 1730, 1730, 1730} /* AT,TA,C,T */
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01467 , { 2960, 2960, 2960, 2960, 2960} /* AT,NN,E,G */
01468 , { 3180, 3180, 2980, 2960, 2980} /* AT,NN,E,T */
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01473 , { 2960, 2960, 2960, 2960, 2960} /* AT,NN,A,G */
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01479 , { 2930, 2930, 2930, 2930, 2930} /* AT,NN,C,G */
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01485 , { 2600, 2600, 2300, 2300, 2300} /* AT,NN,G,G */
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01491 , { 2930, 2930, 2930, 2930, 2870} /* AT,NN,T,G */
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01494 }
01495 }
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01497 , { INF, INF, INF, INF, INF} /* TA,NP,E,A */
01498 , { INF, INF, INF, INF, INF} /* TA,NP,E,C */
01499 , { INF, INF, INF, INF, INF} /* TA,NP,E,G */
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01502 , { { INF, INF, INF, INF, INF} /* TA,NP,A,E */
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01504 , { INF, INF, INF, INF, INF} /* TA,NP,A,C */
01505 , { INF, INF, INF, INF, INF} /* TA,NP,A,G */
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01512 , { INF, INF, INF, INF, INF} /* TA,NP,C,T */
01513 }
01514 , { { INF, INF, INF, INF, INF} /* TA,NP,G,E */
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01517 , { INF, INF, INF, INF, INF} /* TA,NP,G,G */
01518 , { INF, INF, INF, INF, INF} /* TA,NP,G,T */
01519 }
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01522 , { INF, INF, INF, INF, INF} /* TA,NP,T,C */
01523 , { INF, INF, INF, INF, INF} /* TA,NP,T,G */
01524 , { INF, INF, INF, INF, INF} /* TA,NP,T,T */
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01526 }
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01533 , { { 2890, 2890, 2890, 2580, 2890} /* TA,CG,A,E */
01534 , { 2890, 2890, 2890, 2580, 2890} /* TA,CG,A,A */
01535 , { 2850, 2850, 2850, 2580, 2850} /* TA,CG,A,C */
01536 , { 2580, 2580, 2580, 2580, 2580} /* TA,CG,A,G */
01537 , { 2850, 2850, 2850, 2580, 2850} /* TA,CG,A,T */
01538 }
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01547 ,{ 3020, 3020, 2850, 1780, 2850} /* TA,CG,G,C */
01548 ,{ 1780, 1780, 1780, 1780, 1780} /* TA,CG,G,G */
01549 ,{ 3020, 3020, 2850, 1780, 2850} /* TA,CG,G,T */
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01555 ,{ 1960, 1960, 1960, 1960, 1960} /* TA,CG,T,T */
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01568 ,{ 2580, 1750, 2310, 2580, 2310} /* TA,GC,A,T */
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01579 ,{ 2230, 2230, 2230, 2230, 2230} /* TA,GC,G,G */
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01581 }
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01584 ,{ 1850, 1850, 1850, 1850, 890} /* TA,GC,T,C */
01585 ,{ 3210, 3210, 1850, 3210, 890} /* TA,GC,T,G */
01586 ,{ 890, 890, 890, 890, 890} /* TA,GC,T,T */
01587 }
01588 }
01589 ,{{{ 3210, 3210, 3210, 3210, 3210} /* TA,GT,E,E */
01590 ,{ 3210, 3210, 3210, 3210, 3210} /* TA,GT,E,A */
01591 ,{ 3210, 3210, 3180, 3210, 3180} /* TA,GT,E,C */
01592 ,{ 3210, 3210, 3210, 3210, 3210} /* TA,GT,E,G */
01593 ,{ 3210, 3210, 2310, 3210, 2310} /* TA,GT,E,T */
01594 }
01595 ,{{{ 2580, 2580, 2580, 2580, 2580} /* TA,GT,A,E */
01596 ,{ 2580, 1750, 1750, 2580, 1750} /* TA,GT,A,A */
01597 ,{ 2580, 1750, 2310, 2580, 2310} /* TA,GT,A,C */
01598 ,{ 2580, 2580, 2580, 2580, 2580} /* TA,GT,A,G */
01599 ,{ 2580, 1750, 2310, 2580, 2310} /* TA,GT,A,T */
01600 }
01601 ,{{{ 3210, 3210, 3210, 3210, 3210} /* TA,GT,C,E */
01602 ,{ 3210, 3210, 3210, 3210, 3210} /* TA,GT,C,A */
01603 ,{ 3210, 3210, 3180, 3210, 3180} /* TA,GT,C,C */
01604 ,{ 3210, 3210, 3210, 3210, 3210} /* TA,GT,C,G */
01605 ,{ 3210, 3210, 2260, 3210, 2260} /* TA,GT,C,T */
01606 }
01607 ,{{{ 3020, 3020, 3020, 2230, 3020} /* TA,GT,G,E */
01608 ,{ 3020, 3020, 3020, 2230, 3020} /* TA,GT,G,A */
01609 ,{ 3020, 3020, 2310, 2230, 2310} /* TA,GT,G,C */
01610 ,{ 2230, 2230, 2230, 2230, 2230} /* TA,GT,G,G */
01611 ,{ 3020, 3020, 2310, 2230, 2310} /* TA,GT,G,T */
01612 }
01613 ,{{{ 3210, 3210, 1850, 3210, 890} /* TA,GT,T,E */
01614 ,{ 3210, 3210, 1850, 3210, 890} /* TA,GT,T,A */
01615 ,{ 1850, 1850, 1850, 1850, 890} /* TA,GT,T,C */
01616 ,{ 3210, 3210, 1850, 3210, 890} /* TA,GT,T,G */
01617 ,{ 890, 890, 890, 890, 890} /* TA,GT,T,T */
01618 }
01619 }
01620 ,{{{ 3210, 3210, 3210, 3210, 3020} /* TA,TG,E,E */
01621 ,{ 3210, 3210, 3210, 3210, 3020} /* TA,TG,E,A */
01622 ,{ 3210, 3210, 2850, 3210, 2850} /* TA,TG,E,C */
01623 ,{ 3210, 3210, 3210, 3210, 2580} /* TA,TG,E,G */
01624 ,{ 3020, 3020, 2850, 2580, 2850} /* TA,TG,E,T */
01625 }

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01627 ,{{ 2890, 2890, 2890, 2580, 2890} /* TA,TG,A,A */
01628 ,{{ 2850, 2850, 2850, 2580, 2850} /* TA,TG,A,C */
01629 ,{{ 2580, 2580, 2580, 2580, 2580} /* TA,TG,A,G */
01630 ,{{ 2850, 2850, 2850, 2580, 2850} /* TA,TG,A,T */
01631 }
01632 ,{{ 3210, 3210, 3210, 3210, 2190} /* TA,TG,C,E */
01633 ,{{ 3210, 3210, 3210, 3210, 2190} /* TA,TG,C,A */
01634 ,{{ 3210, 3210, 2480, 3210, 2190} /* TA,TG,C,C */
01635 ,{{ 3210, 3210, 3210, 3210, 2190} /* TA,TG,C,G */
01636 ,{{ 2190, 2190, 2190, 2190, 2190} /* TA,TG,C,T */
01637 }
01638 ,{{ 3020, 3020, 3020, 1780, 3020} /* TA,TG,G,E */
01639 ,{{ 3020, 3020, 3020, 1780, 3020} /* TA,TG,G,A */
01640 ,{{ 3020, 3020, 2850, 1780, 2850} /* TA,TG,G,C */
01641 ,{{ 1780, 1780, 1780, 1780, 1780} /* TA,TG,G,G */
01642 ,{{ 3020, 3020, 2850, 1780, 2850} /* TA,TG,G,T */
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01645 ,{{ 3210, 3210, 1900, 3210, 1960} /* TA,TG,T,A */
01646 ,{{ 1960, 1900, 1900, 1900, 1960} /* TA,TG,T,C */
01647 ,{{ 3210, 3210, 1900, 3210, 1960} /* TA,TG,T,G */
01648 ,{{ 1960, 1960, 1960, 1960, 1960} /* TA,TG,T,T */
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01650 }
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01652 ,{{{ 3180, 3180, 2960, 2070, 2960} /* TA,AT,E,A */
01653 ,{{{ 3360, 2960, 3360, 2070, 2930} /* TA,AT,E,C */
01654 ,{{{ 2240, 2070, 2070, 2070, 2240} /* TA,AT,E,G */
01655 ,{{{ 2960, 2960, 2930, 2240, 2930} /* TA,AT,E,T */
01656 }
01657 ,{{{ 3180, 3180, 2930, 2070, 2930} /* TA,AT,A,E */
01658 ,{{{ 3180, 3180, 2930, 2070, 2930} /* TA,AT,A,A */
01659 ,{{{ 2930, 2930, 2930, 2070, 2930} /* TA,AT,A,C */
01660 ,{{{ 2070, 2070, 2070, 2070, 2070} /* TA,AT,A,G */
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01662 }
01663 ,{{{ 3360, 2240, 3360, 2240, 2240} /* TA,AT,C,E */
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01665 ,{{{ 3360, 2040, 3360, 2040, 2240} /* TA,AT,C,C */
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01672 ,{{{ 2050, 2050, 2050, 2050, 2050} /* TA,AT,G,G */
01673 ,{{{ 2960, 2960, 2930, 2050, 2930} /* TA,AT,G,T */
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01677 ,{{{ 1730, 1730, 1730, 1730, 1410} /* TA,AT,T,C */
01678 ,{{{ 2040, 2040, 1730, 2040, 1410} /* TA,AT,T,G */
01679 ,{{{ 1410, 1410, 1410, 1410, 1410} /* TA,AT,T,T */
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01681 }
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01683 ,{{{ 3320, 3320, 3320, 3320, 3100} /* TA,TA,E,A */
01684 ,{{{ 3630, 3320, 3630, 3320, 3320} /* TA,TA,E,C */
01685 ,{{{ 3320, 3320, 3320, 3320, 3080} /* TA,TA,E,G */
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01688 ,{{{ 3320, 3100, 3320, 3080, 3320} /* TA,TA,A,E */
01689 ,{{{ 3100, 3100, 3100, 3080, 3100} /* TA,TA,A,A */
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01691 ,{{{ 3080, 3080, 3080, 3080, 3080} /* TA,TA,A,G */
01692 ,{{{ 3320, 3100, 3320, 3080, 3320} /* TA,TA,A,T */
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01694 ,{{{ 3630, 3320, 3630, 3320, 2140} /* TA,TA,C,E */
01695 ,{{{ 3320, 3320, 3320, 3320, 2140} /* TA,TA,C,A */
01696 ,{{{ 3630, 3320, 3630, 3320, 2140} /* TA,TA,C,C */
01697 ,{{{ 3320, 3320, 3320, 3320, 2140} /* TA,TA,C,G */
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01703 ,{{{ 3080, 3080, 2730, 2730, 2730} /* TA,TA,G,G */
01704 ,{{{ 3320, 3080, 3320, 2730, 3320} /* TA,TA,G,T */
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01707 ,{{{ 3320, 3320, 2140, 3320, 2510} /* TA,TA,T,A */
01708 ,{{{ 2140, 2140, 2140, 2140, 2140} /* TA,TA,T,C */
01709 ,{{{ 3320, 3320, 2140, 3320, 2510} /* TA,TA,T,G */
01710 ,{{{ 2510, 2510, 2140, 2510, 2510} /* TA,TA,T,T */
01711 }
01712 }
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01714 ,{ 3320, 3320, 3320, 3320, 3210} /* TA,NN,E,A */
01715 ,{ 3630, 3320, 3630, 3320, 3320} /* TA,NN,E,C */
01716 ,{ 3320, 3320, 3320, 3320, 3210} /* TA,NN,E,G */
01717 ,{ 3320, 3210, 3320, 3210, 3320} /* TA,NN,E,T */
01718 }
01719 ,{{{ 3320, 3180, 3320, 3080, 3320} /* TA,NN,A,E */
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01721 ,{ 3320, 3100, 3320, 3080, 3320} /* TA,NN,A,C */
01722 ,{ 3080, 3080, 3080, 3080, 3080} /* TA,NN,A,G */
01723 ,{ 3320, 3100, 3320, 3080, 3320} /* TA,NN,A,T */
01724 }
01725 ,{{{ 3630, 3320, 3630, 3320, 3210} /* TA,NN,C,E */
01726 ,{ 3320, 3320, 3320, 3320, 3210} /* TA,NN,C,A */
01727 ,{ 3630, 3320, 3630, 3320, 3180} /* TA,NN,C,C */
01728 ,{ 3320, 3320, 3320, 3320, 3210} /* TA,NN,C,G */
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01730 }
01731 ,{{{ 3320, 3080, 3320, 3080, 3320} /* TA,NN,G,E */
01732 ,{ 3080, 3080, 3080, 3080, 3080} /* TA,NN,G,A */
01733 ,{ 3320, 3080, 3320, 2730, 3320} /* TA,NN,G,C */
01734 ,{ 3080, 3080, 2730, 2730, 2730} /* TA,NN,G,G */
01735 ,{ 3320, 3080, 3320, 2730, 3320} /* TA,NN,G,T */
01736 }
01737 ,{{{ 3320, 3320, 2140, 3320, 2510} /* TA,NN,T,E */
01738 ,{ 3320, 3320, 2140, 3320, 2510} /* TA,NN,T,A */
01739 ,{ 2140, 2140, 2140, 2140, 2140} /* TA,NN,T,C */
01740 ,{ 3320, 3320, 2140, 3320, 2510} /* TA,NN,T,G */
01741 ,{ 2510, 2510, 2140, 2510, 2510} /* TA,NN,T,T */
01742 }
01743 }
01744 }
01745 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E,E */
01746 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A */
01747 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C */
01748 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G */
01749 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T */
01750 }
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01753 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,C */
01754 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,G */
01755 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,T */
01756 }
01757 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,C,E */
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01759 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,C */
01760 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,G */
01761 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,T */
01762 }
01763 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,G,E */
01764 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,A */
01765 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,C */
01766 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,G */
01767 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,T */
01768 }
01769 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,T,E */
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01771 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,C */
01772 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,G */
01773 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,T */
01774 }
01775 }
01776 ,{{{ 3210, 3210, 3210, 3210, 3020} /* NN,CG,E,E */
01777 ,{ 3210, 3210, 3210, 3210, 3020} /* NN,CG,E,A */
01778 ,{ 3210, 3210, 2850, 3210, 2850} /* NN,CG,E,C */
01779 ,{ 3210, 3210, 3210, 3210, 2580} /* NN,CG,E,G */
01780 ,{ 3020, 3020, 2850, 2580, 2850} /* NN,CG,E,T */
01781 }
01782 ,{{{ 2890, 2890, 2890, 2580, 2890} /* NN,CG,A,E */
01783 ,{ 2890, 2890, 2890, 2580, 2890} /* NN,CG,A,A */
01784 ,{ 2850, 2850, 2850, 2580, 2850} /* NN,CG,A,C */
01785 ,{ 2580, 2580, 2580, 2580, 2580} /* NN,CG,A,G */
01786 ,{ 2850, 2850, 2850, 2580, 2850} /* NN,CG,A,T */
01787 }
01788 ,{{{ 3210, 3210, 3210, 3210, 2350} /* NN,CG,C,E */
01789 ,{ 3210, 3210, 3210, 3210, 2350} /* NN,CG,C,A */
01790 ,{ 3210, 3210, 2640, 3210, 2190} /* NN,CG,C,C */
01791 ,{ 3210, 3210, 3210, 3210, 2350} /* NN,CG,C,G */
01792 ,{ 2350, 2350, 2190, 2350, 2190} /* NN,CG,C,T */
01793 }
01794 ,{{{ 3020, 3020, 3020, 2500, 3020} /* NN,CG,G,E */
01795 ,{ 3020, 3020, 3020, 2500, 3020} /* NN,CG,G,A */
01796 ,{ 3020, 3020, 2850, 1900, 2850} /* NN,CG,G,C */
01797 ,{ 2500, 2500, 1900, 1900, 1900} /* NN,CG,G,G */
01798 ,{ 3020, 3020, 2850, 1900, 2850} /* NN,CG,G,T */
01799 }

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01801 ,{ 3210, 3210, 2350, 3210, 2350} /* NN,CG,T,A */
01802 ,{ 2350, 2350, 2080, 2350, 2100} /* NN,CG,T,C */
01803 ,{ 3210, 3210, 2350, 3210, 2350} /* NN,CG,T,G */
01804 ,{ 2350, 2350, 2100, 2350, 2100} /* NN,CG,T,T */
01805 }
01806 }
01807 ,{{{ 3210, 3210, 3210, 3210, 3210} /* NN,GC,E,E */
01808 ,{ 3210, 3210, 3210, 3210, 3210} /* NN,GC,E,A */
01809 ,{ 3210, 3210, 3180, 3210, 3180} /* NN,GC,E,C */
01810 ,{ 3210, 3210, 3210, 3210, 3210} /* NN,GC,E,G */
01811 ,{ 3210, 3210, 2980, 3210, 2980} /* NN,GC,E,T */
01812 }
01813 ,{{{ 2980, 2980, 2980, 2780, 2980} /* NN,GC,A,E */
01814 ,{ 2980, 2890, 2980, 2780, 2980} /* NN,GC,A,A */
01815 ,{ 2980, 2980, 2980, 2780, 2980} /* NN,GC,A,C */
01816 ,{ 2780, 2780, 2780, 2780, 2780} /* NN,GC,A,G */
01817 ,{ 2980, 2980, 2980, 2780, 2980} /* NN,GC,A,T */
01818 }
01819 ,{{{ 3210, 3210, 3210, 3210, 3210} /* NN,GC,C,E */
01820 ,{ 3210, 3210, 3210, 3210, 3210} /* NN,GC,C,A */
01821 ,{ 3210, 3210, 3180, 3210, 3180} /* NN,GC,C,C */
01822 ,{ 3210, 3210, 3210, 3210, 3210} /* NN,GC,C,G */
01823 ,{ 3210, 3210, 2260, 3210, 2260} /* NN,GC,C,T */
01824 }
01825 ,{{{ 3020, 3020, 3020, 2230, 3020} /* NN,GC,G,E */
01826 ,{ 3020, 3020, 3020, 2230, 3020} /* NN,GC,G,A */
01827 ,{ 3020, 3020, 2980, 2230, 2980} /* NN,GC,G,C */
01828 ,{ 2230, 2230, 2230, 2230, 2230} /* NN,GC,G,G */
01829 ,{ 3020, 3020, 2980, 2230, 2980} /* NN,GC,G,T */
01830 }
01831 ,{{{ 3210, 3210, 3050, 3210, 2280} /* NN,GC,T,E */
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01833 ,{ 3050, 2300, 3050, 2300, 1940} /* NN,GC,T,C */
01834 ,{ 3210, 3210, 2300, 3210, 2280} /* NN,GC,T,G */
01835 ,{ 2280, 2280, 2100, 2280, 2100} /* NN,GC,T,T */
01836 }
01837 }
01838 ,{{{ 3210, 3210, 3210, 3210, 3210} /* NN,GT,E,E */
01839 ,{ 3210, 3210, 3210, 3210, 3210} /* NN,GT,E,A */
01840 ,{ 3210, 3210, 3180, 3210, 3180} /* NN,GT,E,C */
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01842 ,{ 3210, 3210, 2980, 3210, 2980} /* NN,GT,E,T */
01843 }
01844 ,{{{ 2980, 2980, 2980, 2780, 2980} /* NN,GT,A,E */
01845 ,{ 2980, 2890, 2980, 2780, 2980} /* NN,GT,A,A */
01846 ,{ 2980, 2980, 2980, 2780, 2980} /* NN,GT,A,C */
01847 ,{ 2780, 2780, 2780, 2780, 2780} /* NN,GT,A,G */
01848 ,{ 2980, 2980, 2980, 2780, 2980} /* NN,GT,A,T */
01849 }
01850 ,{{{ 3210, 3210, 3210, 3210, 3210} /* NN,GT,C,E */
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01852 ,{ 3210, 3210, 3180, 3210, 3180} /* NN,GT,C,C */
01853 ,{ 3210, 3210, 3210, 3210, 3210} /* NN,GT,C,G */
01854 ,{ 3210, 3210, 2260, 3210, 2260} /* NN,GT,C,T */
01855 }
01856 ,{{{ 3020, 3020, 3020, 2230, 3020} /* NN,GT,G,E */
01857 ,{ 3020, 3020, 3020, 2230, 3020} /* NN,GT,G,A */
01858 ,{ 3020, 3020, 2980, 2230, 2980} /* NN,GT,G,C */
01859 ,{ 2230, 2230, 2230, 2230, 2230} /* NN,GT,G,G */
01860 ,{ 3020, 3020, 2980, 2230, 2980} /* NN,GT,G,T */
01861 }
01862 ,{{{ 3210, 3210, 3050, 3210, 2280} /* NN,GT,T,E */
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01864 ,{ 3050, 2300, 3050, 2300, 1940} /* NN,GT,T,C */
01865 ,{ 3210, 3210, 2300, 3210, 2280} /* NN,GT,T,G */
01866 ,{ 2280, 2280, 2100, 2280, 2100} /* NN,GT,T,T */
01867 }
01868 }
01869 ,{{{ 3210, 3210, 3210, 3210, 3020} /* NN,TG,E,E */
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01872 ,{ 3210, 3210, 3210, 3210, 2580} /* NN,TG,E,G */
01873 ,{ 3020, 3020, 2850, 2580, 2850} /* NN,TG,E,T */
01874 }
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01876 ,{ 2890, 2890, 2890, 2580, 2890} /* NN,TG,A,A */
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01878 ,{ 2580, 2580, 2580, 2580, 2580} /* NN,TG,A,G */
01879 ,{ 2850, 2850, 2850, 2580, 2850} /* NN,TG,A,T */
01880 }
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01884 ,{ 3210, 3210, 3210, 3210, 2350} /* NN,TG,C,G */
01885 ,{ 2350, 2350, 2190, 2350, 2190} /* NN,TG,C,T */
01886 }
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01889 ,{ 3020, 3020, 2850, 1900, 2850} /* NN,TG,G,C */
01890 ,{ 2500, 2500, 1900, 1900, 1900} /* NN,TG,G,G */
01891 ,{ 3020, 3020, 2850, 1900, 2850} /* NN,TG,G,T */
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01897 ,{ 2350, 2350, 2100, 2350, 2100} /* NN,TG,T,T */
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01903 ,{ 2980, 2980, 2980, 2980, 2980} /* NN,AT,E,G */
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01905 }
01906 ,{{{ 3180, 3180, 2930, 2600, 2930} /* NN,AT,A,E */
01907 ,{ 3180, 3180, 2930, 2600, 2930} /* NN,AT,A,A */
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01909 ,{ 2600, 2600, 2600, 2600, 2600} /* NN,AT,A,G */
01910 ,{ 2930, 2930, 2930, 2600, 2930} /* NN,AT,A,T */
01911 }
01912 ,{{{ 3360, 2980, 3360, 2980, 3050} /* NN,AT,C,E */
01913 ,{ 2980, 2980, 2980, 2980, 2980} /* NN,AT,C,A */
01914 ,{ 3360, 2980, 3360, 2980, 3050} /* NN,AT,C,C */
01915 ,{ 2980, 2980, 2980, 2980, 2980} /* NN,AT,C,G */
01916 ,{ 3050, 2980, 3050, 2980, 3050} /* NN,AT,C,T */
01917 }
01918 ,{{{ 2960, 2960, 2960, 2600, 2960} /* NN,AT,G,E */
01919 ,{ 2960, 2960, 2960, 2600, 2960} /* NN,AT,G,A */
01920 ,{ 2960, 2960, 2930, 2300, 2930} /* NN,AT,G,C */
01921 ,{ 2600, 2600, 2300, 2300, 2300} /* NN,AT,G,G */
01922 ,{ 2960, 2960, 2930, 2300, 2930} /* NN,AT,G,T */
01923 }
01924 ,{{{ 2980, 2980, 2320, 2980, 2870} /* NN,AT,T,E */
01925 ,{ 2980, 2980, 2320, 2980, 2870} /* NN,AT,T,A */
01926 ,{ 2320, 2320, 2320, 2320, 2320} /* NN,AT,T,C */
01927 ,{ 2980, 2980, 2320, 2980, 2870} /* NN,AT,T,G */
01928 ,{ 2870, 2870, 2320, 2870, 2460} /* NN,AT,T,T */
01929 }
01930 }
01931 ,{{{ 3630, 3320, 3630, 3320, 3320} /* NN,TA,E,E */
01932 ,{ 3320, 3320, 3320, 3320, 3180} /* NN,TA,E,A */
01933 ,{ 3630, 3320, 3630, 3320, 3320} /* NN,TA,E,C */
01934 ,{ 3320, 3320, 3320, 3320, 3080} /* NN,TA,E,G */
01935 ,{ 3320, 3180, 3320, 3080, 3320} /* NN,TA,E,T */
01936 }
01937 ,{{{ 3320, 3180, 3320, 3080, 3320} /* NN,TA,A,E */
01938 ,{ 3180, 3180, 3180, 3080, 3180} /* NN,TA,A,A */
01939 ,{ 3320, 3180, 3320, 3080, 3320} /* NN,TA,A,C */
01940 ,{ 3080, 3080, 3080, 3080, 3080} /* NN,TA,A,G */
01941 ,{ 3320, 3180, 3320, 3080, 3320} /* NN,TA,A,T */
01942 }
01943 ,{{{ 3630, 3320, 3630, 3320, 2930} /* NN,TA,C,E */
01944 ,{ 3320, 3320, 3320, 3320, 2930} /* NN,TA,C,A */
01945 ,{ 3630, 3320, 3630, 3320, 2140} /* NN,TA,C,C */
01946 ,{ 3320, 3320, 3320, 3320, 2930} /* NN,TA,C,G */
01947 ,{ 2310, 2310, 2140, 2310, 2140} /* NN,TA,C,T */
01948 }
01949 ,{{{ 3320, 3080, 3320, 3080, 3320} /* NN,TA,G,E */
01950 ,{ 3080, 3080, 3080, 3080, 3080} /* NN,TA,G,A */
01951 ,{ 3320, 3080, 3320, 2730, 3320} /* NN,TA,G,C */
01952 ,{ 3080, 3080, 2730, 2730, 2730} /* NN,TA,G,G */
01953 ,{ 3320, 3080, 3320, 2730, 3320} /* NN,TA,G,T */
01954 }
01955 ,{{{ 3320, 3320, 2930, 3320, 2510} /* NN,TA,T,E */
01956 ,{ 3320, 3320, 2930, 3320, 2510} /* NN,TA,T,A */
01957 ,{ 2930, 2930, 2260, 2930, 2140} /* NN,TA,T,C */
01958 ,{ 3320, 3320, 2930, 3320, 2510} /* NN,TA,T,G */
01959 ,{ 2510, 2510, 2140, 2510, 2510} /* NN,TA,T,T */
01960 }
01961 }
01962 ,{{{ 3630, 3320, 3630, 3320, 3320} /* NN,NN,E,E */
01963 ,{ 3320, 3320, 3320, 3320, 3210} /* NN,NN,E,A */
01964 ,{ 3630, 3320, 3630, 3320, 3320} /* NN,NN,E,C */
01965 ,{ 3320, 3320, 3320, 3320, 3210} /* NN,NN,E,G */
01966 ,{ 3320, 3210, 3320, 3210, 3320} /* NN,NN,E,T */
01967 }
01968 ,{{{ 3320, 3180, 3320, 3080, 3320} /* NN,NN,A,E */
01969 ,{ 3180, 3180, 3180, 3080, 3180} /* NN,NN,A,A */
01970 ,{ 3320, 3180, 3320, 3080, 3320} /* NN,NN,A,C */
01971 ,{ 3080, 3080, 3080, 3080, 3080} /* NN,NN,A,G */
01972 ,{ 3320, 3180, 3320, 3080, 3320} /* NN,NN,A,T */
01973 }

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```

01974 ,{{ 3630, 3320, 3630, 3320, 3210} /* NN,NN,C,E */
01975 ,{ 3320, 3320, 3320, 3320, 3210} /* NN,NN,C,A */
01976 ,{ 3630, 3320, 3630, 3320, 3180} /* NN,NN,C,C */
01977 ,{ 3320, 3320, 3320, 3320, 3210} /* NN,NN,C,G */
01978 ,{ 3210, 3210, 3050, 3210, 3050} /* NN,NN,C,T */
01979 }
01980 ,{{ 3320, 3080, 3320, 3080, 3320} /* NN,NN,G,E */
01981 ,{ 3080, 3080, 3080, 3080, 3080} /* NN,NN,G,A */
01982 ,{ 3320, 3080, 3320, 2730, 3320} /* NN,NN,G,C */
01983 ,{ 3080, 3080, 2730, 2730, 2730} /* NN,NN,G,G */
01984 ,{ 3320, 3080, 3320, 2730, 3320} /* NN,NN,G,T */
01985 }
01986 ,{{ 3320, 3320, 3050, 3320, 2870} /* NN,NN,T,E */
01987 ,{ 3320, 3320, 2930, 3320, 2870} /* NN,NN,T,A */
01988 ,{ 3050, 2930, 3050, 2930, 2320} /* NN,NN,T,C */
01989 ,{ 3320, 3320, 2930, 3320, 2870} /* NN,NN,T,G */
01990 ,{ 2870, 2870, 2320, 2870, 2510} /* NN,NN,T,T */
01991 }
01992 }
01993 };;
01994

```

11.99 intl21dH_RD.h

```

00001 PUBLIC int intl21_dH_RD[NBPAIRS+1][NBPAIRS+1][5][5][5] =
00002 {{{{ INF, INF, INF, INF, INF} /* NP,NP,E,E */
00003 ,{ INF, INF, INF, INF, INF} /* NP,NP,E,A */
00004 ,{ INF, INF, INF, INF, INF} /* NP,NP,E,C */
00005 ,{ INF, INF, INF, INF, INF} /* NP,NP,E,G */
00006 ,{ INF, INF, INF, INF, INF} /* NP,NP,E,U/T */
00007 }
00008 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,E */
00009 ,{ INF, INF, INF, INF, INF} /* NP,NP,A,A */
00010 ,{ INF, INF, INF, INF, INF} /* NP,NP,A,C */
00011 ,{ INF, INF, INF, INF, INF} /* NP,NP,A,G */
00012 ,{ INF, INF, INF, INF, INF} /* NP,NP,A,U/T */
00013 }
00014 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,E */
00015 ,{ INF, INF, INF, INF, INF} /* NP,NP,C,A */
00016 ,{ INF, INF, INF, INF, INF} /* NP,NP,C,C */
00017 ,{ INF, INF, INF, INF, INF} /* NP,NP,C,G */
00018 ,{ INF, INF, INF, INF, INF} /* NP,NP,C,U/T */
00019 }
00020 ,{{ INF, INF, INF, INF, INF} /* NP,NP,G,E */
00021 ,{ INF, INF, INF, INF, INF} /* NP,NP,G,A */
00022 ,{ INF, INF, INF, INF, INF} /* NP,NP,G,C */
00023 ,{ INF, INF, INF, INF, INF} /* NP,NP,G,G */
00024 ,{ INF, INF, INF, INF, INF} /* NP,NP,G,U/T */
00025 }
00026 ,{{ INF, INF, INF, INF, INF} /* NP,NP,U/T,E */
00027 ,{ INF, INF, INF, INF, INF} /* NP,NP,U/T,A */
00028 ,{ INF, INF, INF, INF, INF} /* NP,NP,U/T,C */
00029 ,{ INF, INF, INF, INF, INF} /* NP,NP,U/T,G */
00030 ,{ INF, INF, INF, INF, INF} /* NP,NP,U/T,U/T */
00031 }
00032 }
00033 ,{{{ INF, INF, INF, INF, INF} /* NP,CG,E,E */
00034 ,{ INF, INF, INF, INF, INF} /* NP,CG,E,A */
00035 ,{ INF, INF, INF, INF, INF} /* NP,CG,E,C */
00036 ,{ INF, INF, INF, INF, INF} /* NP,CG,E,G */
00037 ,{ INF, INF, INF, INF, INF} /* NP,CG,E,U/T */
00038 }
00039 ,{{ INF, INF, INF, INF, INF} /* NP,CG,A,E */
00040 ,{ INF, INF, INF, INF, INF} /* NP,CG,A,A */
00041 ,{ INF, INF, INF, INF, INF} /* NP,CG,A,C */
00042 ,{ INF, INF, INF, INF, INF} /* NP,CG,A,G */
00043 ,{ INF, INF, INF, INF, INF} /* NP,CG,A,U/T */
00044 }
00045 ,{{ INF, INF, INF, INF, INF} /* NP,CG,C,E */
00046 ,{ INF, INF, INF, INF, INF} /* NP,CG,C,A */
00047 ,{ INF, INF, INF, INF, INF} /* NP,CG,C,C */
00048 ,{ INF, INF, INF, INF, INF} /* NP,CG,C,G */
00049 ,{ INF, INF, INF, INF, INF} /* NP,CG,C,U/T */
00050 }
00051 ,{{ INF, INF, INF, INF, INF} /* NP,CG,G,E */
00052 ,{ INF, INF, INF, INF, INF} /* NP,CG,G,A */
00053 ,{ INF, INF, INF, INF, INF} /* NP,CG,G,C */
00054 ,{ INF, INF, INF, INF, INF} /* NP,CG,G,G */
00055 ,{ INF, INF, INF, INF, INF} /* NP,CG,G,U/T */
00056 }
00057 ,{{ INF, INF, INF, INF, INF} /* NP,CG,U/T,E */
00058 ,{ INF, INF, INF, INF, INF} /* NP,CG,U/T,A */
00059 ,{ INF, INF, INF, INF, INF} /* NP,CG,U/T,C */
00060 ,{ INF, INF, INF, INF, INF} /* NP,CG,U/T,G */
00061 ,{ INF, INF, INF, INF, INF} /* NP,CG,U/T,U/T */

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00062     }
00063     }
00064     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,E,E */
00065     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,E,A */
00066     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,E,C */
00067     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,E,G */
00068     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,E,U/T */
00069     }
00070     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,A,E */
00071     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,A,A */
00072     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,A,C */
00073     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,A,G */
00074     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,A,U/T */
00075     }
00076     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,C,E */
00077     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,C,A */
00078     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,C,C */
00079     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,C,G */
00080     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,C,U/T */
00081     }
00082     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,G,E */
00083     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,G,A */
00084     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,G,C */
00085     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,G,G */
00086     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,G,U/T */
00087     }
00088     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,U/T,E */
00089     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,U/T,A */
00090     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,U/T,C */
00091     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,U/T,G */
00092     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,U/T,U/T */
00093     }
00094     }
00095     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,E,E */
00096     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,E,A */
00097     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,E,C */
00098     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,E,G */
00099     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,E,U/T */
00100     }
00101     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,A,E */
00102     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,A,A */
00103     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,A,C */
00104     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,A,G */
00105     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,A,U/T */
00106     }
00107     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,C,E */
00108     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,C,A */
00109     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,C,C */
00110     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,C,G */
00111     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,C,U/T */
00112     }
00113     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,G,E */
00114     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,G,A */
00115     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,G,C */
00116     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,G,G */
00117     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,G,U/T */
00118     }
00119     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,U/T,E */
00120     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,U/T,A */
00121     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,U/T,C */
00122     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,U/T,G */
00123     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,GT,U/T,U/T */
00124     }
00125     }
00126     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,E,E */
00127     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,E,A */
00128     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,E,C */
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00130     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,E,U/T */
00131     }
00132     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,A,E */
00133     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,A,A */
00134     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,A,C */
00135     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,A,G */
00136     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,A,U/T */
00137     }
00138     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,C,E */
00139     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,C,A */
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00141     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,C,G */
00142     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,C,U/T */
00143     }
00144     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,G,E */
00145     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,G,A */
00146     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,G,C */
00147     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,G,G */
00148     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,G,U/T */

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00149     }
00150     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,U/T,E */
00151     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,U/T,A */
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00153     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,U/T,G */
00154     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UG,U/T,U/T */
00155     }
00156     }
00157     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,E,E */
00158     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,E,A */
00159     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,E,C */
00160     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,E,G */
00161     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,E,U/T */
00162     }
00163     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,A,E */
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00165     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,A,C */
00166     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,A,G */
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00173     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,C,U/T */
00174     }
00175     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,G,E */
00176     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,G,A */
00177     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,G,C */
00178     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,G,G */
00179     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,G,U/T */
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00182     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,U/T,A */
00183     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,U/T,C */
00184     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,U/T,G */
00185     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,AT,U/T,U/T */
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00187     }
00188     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,E,E */
00189     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,E,A */
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00191     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,E,G */
00192     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,E,U/T */
00193     }
00194     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,A,E */
00195     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,A,A */
00196     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,A,C */
00197     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,A,G */
00198     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,A,U/T */
00199     }
00200     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,C,E */
00201     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,C,A */
00202     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,C,C */
00203     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,C,G */
00204     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,C,U/T */
00205     }
00206     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,G,E */
00207     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,G,A */
00208     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,G,C */
00209     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,G,G */
00210     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,G,U/T */
00211     }
00212     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,U/T,E */
00213     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,U/T,A */
00214     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,U/T,C */
00215     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,U/T,G */
00216     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,UA,U/T,U/T */
00217     }
00218     }
00219     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,E,E */
00220     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,E,A */
00221     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,E,C */
00222     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,E,G */
00223     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,E,U/T */
00224     }
00225     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,A,E */
00226     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,A,A */
00227     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,A,C */
00228     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,A,G */
00229     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,A,U/T */
00230     }
00231     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,E */
00232     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,A */
00233     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,C */
00234     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,G */
00235     ,{{    INF,    INF,    INF,    INF,    INF} /* NP,NN,C,U/T */

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00236     }
00237     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,G,E */
00238     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,G,A */
00239     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,G,C */
00240     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,G,G */
00241     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,G,U/T */
00242     }
00243     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,E */
00244     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,A */
00245     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,C */
00246     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,G */
00247     ,{{   INF,    INF,    INF,    INF,    INF} /* NP,NN,U/T,U/T */
00248     }
00249     }
00250     }
00251     ,{{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,E,E */
00252     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,E,A */
00253     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,E,C */
00254     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,E,G */
00255     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,E,U/T */
00256     }
00257     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,A,E */
00258     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,A,A */
00259     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,A,C */
00260     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,A,G */
00261     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,A,U/T */
00262     }
00263     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,C,E */
00264     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,C,A */
00265     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,C,C */
00266     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,C,G */
00267     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,C,U/T */
00268     }
00269     ,{{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,G,E */
00270     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,G,A */
00271     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,G,C */
00272     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,G,G */
00273     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,G,U/T */
00274     }
00275     ,{{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,E */
00276     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,A */
00277     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,C */
00278     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,G */
00279     ,{{   INF,    INF,    INF,    INF,    INF} /* CG,NP,U/T,U/T */
00280     }
00281     }
00282     ,{{{ 1425,   1425,   1425,   1425,   1425} /* CG,CG,E,E */
00283     ,{{ 1425,   1425,   1425,   1425,   1425} /* CG,CG,E,A */
00284     ,{{ 1425,   1425,   1375,   1425,   1375} /* CG,CG,E,C */
00285     ,{{ 1425,   1425,   1425,   1425,   1425} /* CG,CG,E,G */
00286     ,{{ 1425,   1425,   1375,   1425,   1375} /* CG,CG,E,U/T */
00287     }
00288     ,{{{ 1425,   1425,   1425,   1135,   1425} /* CG,CG,A,E */
00289     ,{{ 1425,   1320,   1320,   1135,   1320} /* CG,CG,A,A */
00290     ,{{ 1425,   1320,   1375,   1135,   1375} /* CG,CG,A,C */
00291     ,{{ 1135,   1135,   1135,   1135,   1135} /* CG,CG,A,G */
00292     ,{{ 1425,   1320,   1375,   1135,   1375} /* CG,CG,A,U/T */
00293     }
00294     ,{{{ 1375,   1375,   1375,   1375,   1200} /* CG,CG,C,E */
00295     ,{{ 1375,   1375,   1375,   1375,   1200} /* CG,CG,C,A */
00296     ,{{ 1375,   1375,   1325,   1375,   1200} /* CG,CG,C,C */
00297     ,{{ 1375,   1375,   1375,   1375,   1200} /* CG,CG,C,G */
00298     ,{{ 1200,   1200,   1200,   1200,   1200} /* CG,CG,C,U/T */
00299     }
00300     ,{{{ 1425,   1135,   1425,   1135,   1425} /* CG,CG,G,E */
00301     ,{{ 1135,   1135,   1135,   1135,   1135} /* CG,CG,G,A */
00302     ,{{ 1425,   1135,   1375,   835,   1375} /* CG,CG,G,C */
00303     ,{{ 1135,   1135,   835,   835,   835} /* CG,CG,G,G */
00304     ,{{ 1425,   1135,   1375,   835,   1375} /* CG,CG,G,U/T */
00305     }
00306     ,{{{ 1375,   1375,   1200,   1375,   475} /* CG,CG,U/T,E */
00307     ,{{ 1375,   1375,   1200,   1375,   475} /* CG,CG,U/T,A */
00308     ,{{ 1200,   1200,   1200,   1200,   475} /* CG,CG,U/T,C */
00309     ,{{ 1375,   1375,   1200,   1375,   475} /* CG,CG,U/T,G */
00310     ,{{ 475,   475,   475,   475,   475} /* CG,CG,U/T,U/T */
00311     }
00312     }
00313     ,{{{ 1800,   1730,   1800,   1585,   1350} /* CG,GC,E,E */
00314     ,{{ 1585,   1585,   1585,   1585,   1350} /* CG,GC,E,A */
00315     ,{{ 1800,   1585,   1710,   1585,   1350} /* CG,GC,E,C */
00316     ,{{ 1585,   1585,   1585,   1585,   1225} /* CG,GC,E,G */
00317     ,{{ 1495,   1495,   1350,   1225,   1350} /* CG,GC,E,U/T */
00318     }
00319     ,{{{ 1350,   1350,   1350,   1135,   1350} /* CG,GC,A,E */
00320     ,{{ 1350,   1045,   1350,   1135,   1350} /* CG,GC,A,A */
00321     ,{{ 1350,   1350,   1050,   895,   1350} /* CG,GC,A,C */
00322     ,{{ 895,   895,   895,   895,   895} /* CG,GC,A,G */

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```
00323 , { 1350, 1350, 1350, 895, 1350} /* CG,GC,A,U/T */
00324 }
00325 , { { 1800, 1730, 1800, 1585, 1215} /* CG,GC,C,E */
00326 , { { 1585, 1490, 1585, 1585, 1215} /* CG,GC,C,A */
00327 , { { 1800, 1585, 1710, 1585, 1215} /* CG,GC,C,C */
00328 , { { 1585, 1585, 1585, 1585, 1215} /* CG,GC,C,G */
00329 , { { 1360, 1360, 1215, 1215, 1215} /* CG,GC,C,U/T */
00330 }
00331 , { { 1350, 1060, 1350, 785, 1350} /* CG,GC,G,E */
00332 , { { 1315, 1060, 1315, 695, 1315} /* CG,GC,G,A */
00333 , { { 1350, 1025, 1350, 785, 1350} /* CG,GC,G,C */
00334 , { { 785, 745, 785, 785, 785} /* CG,GC,G,G */
00335 , { { 1350, 1025, 1350, 785, 1350} /* CG,GC,G,U/T */
00336 }
00337 , { { 1700, 1585, 1340, 1585, 760} /* CG,GC,U/T,E */
00338 , { { 1585, 1585, 1145, 1585, 715} /* CG,GC,U/T,A */
00339 , { { 1260, 1145, 1260, 1145, 680} /* CG,GC,U/T,C */
00340 , { { 1585, 1585, 1145, 1585, 715} /* CG,GC,U/T,G */
00341 , { { 715, 715, 705, 715, 700} /* CG,GC,U/T,U/T */
00342 }
00343 }
00344 , { { { 1835, 1835, 1835, 1835, 1600} /* CG,GT,E,E */
00345 , { { 1835, 1835, 1835, 1835, 1600} /* CG,GT,E,A */
00346 , { { 1835, 1835, 1745, 1835, 1600} /* CG,GT,E,C */
00347 , { { 1835, 1835, 1835, 1835, 1475} /* CG,GT,E,G */
00348 , { { 1600, 1600, 1600, 1475, 1600} /* CG,GT,E,U/T */
00349 }
00350 , { { 1600, 1600, 1600, 1150, 1600} /* CG,GT,A,E */
00351 , { { 1600, 1340, 1600, 1150, 1600} /* CG,GT,A,A */
00352 , { { 1600, 1600, 1600, 1150, 1600} /* CG,GT,A,C */
00353 , { { 1150, 1150, 1150, 1150, 1150} /* CG,GT,A,G */
00354 , { { 1600, 1600, 1600, 1150, 1600} /* CG,GT,A,U/T */
00355 }
00356 , { { 1835, 1835, 1835, 1835, 1465} /* CG,GT,C,E */
00357 , { { 1835, 1835, 1835, 1835, 1465} /* CG,GT,C,A */
00358 , { { 1835, 1835, 1745, 1835, 1465} /* CG,GT,C,C */
00359 , { { 1835, 1835, 1835, 1835, 1465} /* CG,GT,C,G */
00360 , { { 1465, 1465, 1465, 1465, 1465} /* CG,GT,C,U/T */
00361 }
00362 , { { 1600, 1280, 1600, 1040, 1600} /* CG,GT,G,E */
00363 , { { 1565, 1280, 1565, 1040, 1565} /* CG,GT,G,A */
00364 , { { 1600, 1280, 1600, 1040, 1600} /* CG,GT,G,C */
00365 , { { 1040, 1040, 1040, 1040, 1040} /* CG,GT,G,G */
00366 , { { 1600, 1280, 1600, 1040, 1600} /* CG,GT,G,U/T */
00367 }
00368 , { { 1835, 1835, 1475, 1835, 970} /* CG,GT,U/T,E */
00369 , { { 1835, 1835, 1395, 1835, 970} /* CG,GT,U/T,A */
00370 , { { 1395, 1395, 1395, 1395, 890} /* CG,GT,U/T,C */
00371 , { { 1835, 1835, 1395, 1835, 970} /* CG,GT,U/T,G */
00372 , { { 970, 970, 970, 970, 970} /* CG,GT,U/T,U/T */
00373 }
00374 }
00375 , { { { 1675, 1675, 1675, 1675, 1675} /* CG,UG,E,E */
00376 , { { 1675, 1675, 1675, 1675, 1675} /* CG,UG,E,A */
00377 , { { 1675, 1675, 1625, 1675, 1625} /* CG,UG,E,C */
00378 , { { 1675, 1675, 1675, 1675, 1675} /* CG,UG,E,G */
00379 , { { 1675, 1675, 1625, 1675, 1625} /* CG,UG,E,U/T */
00380 }
00381 , { { 1675, 1675, 1675, 1390, 1675} /* CG,UG,A,E */
00382 , { { 1675, 1570, 1570, 1390, 1570} /* CG,UG,A,A */
00383 , { { 1675, 1570, 1625, 1390, 1625} /* CG,UG,A,C */
00384 , { { 1390, 1390, 1390, 1390, 1390} /* CG,UG,A,G */
00385 , { { 1675, 1570, 1625, 1390, 1625} /* CG,UG,A,U/T */
00386 }
00387 , { { 1625, 1625, 1625, 1625, 1450} /* CG,UG,C,E */
00388 , { { 1625, 1625, 1625, 1625, 1450} /* CG,UG,C,A */
00389 , { { 1625, 1625, 1575, 1625, 1450} /* CG,UG,C,C */
00390 , { { 1625, 1625, 1625, 1625, 1450} /* CG,UG,C,G */
00391 , { { 1450, 1450, 1450, 1450, 1450} /* CG,UG,C,U/T */
00392 }
00393 , { { 1675, 1390, 1675, 1390, 1675} /* CG,UG,G,E */
00394 , { { 1390, 1390, 1390, 1390, 1390} /* CG,UG,G,A */
00395 , { { 1675, 1390, 1625, 1090, 1625} /* CG,UG,G,C */
00396 , { { 1390, 1390, 1090, 1090, 1090} /* CG,UG,G,G */
00397 , { { 1675, 1390, 1625, 1090, 1625} /* CG,UG,G,U/T */
00398 }
00399 , { { 1625, 1625, 1450, 1625, 730} /* CG,UG,U/T,E */
00400 , { { 1625, 1625, 1450, 1625, 730} /* CG,UG,U/T,A */
00401 , { { 1450, 1450, 1450, 1450, 730} /* CG,UG,U/T,C */
00402 , { { 1625, 1625, 1450, 1625, 730} /* CG,UG,U/T,G */
00403 , { { 730, 730, 730, 730, 730} /* CG,UG,U/T,U/T */
00404 }
00405 }
00406 , { { { 1635, 1635, 1635, 1565, 1635} /* CG,AT,E,E */
00407 , { { 1635, 1620, 1635, 1565, 1635} /* CG,AT,E,A */
00408 , { { 1635, 1635, 1635, 1565, 1635} /* CG,AT,E,C */
00409 , { { 1565, 1565, 1565, 1565, 1260} /* CG,AT,E,G */
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00410 , { 1635, 1635, 1635, 1260, 1635} /* CG,AT,E,U/T */
00411 }
00412 , { { 1635, 1635, 1635, 975, 1635} /* CG,AT,A,E */
00413 , { { 1635, 1620, 1635, 975, 1635} /* CG,AT,A,A */
00414 , { { 1635, 1635, 1635, 975, 1635} /* CG,AT,A,C */
00415 , { { 975, 975, 975, 975, 975} /* CG,AT,A,G */
00416 , { { 1635, 1635, 1635, 975, 1635} /* CG,AT,A,U/T */
00417 }
00418 , { { 1565, 1565, 1565, 1565, 755} /* CG,AT,C,E */
00419 , { { 1565, 1565, 1565, 1565, 755} /* CG,AT,C,A */
00420 , { { 1565, 1565, 1500, 1565, 755} /* CG,AT,C,C */
00421 , { { 1565, 1565, 1565, 1565, 755} /* CG,AT,C,G */
00422 , { { 755, 755, 755, 755, 755} /* CG,AT,C,U/T */
00423 }
00424 , { { 1635, 770, 1635, 590, 1635} /* CG,AT,G,E */
00425 , { { 1055, 770, 1055, 590, 1055} /* CG,AT,G,A */
00426 , { { 1635, 770, 1635, 590, 1635} /* CG,AT,G,C */
00427 , { { 590, 590, 590, 590, 590} /* CG,AT,G,G */
00428 , { { 1635, 770, 1635, 590, 1635} /* CG,AT,G,U/T */
00429 }
00430 , { { 1565, 1565, 1125, 1565, 490} /* CG,AT,U/T,E */
00431 , { { 1565, 1565, 1125, 1565, 490} /* CG,AT,U/T,A */
00432 , { { 1125, 1125, 1125, 1125, 490} /* CG,AT,U/T,C */
00433 , { { 1565, 1565, 1125, 1565, 490} /* CG,AT,U/T,G */
00434 , { { 490, 490, 490, 490, 490} /* CG,AT,U/T,U/T */
00435 }
00436 }
00437 , { { { 2030, 1935, 2030, 1935, 2030} /* CG,UA,E,E */
00438 , { { 1935, 1870, 1870, 1935, 1870} /* CG,UA,E,A */
00439 , { { 2030, 1870, 2030, 1935, 2030} /* CG,UA,E,C */
00440 , { { 1935, 1935, 1935, 1935, 1935} /* CG,UA,E,G */
00441 , { { 2030, 1870, 2030, 1935, 2030} /* CG,UA,E,U/T */
00442 }
00443 , { { 2030, 1935, 2030, 1650, 2030} /* CG,UA,A,E */
00444 , { { 1935, 1870, 1870, 1650, 1870} /* CG,UA,A,A */
00445 , { { 2030, 1870, 2030, 1650, 2030} /* CG,UA,A,C */
00446 , { { 1650, 1650, 1650, 1650, 1650} /* CG,UA,A,G */
00447 , { { 2030, 1870, 2030, 1650, 2030} /* CG,UA,A,U/T */
00448 }
00449 , { { 1850, 1850, 1850, 1850, 1375} /* CG,UA,C,E */
00450 , { { 1850, 1850, 1850, 1850, 1375} /* CG,UA,C,A */
00451 , { { 1850, 1850, 1665, 1850, 1375} /* CG,UA,C,C */
00452 , { { 1850, 1850, 1850, 1850, 1375} /* CG,UA,C,G */
00453 , { { 1375, 1375, 1375, 1375, 1375} /* CG,UA,C,U/T */
00454 }
00455 , { { 2030, 1430, 2030, 1030, 2030} /* CG,UA,G,E */
00456 , { { 1430, 1430, 1430, 1030, 1430} /* CG,UA,G,A */
00457 , { { 2030, 1430, 2030, 1030, 2030} /* CG,UA,G,C */
00458 , { { 1030, 1030, 1030, 1030, 1030} /* CG,UA,G,G */
00459 , { { 2030, 1430, 2030, 1030, 2030} /* CG,UA,G,U/T */
00460 }
00461 , { { 1850, 1850, 1520, 1850, 900} /* CG,UA,U/T,E */
00462 , { { 1850, 1850, 1520, 1850, 900} /* CG,UA,U/T,A */
00463 , { { 1520, 1520, 1520, 1520, 900} /* CG,UA,U/T,C */
00464 , { { 1850, 1850, 1520, 1850, 900} /* CG,UA,U/T,G */
00465 , { { 900, 900, 900, 900, 900} /* CG,UA,U/T,U/T */
00466 }
00467 }
00468 , { { { 2030, 1935, 2030, 1935, 2030} /* CG,NN,E,E */
00469 , { { 1935, 1870, 1870, 1935, 1870} /* CG,NN,E,A */
00470 , { { 2030, 1870, 2030, 1935, 2030} /* CG,NN,E,C */
00471 , { { 1935, 1935, 1935, 1935, 1935} /* CG,NN,E,G */
00472 , { { 2030, 1870, 2030, 1935, 2030} /* CG,NN,E,U/T */
00473 }
00474 , { { 2030, 1935, 2030, 1650, 2030} /* CG,NN,A,E */
00475 , { { 1935, 1870, 1870, 1650, 1870} /* CG,NN,A,A */
00476 , { { 2030, 1870, 2030, 1650, 2030} /* CG,NN,A,C */
00477 , { { 1650, 1650, 1650, 1650, 1650} /* CG,NN,A,G */
00478 , { { 2030, 1870, 2030, 1650, 2030} /* CG,NN,A,U/T */
00479 }
00480 , { { 1850, 1850, 1850, 1850, 1465} /* CG,NN,C,E */
00481 , { { 1850, 1850, 1850, 1850, 1465} /* CG,NN,C,A */
00482 , { { 1850, 1850, 1745, 1850, 1465} /* CG,NN,C,C */
00483 , { { 1850, 1850, 1850, 1850, 1465} /* CG,NN,C,G */
00484 , { { 1465, 1465, 1465, 1465, 1465} /* CG,NN,C,U/T */
00485 }
00486 , { { 2030, 1430, 2030, 1390, 2030} /* CG,NN,G,E */
00487 , { { 1715, 1430, 1715, 1390, 1715} /* CG,NN,G,A */
00488 , { { 2030, 1430, 2030, 1090, 2030} /* CG,NN,G,C */
00489 , { { 1390, 1390, 1090, 1090, 1090} /* CG,NN,G,G */
00490 , { { 2030, 1430, 2030, 1090, 2030} /* CG,NN,G,U/T */
00491 }
00492 , { { 1850, 1850, 1520, 1850, 970} /* CG,NN,U/T,E */
00493 , { { 1850, 1850, 1520, 1850, 970} /* CG,NN,U/T,A */
00494 , { { 1520, 1520, 1520, 1520, 900} /* CG,NN,U/T,C */
00495 , { { 1850, 1850, 1520, 1850, 970} /* CG,NN,U/T,G */
00496 , { { 970, 970, 970, 970, 970} /* CG,NN,U/T,U/T */

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00497     }
00498     }
00499     }
00500     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,E,E */
00501     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,E,A */
00502     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,E,C */
00503     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,E,G */
00504     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,E,U/T */
00505     }
00506     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,A,E */
00507     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,A,A */
00508     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,A,C */
00509     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,A,G */
00510     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,A,U/T */
00511     }
00512     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,C,E */
00513     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,C,A */
00514     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,C,C */
00515     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,C,G */
00516     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,C,U/T */
00517     }
00518     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,G,E */
00519     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,A */
00520     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,C */
00521     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,G */
00522     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,U/T */
00523     }
00524     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,U/T,E */
00525     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,U/T,A */
00526     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,U/T,C */
00527     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,U/T,G */
00528     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,U/T,U/T */
00529     }
00530     }
00531     ,{{{    1755,    1520,    1585,    1350,    1585} /* GC,CG,E,E */
00532     ,{      1520,    1520,    1350,    1350,    1350} /* GC,CG,E,A */
00533     ,{      1585,    1350,    1585,    1350,    1585} /* GC,CG,E,C */
00534     ,{      1350,    1350,    1350,    1350,    1350} /* GC,CG,E,G */
00535     ,{      1585,    1350,    1585,    1350,    1585} /* GC,CG,E,U/T */
00536     }
00537     ,{{{    1755,    1485,    1585,    1315,    1585} /* GC,CG,A,E */
00538     ,{      1485,    1260,    1090,    1260,    1090} /* GC,CG,A,A */
00539     ,{      1585,    1090,    1585,    1315,    1585} /* GC,CG,A,C */
00540     ,{      1025,    890,    1025,    1025,    1025} /* GC,CG,A,G */
00541     ,{      1585,    1090,    1585,    1315,    1585} /* GC,CG,A,U/T */
00542     }
00543     ,{{{    1495,    1350,    1495,    1350,    1350} /* GC,CG,C,E */
00544     ,{      1350,    1350,    1350,    1350,    1350} /* GC,CG,C,A */
00545     ,{      1495,    1350,    1495,    1350,    1145} /* GC,CG,C,C */
00546     ,{      1350,    1350,    1350,    1350,    1350} /* GC,CG,C,G */
00547     ,{      1350,    1350,    1035,    1350,    1145} /* GC,CG,C,U/T */
00548     }
00549     ,{{{    1585,    895,    1585,    895,    1585} /* GC,CG,G,E */
00550     ,{      895,    895,    895,    895,    895} /* GC,CG,G,A */
00551     ,{      1585,    895,    1585,    785,    1585} /* GC,CG,G,C */
00552     ,{      895,    895,    785,    785,    785} /* GC,CG,G,G */
00553     ,{      1585,    895,    1585,    785,    1585} /* GC,CG,G,U/T */
00554     }
00555     ,{{{    1350,    1350,    1350,    1350,    840} /* GC,CG,U/T,E */
00556     ,{      1350,    1350,    1350,    1350,    840} /* GC,CG,U/T,A */
00557     ,{      1350,    1350,    1215,    1350,    715} /* GC,CG,U/T,C */
00558     ,{      1350,    1350,    1350,    1350,    840} /* GC,CG,U/T,G */
00559     ,{      840,    840,    715,    840,    715} /* GC,CG,U/T,U/T */
00560     }
00561     }
00562     ,{{{    1420,    1315,    1420,    1315,    1315} /* GC,GC,E,E */
00563     ,{      1315,    1315,    1315,    1315,    1315} /* GC,GC,E,A */
00564     ,{      1420,    1315,    1420,    1315,    1315} /* GC,GC,E,C */
00565     ,{      1315,    1315,    1315,    1315,    1315} /* GC,GC,E,G */
00566     ,{      1315,    1315,    1315,    1315,    1315} /* GC,GC,E,U/T */
00567     }
00568     ,{{{    1315,    1250,    1315,    1240,    1315} /* GC,GC,A,E */
00569     ,{      1250,    1250,    1250,    1240,    1250} /* GC,GC,A,A */
00570     ,{      1315,    1250,    1315,    1240,    1315} /* GC,GC,A,C */
00571     ,{      950,    950,    950,    950,    950} /* GC,GC,A,G */
00572     ,{      1315,    1250,    1315,    1240,    1315} /* GC,GC,A,U/T */
00573     }
00574     ,{{{    1420,    1315,    1420,    1315,    1315} /* GC,GC,C,E */
00575     ,{      1315,    1315,    1315,    1315,    1315} /* GC,GC,C,A */
00576     ,{      1420,    1315,    1420,    1315,    1090} /* GC,GC,C,C */
00577     ,{      1315,    1315,    1315,    1315,    1315} /* GC,GC,C,G */
00578     ,{      1315,    1315,    1090,    1315,    1090} /* GC,GC,C,U/T */
00579     }
00580     ,{{{    1315,    950,    1315,    690,    1315} /* GC,GC,G,E */
00581     ,{      1240,    950,    1240,    690,    1240} /* GC,GC,G,A */
00582     ,{      1315,    950,    1315,    690,    1315} /* GC,GC,G,C */
00583     ,{      690,    690,    690,    690,    690} /* GC,GC,G,G */

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00584 , { 1315, 950, 1315, 690, 1315} /* GC,GC,G,U/T */
00585 }
00586 , { { 1315, 1315, 1315, 1315, 805} /* GC,GC,U/T,E */
00587 , { 1315, 1315, 1315, 1315, 805} /* GC,GC,U/T,A */
00588 , { 1315, 1315, 1090, 1315, 580} /* GC,GC,U/T,C */
00589 , { 1315, 1315, 1315, 1315, 805} /* GC,GC,U/T,G */
00590 , { 805, 805, 580, 805, 625} /* GC,GC,U/T,U/T */
00591 }
00592 }
00593 , { { 1670, 1565, 1670, 1565, 1565} /* GC,GT,E,E */
00594 , { 1565, 1565, 1565, 1565, 1565} /* GC,GT,E,A */
00595 , { 1670, 1565, 1670, 1565, 1565} /* GC,GT,E,C */
00596 , { 1565, 1565, 1565, 1565, 1565} /* GC,GT,E,G */
00597 , { 1565, 1565, 1565, 1565, 1565} /* GC,GT,E,U/T */
00598 }
00599 , { { 1565, 1500, 1565, 1490, 1565} /* GC,GT,A,E */
00600 , { 1500, 1500, 1500, 1490, 1500} /* GC,GT,A,A */
00601 , { 1565, 1500, 1565, 1490, 1565} /* GC,GT,A,C */
00602 , { 1205, 1205, 1205, 1205, 1205} /* GC,GT,A,G */
00603 , { 1565, 1500, 1565, 1490, 1565} /* GC,GT,A,U/T */
00604 }
00605 , { { 1670, 1565, 1670, 1565, 1565} /* GC,GT,C,E */
00606 , { 1565, 1565, 1565, 1565, 1565} /* GC,GT,C,A */
00607 , { 1670, 1565, 1670, 1565, 1340} /* GC,GT,C,C */
00608 , { 1565, 1565, 1565, 1565, 1565} /* GC,GT,C,G */
00609 , { 1565, 1565, 1340, 1565, 1340} /* GC,GT,C,U/T */
00610 }
00611 , { { 1565, 1205, 1565, 945, 1565} /* GC,GT,G,E */
00612 , { 1490, 1205, 1490, 945, 1490} /* GC,GT,G,A */
00613 , { 1565, 1205, 1565, 945, 1565} /* GC,GT,G,C */
00614 , { 945, 945, 945, 945, 945} /* GC,GT,G,G */
00615 , { 1565, 1205, 1565, 945, 1565} /* GC,GT,G,U/T */
00616 }
00617 , { { 1565, 1565, 1565, 1565, 1060} /* GC,GT,U/T,E */
00618 , { 1565, 1565, 1565, 1565, 1060} /* GC,GT,U/T,A */
00619 , { 1565, 1565, 1340, 1565, 835} /* GC,GT,U/T,C */
00620 , { 1565, 1565, 1565, 1565, 1060} /* GC,GT,U/T,G */
00621 , { 1060, 1060, 835, 1060, 880} /* GC,GT,U/T,U/T */
00622 }
00623 }
00624 , { { 1835, 1600, 1835, 1600, 1835} /* GC,UG,E,E */
00625 , { 1600, 1600, 1600, 1600, 1600} /* GC,UG,E,A */
00626 , { 1835, 1600, 1835, 1600, 1835} /* GC,UG,E,C */
00627 , { 1600, 1600, 1600, 1600, 1600} /* GC,UG,E,G */
00628 , { 1835, 1600, 1835, 1600, 1835} /* GC,UG,E,U/T */
00629 }
00630 , { { 1835, 1565, 1835, 1565, 1835} /* GC,UG,A,E */
00631 , { 1565, 1260, 1340, 1260, 1340} /* GC,UG,A,A */
00632 , { 1835, 1340, 1835, 1565, 1835} /* GC,UG,A,C */
00633 , { 1280, 890, 1280, 1280, 1280} /* GC,UG,A,G */
00634 , { 1835, 1340, 1835, 1565, 1835} /* GC,UG,A,U/T */
00635 }
00636 , { { 1745, 1600, 1745, 1600, 1600} /* GC,UG,C,E */
00637 , { 1600, 1600, 1600, 1600, 1600} /* GC,UG,C,A */
00638 , { 1745, 1600, 1745, 1600, 1395} /* GC,UG,C,C */
00639 , { 1600, 1600, 1600, 1600, 1600} /* GC,UG,C,G */
00640 , { 1600, 1600, 1035, 1600, 1395} /* GC,UG,C,U/T */
00641 }
00642 , { { 1835, 1150, 1835, 1150, 1835} /* GC,UG,G,E */
00643 , { 1150, 1150, 1150, 1150, 1150} /* GC,UG,G,A */
00644 , { 1835, 1150, 1835, 1040, 1835} /* GC,UG,G,C */
00645 , { 1150, 1150, 1040, 1040, 1040} /* GC,UG,G,G */
00646 , { 1835, 1150, 1835, 1040, 1835} /* GC,UG,G,U/T */
00647 }
00648 , { { 1600, 1600, 1600, 1600, 1095} /* GC,UG,U/T,E */
00649 , { 1600, 1600, 1600, 1600, 1095} /* GC,UG,U/T,A */
00650 , { 1600, 1600, 1465, 1600, 970} /* GC,UG,U/T,C */
00651 , { 1600, 1600, 1600, 1600, 1095} /* GC,UG,U/T,G */
00652 , { 1095, 1095, 970, 1095, 970} /* GC,UG,U/T,U/T */
00653 }
00654 }
00655 , { { 2010, 1915, 2010, 1915, 1950} /* GC,AT,E,E */
00656 , { 1915, 1915, 1915, 1915, 1915} /* GC,AT,E,A */
00657 , { 2010, 1915, 2010, 1915, 1950} /* GC,AT,E,C */
00658 , { 1915, 1915, 1915, 1915, 1915} /* GC,AT,E,G */
00659 , { 1950, 1915, 1950, 1915, 1950} /* GC,AT,E,U/T */
00660 }
00661 , { { 1870, 1870, 1595, 1595, 1595} /* GC,AT,A,E */
00662 , { 1870, 1870, 1575, 1595, 1575} /* GC,AT,A,A */
00663 , { 1595, 1575, 1575, 1595, 1575} /* GC,AT,A,C */
00664 , { 1310, 1310, 1310, 1310, 1310} /* GC,AT,A,G */
00665 , { 1595, 1575, 1575, 1595, 1575} /* GC,AT,A,U/T */
00666 }
00667 , { { 2010, 1915, 2010, 1915, 1950} /* GC,AT,C,E */
00668 , { 1915, 1915, 1915, 1915, 1915} /* GC,AT,C,A */
00669 , { 2010, 1915, 2010, 1915, 1950} /* GC,AT,C,C */
00670 , { 1915, 1915, 1915, 1915, 1915} /* GC,AT,C,G */

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00671 , { 1950, 1915, 1950, 1915, 1950} /* GC,AT,C,U/T */
00672 }
00673 , { { 1815, 1530, 1815, 835, 1815} /* GC,AT,G,E */
00674 , { 1815, 1530, 1815, 835, 1815} /* GC,AT,G,A */
00675 , { 1815, 1530, 1575, 835, 1575} /* GC,AT,G,C */
00676 , { 835, 835, 835, 835, 835} /* GC,AT,G,G */
00677 , { 1815, 1530, 1575, 835, 1575} /* GC,AT,G,U/T */
00678 }
00679 , { { 1915, 1915, 1435, 1915, 930} /* GC,AT,U/T,E */
00680 , { 1915, 1915, 1435, 1915, 890} /* GC,AT,U/T,A */
00681 , { 1435, 1435, 1435, 1435, 930} /* GC,AT,U/T,C */
00682 , { 1915, 1915, 1435, 1915, 890} /* GC,AT,U/T,G */
00683 , { 890, 890, 890, 890, 890} /* GC,AT,U/T,U/T */
00684 }
00685 }
00686 , { { { 2030, 1935, 2030, 1935, 2030} /* GC,UA,E,E */
00687 , { 1715, 1715, 1715, 1715, 1715} /* GC,UA,E,A */
00688 , { 2030, 1715, 2030, 1935, 2030} /* GC,UA,E,C */
00689 , { 1935, 1935, 1935, 1935, 1935} /* GC,UA,E,G */
00690 , { 2030, 1715, 2030, 1935, 2030} /* GC,UA,E,U/T */
00691 }
00692 , { { 2030, 1935, 2030, 1935, 2030} /* GC,UA,A,E */
00693 , { 1300, 1300, 1300, 1300, 1300} /* GC,UA,A,A */
00694 , { 2030, 1300, 2030, 1935, 2030} /* GC,UA,A,C */
00695 , { 1650, 1650, 1650, 1650, 1650} /* GC,UA,A,G */
00696 , { 2030, 1300, 2030, 1935, 2030} /* GC,UA,A,U/T */
00697 }
00698 , { { 2015, 1580, 2015, 1580, 1580} /* GC,UA,C,E */
00699 , { 1580, 1580, 1580, 1580, 1580} /* GC,UA,C,A */
00700 , { 2015, 1580, 2015, 1580, 1350} /* GC,UA,C,C */
00701 , { 1580, 1580, 1580, 1580, 1580} /* GC,UA,C,G */
00702 , { 1580, 1580, 1350, 1580, 1350} /* GC,UA,C,U/T */
00703 }
00704 , { { 2030, 1430, 2030, 1430, 2030} /* GC,UA,G,E */
00705 , { 1430, 1430, 1430, 1430, 1430} /* GC,UA,G,A */
00706 , { 2030, 1430, 2030, 1255, 2030} /* GC,UA,G,C */
00707 , { 1430, 1430, 1255, 1255, 1255} /* GC,UA,G,G */
00708 , { 2030, 1430, 2030, 1255, 2030} /* GC,UA,G,U/T */
00709 }
00710 , { { 1580, 1580, 1580, 1580, 365} /* GC,UA,U/T,E */
00711 , { 1580, 1580, 1580, 1580, 365} /* GC,UA,U/T,A */
00712 , { 1580, 1580, 1555, 1580, 365} /* GC,UA,U/T,C */
00713 , { 1580, 1580, 1580, 1580, 365} /* GC,UA,U/T,G */
00714 , { 365, 365, 365, 365, 365} /* GC,UA,U/T,U/T */
00715 }
00716 }
00717 , { { { 2030, 1935, 2030, 1935, 2030} /* GC,NN,E,E */
00718 , { 1915, 1915, 1915, 1915, 1915} /* GC,NN,E,A */
00719 , { 2030, 1915, 2030, 1935, 2030} /* GC,NN,E,C */
00720 , { 1935, 1935, 1935, 1935, 1935} /* GC,NN,E,G */
00721 , { 2030, 1915, 2030, 1935, 2030} /* GC,NN,E,U/T */
00722 }
00723 , { { 2030, 1935, 2030, 1935, 2030} /* GC,NN,A,E */
00724 , { 1870, 1870, 1575, 1595, 1575} /* GC,NN,A,A */
00725 , { 2030, 1575, 2030, 1935, 2030} /* GC,NN,A,C */
00726 , { 1650, 1650, 1650, 1650, 1650} /* GC,NN,A,G */
00727 , { 2030, 1575, 2030, 1935, 2030} /* GC,NN,A,U/T */
00728 }
00729 , { { 2015, 1915, 2015, 1915, 1950} /* GC,NN,C,E */
00730 , { 1915, 1915, 1915, 1915, 1915} /* GC,NN,C,A */
00731 , { 2015, 1915, 2015, 1915, 1950} /* GC,NN,C,C */
00732 , { 1915, 1915, 1915, 1915, 1915} /* GC,NN,C,G */
00733 , { 1950, 1915, 1950, 1915, 1950} /* GC,NN,C,U/T */
00734 }
00735 , { { 2030, 1530, 2030, 1430, 2030} /* GC,NN,G,E */
00736 , { 1815, 1530, 1815, 1430, 1815} /* GC,NN,G,A */
00737 , { 2030, 1530, 2030, 1255, 2030} /* GC,NN,G,C */
00738 , { 1430, 1430, 1255, 1255, 1255} /* GC,NN,G,G */
00739 , { 2030, 1530, 2030, 1255, 2030} /* GC,NN,G,U/T */
00740 }
00741 , { { 1915, 1915, 1600, 1915, 1095} /* GC,NN,U/T,E */
00742 , { 1915, 1915, 1600, 1915, 1095} /* GC,NN,U/T,A */
00743 , { 1600, 1600, 1555, 1600, 970} /* GC,NN,U/T,C */
00744 , { 1915, 1915, 1600, 1915, 1095} /* GC,NN,U/T,G */
00745 , { 1095, 1095, 970, 1095, 970} /* GC,NN,U/T,U/T */
00746 }
00747 }
00748 }
00749 , { { { { INF, INF, INF, INF, INF} /* GT,NP,E,E */
00750 , { INF, INF, INF, INF, INF} /* GT,NP,E,A */
00751 , { INF, INF, INF, INF, INF} /* GT,NP,E,C */
00752 , { INF, INF, INF, INF, INF} /* GT,NP,E,G */
00753 , { INF, INF, INF, INF, INF} /* GT,NP,E,U/T */
00754 }
00755 , { { INF, INF, INF, INF, INF} /* GT,NP,A,E */
00756 , { INF, INF, INF, INF, INF} /* GT,NP,A,A */
00757 , { INF, INF, INF, INF, INF} /* GT,NP,A,C */

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00758 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,G */
00759 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,U/T */
00760 }
00761 ,{{ INF, INF, INF, INF, INF} /* GT,NP,C,E */
00762 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,A */
00763 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,C */
00764 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,G */
00765 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,U/T */
00766 }
00767 ,{{ INF, INF, INF, INF, INF} /* GT,NP,G,E */
00768 ,{ INF, INF, INF, INF, INF} /* GT,NP,G,A */
00769 ,{ INF, INF, INF, INF, INF} /* GT,NP,G,C */
00770 ,{ INF, INF, INF, INF, INF} /* GT,NP,G,G */
00771 ,{ INF, INF, INF, INF, INF} /* GT,NP,G,U/T */
00772 }
00773 ,{{ INF, INF, INF, INF, INF} /* GT,NP,U/T,E */
00774 ,{ INF, INF, INF, INF, INF} /* GT,NP,U/T,A */
00775 ,{ INF, INF, INF, INF, INF} /* GT,NP,U/T,C */
00776 ,{ INF, INF, INF, INF, INF} /* GT,NP,U/T,G */
00777 ,{ INF, INF, INF, INF, INF} /* GT,NP,U/T,U/T */
00778 }
00779 }
00780 ,{{{ 1835, 1600, 1835, 1600, 1835} /* GT,CG,E,E */
00781 ,{ 1600, 1600, 1600, 1600, 1600} /* GT,CG,E,A */
00782 ,{ 1835, 1600, 1835, 1600, 1835} /* GT,CG,E,C */
00783 ,{ 1600, 1600, 1600, 1600, 1600} /* GT,CG,E,G */
00784 ,{ 1835, 1600, 1835, 1600, 1835} /* GT,CG,E,U/T */
00785 }
00786 ,{{ 1835, 1565, 1835, 1565, 1835} /* GT,CG,A,E */
00787 ,{ 1565, 1260, 1340, 1260, 1340} /* GT,CG,A,A */
00788 ,{ 1835, 1340, 1835, 1565, 1835} /* GT,CG,A,C */
00789 ,{ 1280, 890, 1280, 1280, 1280} /* GT,CG,A,G */
00790 ,{ 1835, 1340, 1835, 1565, 1835} /* GT,CG,A,U/T */
00791 }
00792 ,{{{ 1745, 1600, 1745, 1600, 1600} /* GT,CG,C,E */
00793 ,{ 1600, 1600, 1600, 1600, 1600} /* GT,CG,C,A */
00794 ,{ 1745, 1600, 1745, 1600, 1395} /* GT,CG,C,C */
00795 ,{ 1600, 1600, 1600, 1600, 1600} /* GT,CG,C,G */
00796 ,{ 1600, 1600, 1035, 1600, 1395} /* GT,CG,C,U/T */
00797 }
00798 ,{{{ 1835, 1150, 1835, 1150, 1835} /* GT,CG,G,E */
00799 ,{ 1150, 1150, 1150, 1150, 1150} /* GT,CG,G,A */
00800 ,{ 1835, 1150, 1835, 1040, 1835} /* GT,CG,G,C */
00801 ,{ 1150, 1150, 1040, 1040, 1040} /* GT,CG,G,G */
00802 ,{ 1835, 1150, 1835, 1040, 1835} /* GT,CG,G,U/T */
00803 }
00804 ,{{{ 1600, 1600, 1600, 1600, 1095} /* GT,CG,U/T,E */
00805 ,{ 1600, 1600, 1600, 1600, 1095} /* GT,CG,U/T,A */
00806 ,{ 1600, 1600, 1465, 1600, 970} /* GT,CG,U/T,C */
00807 ,{ 1600, 1600, 1600, 1600, 1095} /* GT,CG,U/T,G */
00808 ,{ 1095, 1095, 970, 1095, 970} /* GT,CG,U/T,U/T */
00809 }
00810 }
00811 ,{{{ 1670, 1565, 1670, 1565, 1565} /* GT,GC,E,E */
00812 ,{ 1565, 1565, 1565, 1565, 1565} /* GT,GC,E,A */
00813 ,{ 1670, 1565, 1670, 1565, 1565} /* GT,GC,E,C */
00814 ,{ 1565, 1565, 1565, 1565, 1565} /* GT,GC,E,G */
00815 ,{ 1565, 1565, 1565, 1565, 1565} /* GT,GC,E,U/T */
00816 }
00817 ,{{{ 1565, 1500, 1565, 1490, 1565} /* GT,GC,A,E */
00818 ,{ 1500, 1500, 1500, 1490, 1500} /* GT,GC,A,A */
00819 ,{ 1565, 1500, 1565, 1490, 1565} /* GT,GC,A,C */
00820 ,{ 1205, 1205, 1205, 1205, 1205} /* GT,GC,A,G */
00821 ,{ 1565, 1500, 1565, 1490, 1565} /* GT,GC,A,U/T */
00822 }
00823 ,{{{ 1670, 1565, 1670, 1565, 1565} /* GT,GC,C,E */
00824 ,{ 1565, 1565, 1565, 1565, 1565} /* GT,GC,C,A */
00825 ,{ 1670, 1565, 1670, 1565, 1340} /* GT,GC,C,C */
00826 ,{ 1565, 1565, 1565, 1565, 1565} /* GT,GC,C,G */
00827 ,{ 1565, 1565, 1340, 1565, 1340} /* GT,GC,C,U/T */
00828 }
00829 ,{{{ 1565, 1205, 1565, 945, 1565} /* GT,GC,G,E */
00830 ,{ 1490, 1205, 1490, 945, 1490} /* GT,GC,G,A */
00831 ,{ 1565, 1205, 1565, 945, 1565} /* GT,GC,G,C */
00832 ,{ 945, 945, 945, 945, 945} /* GT,GC,G,G */
00833 ,{ 1565, 1205, 1565, 945, 1565} /* GT,GC,G,U/T */
00834 }
00835 ,{{{ 1565, 1565, 1565, 1565, 1060} /* GT,GC,U/T,E */
00836 ,{ 1565, 1565, 1565, 1565, 1060} /* GT,GC,U/T,A */
00837 ,{ 1565, 1565, 1340, 1565, 835} /* GT,GC,U/T,C */
00838 ,{ 1565, 1565, 1565, 1565, 1060} /* GT,GC,U/T,G */
00839 ,{ 1060, 1060, 835, 1060, 880} /* GT,GC,U/T,U/T */
00840 }
00841 }
00842 ,{{{ 1920, 1815, 1920, 1815, 1815} /* GT,GT,E,E */
00843 ,{ 1815, 1815, 1815, 1815, 1815} /* GT,GT,E,A */
00844 ,{ 1920, 1815, 1920, 1815, 1815} /* GT,GT,E,C */

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00845 , { 1815, 1815, 1815, 1815, 1815} /* GT,GT,E,G */
00846 , { 1815, 1815, 1815, 1815, 1815} /* GT,GT,E,U/T */
00847 }
00848 , { { 1815, 1750, 1815, 1740, 1815} /* GT,GT,A,E */
00849 , { 1750, 1750, 1750, 1740, 1750} /* GT,GT,A,A */
00850 , { 1815, 1750, 1815, 1740, 1815} /* GT,GT,A,C */
00851 , { 1455, 1455, 1455, 1455, 1455} /* GT,GT,A,G */
00852 , { 1815, 1750, 1815, 1740, 1815} /* GT,GT,A,U/T */
00853 }
00854 , { { 1920, 1815, 1920, 1815, 1815} /* GT,GT,C,E */
00855 , { 1815, 1815, 1815, 1815, 1815} /* GT,GT,C,A */
00856 , { 1920, 1815, 1920, 1815, 1590} /* GT,GT,C,C */
00857 , { 1815, 1815, 1815, 1815, 1815} /* GT,GT,C,G */
00858 , { 1815, 1815, 1590, 1815, 1590} /* GT,GT,C,U/T */
00859 }
00860 , { { 1815, 1455, 1815, 1195, 1815} /* GT,GT,G,E */
00861 , { 1740, 1455, 1740, 1195, 1740} /* GT,GT,G,A */
00862 , { 1815, 1455, 1815, 1195, 1815} /* GT,GT,G,C */
00863 , { 1195, 1195, 1195, 1195, 1195} /* GT,GT,G,G */
00864 , { 1815, 1455, 1815, 1195, 1815} /* GT,GT,G,U/T */
00865 }
00866 , { { 1815, 1815, 1815, 1815, 1310} /* GT,GT,U/T,E */
00867 , { 1815, 1815, 1815, 1815, 1310} /* GT,GT,U/T,A */
00868 , { 1815, 1815, 1590, 1815, 1085} /* GT,GT,U/T,C */
00869 , { 1815, 1815, 1815, 1815, 1310} /* GT,GT,U/T,G */
00870 , { 1310, 1310, 1085, 1310, 1130} /* GT,GT,U/T,U/T */
00871 }
00872 }
00873 , { { { 2085, 1850, 2085, 1850, 2085} /* GT,UG,E,E */
00874 , { 1850, 1850, 1850, 1850, 1850} /* GT,UG,E,A */
00875 , { 2085, 1850, 2085, 1850, 2085} /* GT,UG,E,C */
00876 , { 1850, 1850, 1850, 1850, 1850} /* GT,UG,E,G */
00877 , { 2085, 1850, 2085, 1850, 2085} /* GT,UG,E,U/T */
00878 }
00879 , { { 2085, 1815, 2085, 1815, 2085} /* GT,UG,A,E */
00880 , { 1815, 1260, 1590, 1260, 1590} /* GT,UG,A,A */
00881 , { 2085, 1590, 2085, 1815, 2085} /* GT,UG,A,C */
00882 , { 1530, 890, 1530, 1530, 1530} /* GT,UG,A,G */
00883 , { 2085, 1590, 2085, 1815, 2085} /* GT,UG,A,U/T */
00884 }
00885 , { { 1995, 1850, 1995, 1850, 1850} /* GT,UG,C,E */
00886 , { 1850, 1850, 1850, 1850, 1850} /* GT,UG,C,A */
00887 , { 1995, 1850, 1995, 1850, 1645} /* GT,UG,C,C */
00888 , { 1850, 1850, 1850, 1850, 1850} /* GT,UG,C,G */
00889 , { 1850, 1850, 1035, 1850, 1645} /* GT,UG,C,U/T */
00890 }
00891 , { { 2085, 1400, 2085, 1400, 2085} /* GT,UG,G,E */
00892 , { 1400, 1400, 1400, 1400, 1400} /* GT,UG,G,A */
00893 , { 2085, 1400, 2085, 1290, 2085} /* GT,UG,G,C */
00894 , { 1400, 1400, 1290, 1290, 1290} /* GT,UG,G,G */
00895 , { 2085, 1400, 2085, 1290, 2085} /* GT,UG,G,U/T */
00896 }
00897 , { { 1850, 1850, 1850, 1850, 1345} /* GT,UG,U/T,E */
00898 , { 1850, 1850, 1850, 1850, 1345} /* GT,UG,U/T,A */
00899 , { 1850, 1850, 1715, 1850, 1220} /* GT,UG,U/T,C */
00900 , { 1850, 1850, 1850, 1850, 1345} /* GT,UG,U/T,G */
00901 , { 1345, 1345, 1220, 1345, 1220} /* GT,UG,U/T,U/T */
00902 }
00903 }
00904 , { { { 2260, 2165, 2260, 2165, 2200} /* GT,AT,E,E */
00905 , { 2165, 2165, 2165, 2165, 2165} /* GT,AT,E,A */
00906 , { 2260, 2165, 2260, 2165, 2200} /* GT,AT,E,C */
00907 , { 2165, 2165, 2165, 2165, 2165} /* GT,AT,E,G */
00908 , { 2200, 2165, 2200, 2165, 2200} /* GT,AT,E,U/T */
00909 }
00910 , { { 2120, 2120, 1845, 1845, 1845} /* GT,AT,A,E */
00911 , { 2120, 2120, 1825, 1845, 1825} /* GT,AT,A,A */
00912 , { 1845, 1825, 1825, 1845, 1825} /* GT,AT,A,C */
00913 , { 1560, 1560, 1560, 1560, 1560} /* GT,AT,A,G */
00914 , { 1845, 1825, 1825, 1845, 1825} /* GT,AT,A,U/T */
00915 }
00916 , { { 2260, 2165, 2260, 2165, 2200} /* GT,AT,C,E */
00917 , { 2165, 2165, 2165, 2165, 2165} /* GT,AT,C,A */
00918 , { 2260, 2165, 2260, 2165, 2200} /* GT,AT,C,C */
00919 , { 2165, 2165, 2165, 2165, 2165} /* GT,AT,C,G */
00920 , { 2200, 2165, 2200, 2165, 2200} /* GT,AT,C,U/T */
00921 }
00922 , { { 2065, 1780, 2065, 1085, 2065} /* GT,AT,G,E */
00923 , { 2065, 1780, 2065, 1085, 2065} /* GT,AT,G,A */
00924 , { 2065, 1780, 1825, 1085, 1825} /* GT,AT,G,C */
00925 , { 1085, 1085, 1085, 1085, 1085} /* GT,AT,G,G */
00926 , { 2065, 1780, 1825, 1085, 1825} /* GT,AT,G,U/T */
00927 }
00928 , { { 2165, 2165, 1685, 2165, 1180} /* GT,AT,U/T,E */
00929 , { 2165, 2165, 1685, 2165, 1140} /* GT,AT,U/T,A */
00930 , { 1685, 1685, 1685, 1685, 1180} /* GT,AT,U/T,C */
00931 , { 2165, 2165, 1685, 2165, 1140} /* GT,AT,U/T,G */

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00932 , { 1140, 1140, 1140, 1140, 1140} /* GT,AT,U/T,U/T */
00933 }
00934 }
00935 , {{ 2280, 2185, 2280, 2185, 2280} /* GT,UA,E,E */
00936 , { 1965, 1965, 1965, 1965, 1965} /* GT,UA,E,A */
00937 , { 2280, 1965, 2280, 2185, 2280} /* GT,UA,E,C */
00938 , { 2185, 2185, 2185, 2185, 2185} /* GT,UA,E,G */
00939 , { 2280, 1965, 2280, 2185, 2280} /* GT,UA,E,U/T */
00940 }
00941 , {{ 2280, 2185, 2280, 2185, 2280} /* GT,UA,A,E */
00942 , { 1550, 1550, 1550, 1550, 1550} /* GT,UA,A,A */
00943 , { 2280, 1550, 2280, 2185, 2280} /* GT,UA,A,C */
00944 , { 1900, 1900, 1900, 1900, 1900} /* GT,UA,A,G */
00945 , { 2280, 1550, 2280, 2185, 2280} /* GT,UA,A,U/T */
00946 }
00947 , {{ 2265, 1830, 2265, 1830, 1830} /* GT,UA,C,E */
00948 , { 1830, 1830, 1830, 1830, 1830} /* GT,UA,C,A */
00949 , { 2265, 1830, 2265, 1830, 1600} /* GT,UA,C,C */
00950 , { 1830, 1830, 1830, 1830, 1830} /* GT,UA,C,G */
00951 , { 1830, 1830, 1600, 1830, 1600} /* GT,UA,C,U/T */
00952 }
00953 , {{ 2280, 1680, 2280, 1680, 2280} /* GT,UA,G,E */
00954 , { 1680, 1680, 1680, 1680, 1680} /* GT,UA,G,A */
00955 , { 2280, 1680, 2280, 1505, 2280} /* GT,UA,G,C */
00956 , { 1680, 1680, 1505, 1505, 1505} /* GT,UA,G,G */
00957 , { 2280, 1680, 2280, 1505, 2280} /* GT,UA,G,U/T */
00958 }
00959 , {{ 1830, 1830, 1830, 1830, 615} /* GT,UA,U/T,E */
00960 , { 1830, 1830, 1830, 1830, 615} /* GT,UA,U/T,A */
00961 , { 1830, 1830, 1805, 1830, 615} /* GT,UA,U/T,C */
00962 , { 1830, 1830, 1830, 1830, 615} /* GT,UA,U/T,G */
00963 , { 615, 615, 615, 615, 615} /* GT,UA,U/T,U/T */
00964 }
00965 }
00966 , {{ 2280, 2185, 2280, 2185, 2280} /* GT,NN,E,E */
00967 , { 2165, 2165, 2165, 2165, 2165} /* GT,NN,E,A */
00968 , { 2280, 2165, 2280, 2185, 2280} /* GT,NN,E,C */
00969 , { 2185, 2185, 2185, 2185, 2185} /* GT,NN,E,G */
00970 , { 2280, 2165, 2280, 2185, 2280} /* GT,NN,E,U/T */
00971 }
00972 , {{ 2280, 2185, 2280, 2185, 2280} /* GT,NN,A,E */
00973 , { 2120, 2120, 1825, 1845, 1825} /* GT,NN,A,A */
00974 , { 2280, 1825, 2280, 2185, 2280} /* GT,NN,A,C */
00975 , { 1900, 1900, 1900, 1900, 1900} /* GT,NN,A,G */
00976 , { 2280, 1825, 2280, 2185, 2280} /* GT,NN,A,U/T */
00977 }
00978 , {{ 2265, 2165, 2265, 2165, 2200} /* GT,NN,C,E */
00979 , { 2165, 2165, 2165, 2165, 2165} /* GT,NN,C,A */
00980 , { 2265, 2165, 2265, 2165, 2200} /* GT,NN,C,C */
00981 , { 2165, 2165, 2165, 2165, 2165} /* GT,NN,C,G */
00982 , { 2200, 2165, 2200, 2165, 2200} /* GT,NN,C,U/T */
00983 }
00984 , {{ 2280, 1780, 2280, 1680, 2280} /* GT,NN,G,E */
00985 , { 2065, 1780, 2065, 1680, 2065} /* GT,NN,G,A */
00986 , { 2280, 1780, 2280, 1505, 2280} /* GT,NN,G,C */
00987 , { 1680, 1680, 1505, 1505, 1505} /* GT,NN,G,G */
00988 , { 2280, 1780, 2280, 1505, 2280} /* GT,NN,G,U/T */
00989 }
00990 , {{ 2165, 2165, 1850, 2165, 1345} /* GT,NN,U/T,E */
00991 , { 2165, 2165, 1850, 2165, 1345} /* GT,NN,U/T,A */
00992 , { 1850, 1850, 1805, 1850, 1220} /* GT,NN,U/T,C */
00993 , { 2165, 2165, 1850, 2165, 1345} /* GT,NN,U/T,G */
00994 , { 1345, 1345, 1220, 1345, 1220} /* GT,NN,U/T,U/T */
00995 }
00996 }
00997 }
00998 , {{{ INF, INF, INF, INF, INF} /* UG,NP,E,E */
00999 , { INF, INF, INF, INF, INF} /* UG,NP,E,A */
01000 , { INF, INF, INF, INF, INF} /* UG,NP,E,C */
01001 , { INF, INF, INF, INF, INF} /* UG,NP,E,G */
01002 , { INF, INF, INF, INF, INF} /* UG,NP,E,U/T */
01003 }
01004 , {{ INF, INF, INF, INF, INF} /* UG,NP,A,E */
01005 , { INF, INF, INF, INF, INF} /* UG,NP,A,A */
01006 , { INF, INF, INF, INF, INF} /* UG,NP,A,C */
01007 , { INF, INF, INF, INF, INF} /* UG,NP,A,G */
01008 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T */
01009 }
01010 , {{ INF, INF, INF, INF, INF} /* UG,NP,C,E */
01011 , { INF, INF, INF, INF, INF} /* UG,NP,C,A */
01012 , { INF, INF, INF, INF, INF} /* UG,NP,C,C */
01013 , { INF, INF, INF, INF, INF} /* UG,NP,C,G */
01014 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T */
01015 }
01016 , {{ INF, INF, INF, INF, INF} /* UG,NP,G,E */
01017 , { INF, INF, INF, INF, INF} /* UG,NP,G,A */
01018 , { INF, INF, INF, INF, INF} /* UG,NP,G,C */

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01019 ,{ INF, INF, INF, INF, INF} /* UG,NP,G,G */
01020 ,{ INF, INF, INF, INF, INF} /* UG,NP,G,U/T */
01021 }
01022 ,{{ INF, INF, INF, INF, INF} /* UG,NP,U/T,E */
01023 ,{ INF, INF, INF, INF, INF} /* UG,NP,U/T,A */
01024 ,{ INF, INF, INF, INF, INF} /* UG,NP,U/T,C */
01025 ,{ INF, INF, INF, INF, INF} /* UG,NP,U/T,G */
01026 ,{ INF, INF, INF, INF, INF} /* UG,NP,U/T,U/T */
01027 }
01028 }
01029 ,{{{ 1675, 1675, 1675, 1675, 1675} /* UG,CG,E,E */
01030 ,{ 1675, 1675, 1675, 1675, 1675} /* UG,CG,E,A */
01031 ,{ 1675, 1675, 1625, 1675, 1625} /* UG,CG,E,C */
01032 ,{ 1675, 1675, 1675, 1675, 1675} /* UG,CG,E,G */
01033 ,{ 1675, 1675, 1625, 1675, 1625} /* UG,CG,E,U/T */
01034 }
01035 ,{{{ 1675, 1675, 1675, 1390, 1675} /* UG,CG,A,E */
01036 ,{ 1675, 1570, 1570, 1390, 1570} /* UG,CG,A,A */
01037 ,{ 1675, 1570, 1625, 1390, 1625} /* UG,CG,A,C */
01038 ,{ 1390, 1390, 1390, 1390, 1390} /* UG,CG,A,G */
01039 ,{ 1675, 1570, 1625, 1390, 1625} /* UG,CG,A,U/T */
01040 }
01041 ,{{{ 1625, 1625, 1625, 1625, 1450} /* UG,CG,C,E */
01042 ,{ 1625, 1625, 1625, 1625, 1450} /* UG,CG,C,A */
01043 ,{ 1625, 1625, 1575, 1625, 1450} /* UG,CG,C,C */
01044 ,{ 1625, 1625, 1625, 1625, 1450} /* UG,CG,C,G */
01045 ,{ 1450, 1450, 1450, 1450, 1450} /* UG,CG,C,U/T */
01046 }
01047 ,{{{ 1675, 1390, 1675, 1390, 1675} /* UG,CG,G,E */
01048 ,{ 1390, 1390, 1390, 1390, 1390} /* UG,CG,G,A */
01049 ,{ 1675, 1390, 1625, 1090, 1625} /* UG,CG,G,C */
01050 ,{ 1390, 1390, 1090, 1090, 1090} /* UG,CG,G,G */
01051 ,{ 1675, 1390, 1625, 1090, 1625} /* UG,CG,G,U/T */
01052 }
01053 ,{{{ 1625, 1625, 1450, 1625, 730} /* UG,CG,U/T,E */
01054 ,{ 1625, 1625, 1450, 1625, 730} /* UG,CG,U/T,A */
01055 ,{ 1450, 1450, 1450, 1450, 730} /* UG,CG,U/T,C */
01056 ,{ 1625, 1625, 1450, 1625, 730} /* UG,CG,U/T,G */
01057 ,{ 730, 730, 730, 730, 730} /* UG,CG,U/T,U/T */
01058 }
01059 }
01060 ,{{{ 1835, 1835, 1835, 1835, 1600} /* UG,GC,E,E */
01061 ,{ 1835, 1835, 1835, 1835, 1600} /* UG,GC,E,A */
01062 ,{ 1835, 1835, 1745, 1835, 1600} /* UG,GC,E,C */
01063 ,{ 1835, 1835, 1835, 1835, 1475} /* UG,GC,E,G */
01064 ,{ 1600, 1600, 1600, 1475, 1600} /* UG,GC,E,U/T */
01065 }
01066 ,{{{ 1600, 1600, 1600, 1150, 1600} /* UG,GC,A,E */
01067 ,{ 1600, 1340, 1600, 1150, 1600} /* UG,GC,A,A */
01068 ,{ 1600, 1600, 1600, 1150, 1600} /* UG,GC,A,C */
01069 ,{ 1150, 1150, 1150, 1150, 1150} /* UG,GC,A,G */
01070 ,{ 1600, 1600, 1600, 1150, 1600} /* UG,GC,A,U/T */
01071 }
01072 ,{{{ 1835, 1835, 1835, 1835, 1465} /* UG,GC,C,E */
01073 ,{ 1835, 1835, 1835, 1835, 1465} /* UG,GC,C,A */
01074 ,{ 1835, 1835, 1745, 1835, 1465} /* UG,GC,C,C */
01075 ,{ 1835, 1835, 1835, 1835, 1465} /* UG,GC,C,G */
01076 ,{ 1465, 1465, 1465, 1465, 1465} /* UG,GC,C,U/T */
01077 }
01078 ,{{{ 1600, 1280, 1600, 1040, 1600} /* UG,GC,G,E */
01079 ,{ 1565, 1280, 1565, 1040, 1565} /* UG,GC,G,A */
01080 ,{ 1600, 1280, 1600, 1040, 1600} /* UG,GC,G,C */
01081 ,{ 1040, 1040, 1040, 1040, 1040} /* UG,GC,G,G */
01082 ,{ 1600, 1280, 1600, 1040, 1600} /* UG,GC,G,U/T */
01083 }
01084 ,{{{ 1835, 1835, 1475, 1835, 970} /* UG,GC,U/T,E */
01085 ,{ 1835, 1835, 1395, 1835, 970} /* UG,GC,U/T,A */
01086 ,{ 1395, 1395, 1395, 1395, 890} /* UG,GC,U/T,C */
01087 ,{ 1835, 1835, 1395, 1835, 970} /* UG,GC,U/T,G */
01088 ,{ 970, 970, 970, 970, 970} /* UG,GC,U/T,U/T */
01089 }
01090 }
01091 ,{{{ 2085, 2085, 2085, 2085, 1850} /* UG,GT,E,E */
01092 ,{ 2085, 2085, 2085, 2085, 1850} /* UG,GT,E,A */
01093 ,{ 2085, 2085, 1995, 2085, 1850} /* UG,GT,E,C */
01094 ,{ 2085, 2085, 2085, 2085, 1725} /* UG,GT,E,G */
01095 ,{ 1850, 1850, 1850, 1725, 1850} /* UG,GT,E,U/T */
01096 }
01097 ,{{{ 1850, 1850, 1850, 1400, 1850} /* UG,GT,A,E */
01098 ,{ 1850, 1590, 1850, 1400, 1850} /* UG,GT,A,A */
01099 ,{ 1850, 1850, 1850, 1400, 1850} /* UG,GT,A,C */
01100 ,{ 1400, 1400, 1400, 1400, 1400} /* UG,GT,A,G */
01101 ,{ 1850, 1850, 1850, 1400, 1850} /* UG,GT,A,U/T */
01102 }
01103 ,{{{ 2085, 2085, 2085, 2085, 1715} /* UG,GT,C,E */
01104 ,{ 2085, 2085, 2085, 2085, 1715} /* UG,GT,C,A */
01105 ,{ 2085, 2085, 1995, 2085, 1715} /* UG,GT,C,C */

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01106 , { 2085, 2085, 2085, 2085, 1715} /* UG,GT,C,G */
01107 , { 1715, 1715, 1715, 1715, 1715} /* UG,GT,C,U/T */
01108 }
01109 , { { 1850, 1530, 1850, 1290, 1850} /* UG,GT,G,E */
01110 , { 1815, 1530, 1815, 1290, 1815} /* UG,GT,G,A */
01111 , { 1850, 1530, 1850, 1290, 1850} /* UG,GT,G,C */
01112 , { 1290, 1290, 1290, 1290, 1290} /* UG,GT,G,G */
01113 , { 1850, 1530, 1850, 1290, 1850} /* UG,GT,G,U/T */
01114 }
01115 , { { 2085, 2085, 1725, 2085, 1220} /* UG,GT,U/T,E */
01116 , { 2085, 2085, 1645, 2085, 1220} /* UG,GT,U/T,A */
01117 , { 1645, 1645, 1645, 1645, 1140} /* UG,GT,U/T,C */
01118 , { 2085, 2085, 1645, 2085, 1220} /* UG,GT,U/T,G */
01119 , { 1220, 1220, 1220, 1220, 1220} /* UG,GT,U/T,U/T */
01120 }
01121 }
01122 , { { { 1925, 1925, 1925, 1925, 1925} /* UG,UG,E,E */
01123 , { 1925, 1925, 1925, 1925, 1925} /* UG,UG,E,A */
01124 , { 1925, 1925, 1875, 1925, 1875} /* UG,UG,E,C */
01125 , { 1925, 1925, 1925, 1925, 1925} /* UG,UG,E,G */
01126 , { 1925, 1925, 1875, 1925, 1875} /* UG,UG,E,U/T */
01127 }
01128 , { { 1925, 1925, 1925, 1640, 1925} /* UG,UG,A,E */
01129 , { 1925, 1820, 1820, 1640, 1820} /* UG,UG,A,A */
01130 , { 1925, 1820, 1875, 1640, 1875} /* UG,UG,A,C */
01131 , { 1640, 1640, 1640, 1640, 1640} /* UG,UG,A,G */
01132 , { 1925, 1820, 1875, 1640, 1875} /* UG,UG,A,U/T */
01133 }
01134 , { { 1875, 1875, 1875, 1875, 1700} /* UG,UG,C,E */
01135 , { 1875, 1875, 1875, 1875, 1700} /* UG,UG,C,A */
01136 , { 1875, 1875, 1825, 1875, 1700} /* UG,UG,C,C */
01137 , { 1875, 1875, 1875, 1875, 1700} /* UG,UG,C,G */
01138 , { 1700, 1700, 1700, 1700, 1700} /* UG,UG,C,U/T */
01139 }
01140 , { { 1925, 1640, 1925, 1640, 1925} /* UG,UG,G,E */
01141 , { 1640, 1640, 1640, 1640, 1640} /* UG,UG,G,A */
01142 , { 1925, 1640, 1875, 1340, 1875} /* UG,UG,G,C */
01143 , { 1640, 1640, 1340, 1340, 1340} /* UG,UG,G,G */
01144 , { 1925, 1640, 1875, 1340, 1875} /* UG,UG,G,U/T */
01145 }
01146 , { { 1875, 1875, 1700, 1875, 980} /* UG,UG,U/T,E */
01147 , { 1875, 1875, 1700, 1875, 980} /* UG,UG,U/T,A */
01148 , { 1700, 1700, 1700, 1700, 980} /* UG,UG,U/T,C */
01149 , { 1875, 1875, 1700, 1875, 980} /* UG,UG,U/T,G */
01150 , { 980, 980, 980, 980, 980} /* UG,UG,U/T,U/T */
01151 }
01152 }
01153 , { { { 1885, 1885, 1885, 1815, 1885} /* UG,AT,E,E */
01154 , { 1885, 1870, 1885, 1815, 1885} /* UG,AT,E,A */
01155 , { 1885, 1885, 1885, 1815, 1885} /* UG,AT,E,C */
01156 , { 1815, 1815, 1815, 1815, 1510} /* UG,AT,E,G */
01157 , { 1885, 1885, 1885, 1510, 1885} /* UG,AT,E,U/T */
01158 }
01159 , { { 1885, 1885, 1885, 1225, 1885} /* UG,AT,A,E */
01160 , { 1885, 1870, 1885, 1225, 1885} /* UG,AT,A,A */
01161 , { 1885, 1885, 1885, 1225, 1885} /* UG,AT,A,C */
01162 , { 1225, 1225, 1225, 1225, 1225} /* UG,AT,A,G */
01163 , { 1885, 1885, 1885, 1225, 1885} /* UG,AT,A,U/T */
01164 }
01165 , { { 1815, 1815, 1815, 1815, 1005} /* UG,AT,C,E */
01166 , { 1815, 1815, 1815, 1815, 1005} /* UG,AT,C,A */
01167 , { 1815, 1815, 1750, 1815, 1005} /* UG,AT,C,C */
01168 , { 1815, 1815, 1815, 1815, 1005} /* UG,AT,C,G */
01169 , { 1005, 1005, 1005, 1005, 1005} /* UG,AT,C,U/T */
01170 }
01171 , { { 1885, 1020, 1885, 840, 1885} /* UG,AT,G,E */
01172 , { 1305, 1020, 1305, 840, 1305} /* UG,AT,G,A */
01173 , { 1885, 1020, 1885, 840, 1885} /* UG,AT,G,C */
01174 , { 840, 840, 840, 840, 840} /* UG,AT,G,G */
01175 , { 1885, 1020, 1885, 840, 1885} /* UG,AT,G,U/T */
01176 }
01177 , { { 1815, 1815, 1375, 1815, 740} /* UG,AT,U/T,E */
01178 , { 1815, 1815, 1375, 1815, 740} /* UG,AT,U/T,A */
01179 , { 1375, 1375, 1375, 1375, 740} /* UG,AT,U/T,C */
01180 , { 1815, 1815, 1375, 1815, 740} /* UG,AT,U/T,G */
01181 , { 740, 740, 740, 740, 740} /* UG,AT,U/T,U/T */
01182 }
01183 }
01184 , { { { 2280, 2185, 2280, 2185, 2280} /* UG,UA,E,E */
01185 , { 2185, 2120, 2185, 2120, 2185} /* UG,UA,E,A */
01186 , { 2280, 2120, 2280, 2185, 2280} /* UG,UA,E,C */
01187 , { 2185, 2185, 2185, 2185, 2185} /* UG,UA,E,G */
01188 , { 2280, 2120, 2280, 2185, 2280} /* UG,UA,E,U/T */
01189 }
01190 , { { 2280, 2185, 2280, 1900, 2280} /* UG,UA,A,E */
01191 , { 2185, 2120, 2185, 1900, 2120} /* UG,UA,A,A */
01192 , { 2280, 2120, 2280, 1900, 2280} /* UG,UA,A,C */

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01193 , { 1900, 1900, 1900, 1900, 1900} /* UG,UA,A,G */
01194 , { 2280, 2120, 2280, 1900, 2280} /* UG,UA,A,U/T */
01195 }
01196 , { { 2100, 2100, 2100, 2100, 1625} /* UG,UA,C,E */
01197 , { 2100, 2100, 2100, 2100, 1625} /* UG,UA,C,A */
01198 , { 2100, 2100, 1915, 2100, 1625} /* UG,UA,C,C */
01199 , { 2100, 2100, 2100, 2100, 1625} /* UG,UA,C,G */
01200 , { 1625, 1625, 1625, 1625, 1625} /* UG,UA,C,U/T */
01201 }
01202 , { { 2280, 1680, 2280, 1280, 2280} /* UG,UA,G,E */
01203 , { 1680, 1680, 1680, 1280, 1680} /* UG,UA,G,A */
01204 , { 2280, 1680, 2280, 1280, 2280} /* UG,UA,G,C */
01205 , { 1280, 1280, 1280, 1280, 1280} /* UG,UA,G,G */
01206 , { 2280, 1680, 2280, 1280, 2280} /* UG,UA,G,U/T */
01207 }
01208 , { { 2100, 2100, 1770, 2100, 1150} /* UG,UA,U/T,E */
01209 , { 2100, 2100, 1770, 2100, 1150} /* UG,UA,U/T,A */
01210 , { 1770, 1770, 1770, 1770, 1150} /* UG,UA,U/T,C */
01211 , { 2100, 2100, 1770, 2100, 1150} /* UG,UA,U/T,G */
01212 , { 1150, 1150, 1150, 1150, 1150} /* UG,UA,U/T,U/T */
01213 }
01214 }
01215 , { { { 2280, 2185, 2280, 2185, 2280} /* UG,NN,E,E */
01216 , { { 2185, 2120, 2185, 2120, 2185} /* UG,NN,E,A */
01217 , { 2280, 2120, 2280, 2185, 2280} /* UG,NN,E,C */
01218 , { 2185, 2185, 2185, 2185, 2185} /* UG,NN,E,G */
01219 , { 2280, 2120, 2280, 2185, 2280} /* UG,NN,E,U/T */
01220 }
01221 , { { 2280, 2185, 2280, 1900, 2280} /* UG,NN,A,E */
01222 , { 2185, 2120, 2120, 1900, 2120} /* UG,NN,A,A */
01223 , { 2280, 2120, 2280, 1900, 2280} /* UG,NN,A,C */
01224 , { 1900, 1900, 1900, 1900, 1900} /* UG,NN,A,G */
01225 , { 2280, 2120, 2280, 1900, 2280} /* UG,NN,A,U/T */
01226 }
01227 , { { 2100, 2100, 2100, 2100, 1715} /* UG,NN,C,E */
01228 , { 2100, 2100, 2100, 2100, 1715} /* UG,NN,C,A */
01229 , { 2100, 2100, 1995, 2100, 1715} /* UG,NN,C,C */
01230 , { 2100, 2100, 2100, 2100, 1715} /* UG,NN,C,G */
01231 , { 1715, 1715, 1715, 1715, 1715} /* UG,NN,C,U/T */
01232 }
01233 , { { 2280, 1680, 2280, 1640, 2280} /* UG,NN,G,E */
01234 , { 1965, 1680, 1965, 1640, 1965} /* UG,NN,G,A */
01235 , { 2280, 1680, 2280, 1340, 2280} /* UG,NN,G,C */
01236 , { 1640, 1640, 1340, 1340, 1340} /* UG,NN,G,G */
01237 , { 2280, 1680, 2280, 1340, 2280} /* UG,NN,G,U/T */
01238 }
01239 , { { 2100, 2100, 1770, 2100, 1220} /* UG,NN,U/T,E */
01240 , { 2100, 2100, 1770, 2100, 1220} /* UG,NN,U/T,A */
01241 , { 1770, 1770, 1770, 1770, 1150} /* UG,NN,U/T,C */
01242 , { 2100, 2100, 1770, 2100, 1220} /* UG,NN,U/T,G */
01243 , { 1220, 1220, 1220, 1220, 1220} /* UG,NN,U/T,U/T */
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01245 }
01246 }
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01249 , { INF, INF, INF, INF, INF} /* AT,NP,E,C */
01250 , { INF, INF, INF, INF, INF} /* AT,NP,E,G */
01251 , { INF, INF, INF, INF, INF} /* AT,NP,E,U/T */
01252 }
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01254 , { INF, INF, INF, INF, INF} /* AT,NP,A,A */
01255 , { INF, INF, INF, INF, INF} /* AT,NP,A,C */
01256 , { INF, INF, INF, INF, INF} /* AT,NP,A,G */
01257 , { INF, INF, INF, INF, INF} /* AT,NP,A,U/T */
01258 }
01259 , { { INF, INF, INF, INF, INF} /* AT,NP,C,E */
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01261 , { INF, INF, INF, INF, INF} /* AT,NP,C,C */
01262 , { INF, INF, INF, INF, INF} /* AT,NP,C,G */
01263 , { INF, INF, INF, INF, INF} /* AT,NP,C,U/T */
01264 }
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01266 , { INF, INF, INF, INF, INF} /* AT,NP,G,A */
01267 , { INF, INF, INF, INF, INF} /* AT,NP,G,C */
01268 , { INF, INF, INF, INF, INF} /* AT,NP,G,G */
01269 , { INF, INF, INF, INF, INF} /* AT,NP,G,U/T */
01270 }
01271 , { { INF, INF, INF, INF, INF} /* AT,NP,U/T,E */
01272 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,A */
01273 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,C */
01274 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,G */
01275 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,U/T */
01276 }
01277 }
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01279 , { 1635, 1635, 1635, 1635, 1620} /* AT,CG,E,A */
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01283 }
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01285 , { 1620, 1620, 1620, 1055, 1620} /* AT,CG,A,A */
01286 , { 1565, 1565, 1565, 1055, 1565} /* AT,CG,A,C */
01287 , { 770, 770, 770, 770, 770} /* AT,CG,A,G */
01288 , { 1565, 1565, 1565, 1055, 1565} /* AT,CG,A,U/T */
01289 }
01290 , { { 1635, 1635, 1635, 1635, 1125} /* AT,CG,C,E */
01291 , { 1635, 1635, 1635, 1635, 1125} /* AT,CG,C,A */
01292 , { 1635, 1635, 1500, 1635, 1125} /* AT,CG,C,C */
01293 , { 1635, 1635, 1635, 1635, 1125} /* AT,CG,C,G */
01294 , { 1125, 1125, 1125, 1125, 1125} /* AT,CG,C,U/T */
01295 }
01296 , { { 1565, 975, 1565, 975, 1565} /* AT,CG,G,E */
01297 , { 975, 975, 975, 975, 975} /* AT,CG,G,A */
01298 , { 1565, 975, 1565, 590, 1565} /* AT,CG,G,C */
01299 , { 975, 975, 590, 590, 590} /* AT,CG,G,G */
01300 , { 1565, 975, 1565, 590, 1565} /* AT,CG,G,U/T */
01301 }
01302 , { { 1635, 1635, 755, 1635, 490} /* AT,CG,U/T,E */
01303 , { 1635, 1635, 755, 1635, 490} /* AT,CG,U/T,A */
01304 , { 755, 755, 755, 755, 250} /* AT,CG,U/T,C */
01305 , { 1635, 1635, 755, 1635, 490} /* AT,CG,U/T,G */
01306 , { 490, 490, 250, 490, 490} /* AT,CG,U/T,U/T */
01307 }
01308 }
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01311 , { 2010, 1915, 2010, 1815, 1915} /* AT,GC,E,C */
01312 , { 1815, 1815, 1815, 1815, 1815} /* AT,GC,E,G */
01313 , { 1915, 1915, 1915, 1815, 1915} /* AT,GC,E,U/T */
01314 }
01315 , { { 1915, 1915, 1915, 1815, 1915} /* AT,GC,A,E */
01316 , { 1915, 1870, 1915, 1815, 1915} /* AT,GC,A,A */
01317 , { 1915, 1915, 1915, 1815, 1915} /* AT,GC,A,C */
01318 , { 1530, 1530, 1530, 1530, 1530} /* AT,GC,A,G */
01319 , { 1915, 1915, 1915, 1815, 1915} /* AT,GC,A,U/T */
01320 }
01321 , { { 2010, 1575, 2010, 1575, 1435} /* AT,GC,C,E */
01322 , { 1575, 1575, 1575, 1575, 1435} /* AT,GC,C,A */
01323 , { 2010, 1575, 2010, 1575, 1435} /* AT,GC,C,C */
01324 , { 1575, 1575, 1575, 1575, 1435} /* AT,GC,C,G */
01325 , { 1435, 1435, 1435, 1435, 1435} /* AT,GC,C,U/T */
01326 }
01327 , { { 1915, 1310, 1915, 835, 1915} /* AT,GC,G,E */
01328 , { 1595, 1310, 1595, 835, 1595} /* AT,GC,G,A */
01329 , { 1915, 1310, 1915, 835, 1915} /* AT,GC,G,C */
01330 , { 835, 835, 835, 835, 835} /* AT,GC,G,G */
01331 , { 1915, 1310, 1915, 835, 1915} /* AT,GC,G,U/T */
01332 }
01333 , { { 1950, 1575, 1950, 1575, 890} /* AT,GC,U/T,E */
01334 , { 1575, 1575, 1575, 1575, 890} /* AT,GC,U/T,A */
01335 , { 1950, 1575, 1950, 1575, 890} /* AT,GC,U/T,C */
01336 , { 1575, 1575, 1575, 1575, 890} /* AT,GC,U/T,G */
01337 , { 890, 890, 890, 890, 890} /* AT,GC,U/T,U/T */
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01339 }
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01342 , { 2260, 2165, 2260, 2065, 2165} /* AT,GT,E,C */
01343 , { 2065, 2065, 2065, 2065, 2065} /* AT,GT,E,G */
01344 , { 2165, 2165, 2165, 2065, 2165} /* AT,GT,E,U/T */
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01346 , { { 2165, 2165, 2165, 2065, 2165} /* AT,GT,A,E */
01347 , { 2165, 2120, 2165, 2065, 2165} /* AT,GT,A,A */
01348 , { 2165, 2165, 2165, 2065, 2165} /* AT,GT,A,C */
01349 , { 1780, 1780, 1780, 1780, 1780} /* AT,GT,A,G */
01350 , { 2165, 2165, 2165, 2065, 2165} /* AT,GT,A,U/T */
01351 }
01352 , { { 2260, 1825, 2260, 1825, 1685} /* AT,GT,C,E */
01353 , { 1825, 1825, 1825, 1825, 1685} /* AT,GT,C,A */
01354 , { 2260, 1825, 2260, 1825, 1685} /* AT,GT,C,C */
01355 , { 1825, 1825, 1825, 1825, 1685} /* AT,GT,C,G */
01356 , { 1685, 1685, 1685, 1685, 1685} /* AT,GT,C,U/T */
01357 }
01358 , { { 2165, 1560, 2165, 1085, 2165} /* AT,GT,G,E */
01359 , { 1845, 1560, 1845, 1085, 1845} /* AT,GT,G,A */
01360 , { 2165, 1560, 2165, 1085, 2165} /* AT,GT,G,C */
01361 , { 1085, 1085, 1085, 1085, 1085} /* AT,GT,G,G */
01362 , { 2165, 1560, 2165, 1085, 2165} /* AT,GT,G,U/T */
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01364 , { { 2200, 1825, 2200, 1825, 1140} /* AT,GT,U/T,E */
01365 , { 1825, 1825, 1825, 1825, 1140} /* AT,GT,U/T,A */
01366 , { 2200, 1825, 2200, 1825, 1140} /* AT,GT,U/T,C */

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01371 , { { 1885, 1885, 1885, 1885, 1870} /* AT,UG,E,E */
01372 , { 1885, 1885, 1885, 1885, 1870} /* AT,UG,E,A */
01373 , { 1885, 1885, 1815, 1885, 1815} /* AT,UG,E,C */
01374 , { 1885, 1885, 1885, 1885, 1375} /* AT,UG,E,G */
01375 , { 1815, 1815, 1815, 1375, 1815} /* AT,UG,E,U/T */
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01378 , { 1870, 1870, 1870, 1305, 1870} /* AT,UG,A,A */
01379 , { 1815, 1815, 1815, 1305, 1815} /* AT,UG,A,C */
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01383 , { { 1885, 1885, 1885, 1885, 1375} /* AT,UG,C,E */
01384 , { 1885, 1885, 1885, 1885, 1375} /* AT,UG,C,A */
01385 , { 1885, 1885, 1750, 1885, 1375} /* AT,UG,C,C */
01386 , { 1885, 1885, 1885, 1885, 1375} /* AT,UG,C,G */
01387 , { 1375, 1375, 1375, 1375, 1375} /* AT,UG,C,U/T */
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01392 , { 1225, 1225, 840, 840, 840} /* AT,UG,G,G */
01393 , { 1815, 1225, 1815, 840, 1815} /* AT,UG,G,U/T */
01394 }
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01397 , { 1005, 1005, 1005, 1005, 500} /* AT,UG,U/T,C */
01398 , { 1885, 1885, 1005, 1885, 740} /* AT,UG,U/T,G */
01399 , { 740, 740, 500, 740, 740} /* AT,UG,U/T,U/T */
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01401 }
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01405 , { 2110, 2110, 2110, 2110, 2110} /* AT,AT,E,G */
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01409 , { 2110, 1865, 2110, 1975, 1865} /* AT,AT,A,A */
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01412 , { 2110, 2110, 2110, 1975, 2110} /* AT,AT,A,U/T */
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01417 , { 2110, 2110, 2110, 1835, 1835} /* AT,AT,C,G */
01418 , { 1835, 1835, 1835, 1835, 1835} /* AT,AT,C,U/T */
01419 }
01420 , { { 2110, 1690, 2110, 1690, 2110} /* AT,AT,G,E */
01421 , { 1975, 1690, 1975, 1690, 1975} /* AT,AT,G,A */
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01423 , { 1690, 1690, 1540, 1540, 1540} /* AT,AT,G,G */
01424 , { 2110, 1690, 2110, 1540, 2110} /* AT,AT,G,U/T */
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01427 , { 2110, 2110, 1835, 2110, 1605} /* AT,AT,U/T,A */
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01429 , { 2110, 2110, 1835, 2110, 1605} /* AT,AT,U/T,G */
01430 , { 1605, 1605, 1330, 1605, 1400} /* AT,AT,U/T,U/T */
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01436 , { 2155, 2155, 2155, 2155, 2155} /* AT,UA,E,G */
01437 , { 2265, 2265, 1695, 2155, 1695} /* AT,UA,E,U/T */
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01459 , { 2140, 2140, 1795, 2140, 875} /* AT,UA,U/T,C */
01460 , { 2140, 2140, 2140, 2140, 875} /* AT,UA,U/T,G */
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01466 , { 2355, 2265, 2355, 2155, 2165} /* AT,NN,E,C */
01467 , { 2155, 2155, 2155, 2155, 2155} /* AT,NN,E,G */
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01470 , {{{ 2265, 2265, 2265, 2155, 2265} /* AT,NN,A,E */
01471 , { 2265, 2265, 2265, 2155, 2265} /* AT,NN,A,A */
01472 , { 2265, 2265, 2165, 2155, 2165} /* AT,NN,A,C */
01473 , { 1870, 1870, 1870, 1870, 1870} /* AT,NN,A,G */
01474 , { 2265, 2265, 2165, 2155, 2165} /* AT,NN,A,U/T */
01475 }
01476 , {{{ 2355, 2140, 2355, 2140, 2140} /* AT,NN,C,E */
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01478 , { 2355, 2140, 2355, 2140, 1835} /* AT,NN,C,C */
01479 , { 2140, 2140, 2140, 2140, 2140} /* AT,NN,C,G */
01480 , { 1835, 1835, 1835, 1835, 1835} /* AT,NN,C,U/T */
01481 }
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01483 , { 1975, 1690, 1975, 1690, 1975} /* AT,NN,G,A */
01484 , { 2165, 1690, 2165, 1540, 2165} /* AT,NN,G,C */
01485 , { 1690, 1690, 1540, 1540, 1540} /* AT,NN,G,G */
01486 , { 2165, 1690, 2165, 1540, 2165} /* AT,NN,G,U/T */
01487 }
01488 , {{{ 2200, 2140, 2200, 2140, 1605} /* AT,NN,U/T,E */
01489 , { 2140, 2140, 2140, 2140, 1605} /* AT,NN,U/T,A */
01490 , { 2200, 2140, 2200, 2140, 1330} /* AT,NN,U/T,C */
01491 , { 2140, 2140, 2140, 2140, 1605} /* AT,NN,U/T,G */
01492 , { 1605, 1605, 1330, 1605, 1400} /* AT,NN,U/T,U/T */
01493 }
01494 }
01495 }
01496 , {{{ INF, INF, INF, INF, INF} /* UA,NP,E,E */
01497 , { INF, INF, INF, INF, INF} /* UA,NP,E,A */
01498 , { INF, INF, INF, INF, INF} /* UA,NP,E,C */
01499 , { INF, INF, INF, INF, INF} /* UA,NP,E,G */
01500 , { INF, INF, INF, INF, INF} /* UA,NP,E,U/T */
01501 }
01502 , {{{ INF, INF, INF, INF, INF} /* UA,NP,A,E */
01503 , { INF, INF, INF, INF, INF} /* UA,NP,A,A */
01504 , { INF, INF, INF, INF, INF} /* UA,NP,A,C */
01505 , { INF, INF, INF, INF, INF} /* UA,NP,A,G */
01506 , { INF, INF, INF, INF, INF} /* UA,NP,A,U/T */
01507 }
01508 , {{{ INF, INF, INF, INF, INF} /* UA,NP,C,E */
01509 , { INF, INF, INF, INF, INF} /* UA,NP,C,A */
01510 , { INF, INF, INF, INF, INF} /* UA,NP,C,C */
01511 , { INF, INF, INF, INF, INF} /* UA,NP,C,G */
01512 , { INF, INF, INF, INF, INF} /* UA,NP,C,U/T */
01513 }
01514 , {{{ INF, INF, INF, INF, INF} /* UA,NP,G,E */
01515 , { INF, INF, INF, INF, INF} /* UA,NP,G,A */
01516 , { INF, INF, INF, INF, INF} /* UA,NP,G,C */
01517 , { INF, INF, INF, INF, INF} /* UA,NP,G,G */
01518 , { INF, INF, INF, INF, INF} /* UA,NP,G,U/T */
01519 }
01520 , {{{ INF, INF, INF, INF, INF} /* UA,NP,U/T,E */
01521 , { INF, INF, INF, INF, INF} /* UA,NP,U/T,A */
01522 , { INF, INF, INF, INF, INF} /* UA,NP,U/T,C */
01523 , { INF, INF, INF, INF, INF} /* UA,NP,U/T,G */
01524 , { INF, INF, INF, INF, INF} /* UA,NP,U/T,U/T */
01525 }
01526 }
01527 , {{{ 2030, 2030, 2030, 2030, 1935} /* UA,CG,E,E */
01528 , { 2030, 2030, 2030, 2030, 1935} /* UA,CG,E,A */
01529 , { 2030, 2030, 1850, 2030, 1850} /* UA,CG,E,C */
01530 , { 2030, 2030, 2030, 2030, 1715} /* UA,CG,E,G */
01531 , { 1935, 1935, 1850, 1715, 1850} /* UA,CG,E,U/T */
01532 }
01533 , {{{ 1870, 1870, 1870, 1430, 1870} /* UA,CG,A,E */
01534 , { 1870, 1870, 1870, 1430, 1870} /* UA,CG,A,A */
01535 , { 1850, 1850, 1850, 1430, 1850} /* UA,CG,A,C */
01536 , { 1430, 1430, 1430, 1430, 1430} /* UA,CG,A,G */
01537 , { 1850, 1850, 1850, 1430, 1850} /* UA,CG,A,U/T */
01538 }
01539 , {{{ 2030, 2030, 2030, 2030, 1520} /* UA,CG,C,E */
01540 , { 2030, 2030, 2030, 2030, 1520} /* UA,CG,C,A */

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01541 , { 2030, 2030, 1665, 2030, 1520} /* UA,CG,C,C */
01542 , { 2030, 2030, 2030, 2030, 1520} /* UA,CG,C,G */
01543 , { 1520, 1520, 1520, 1520, 1520} /* UA,CG,C,U/T */
01544 }
01545 , { { 1935, 1650, 1935, 1030, 1935} /* UA,CG,G,E */
01546 , { 1650, 1650, 1650, 1030, 1650} /* UA,CG,G,A */
01547 , { 1935, 1650, 1850, 1030, 1850} /* UA,CG,G,C */
01548 , { 1030, 1030, 1030, 1030, 1030} /* UA,CG,G,G */
01549 , { 1935, 1650, 1850, 1030, 1850} /* UA,CG,G,U/T */
01550 }
01551 , { { 2030, 2030, 1405, 2030, 900} /* UA,CG,U/T,E */
01552 , { 2030, 2030, 1375, 2030, 900} /* UA,CG,U/T,A */
01553 , { 1405, 1375, 1375, 1375, 900} /* UA,CG,U/T,C */
01554 , { 2030, 2030, 1375, 2030, 900} /* UA,CG,U/T,G */
01555 , { 900, 900, 900, 900, 900} /* UA,CG,U/T,U/T */
01556 }
01557 }
01558 , { { { 2030, 2030, 2030, 2030, 2030} /* UA,GC,E,E */
01559 , { 2030, 2030, 2030, 2030, 2030} /* UA,GC,E,A */
01560 , { 2030, 2030, 2015, 2030, 2015} /* UA,GC,E,C */
01561 , { 2030, 2030, 2030, 2030, 2030} /* UA,GC,E,G */
01562 , { 2030, 2030, 1580, 2030, 1580} /* UA,GC,E,U/T */
01563 }
01564 , { { 1715, 1715, 1715, 1430, 1715} /* UA,GC,A,E */
01565 , { 1715, 1300, 1300, 1430, 1300} /* UA,GC,A,A */
01566 , { 1715, 1300, 1580, 1430, 1580} /* UA,GC,A,C */
01567 , { 1430, 1430, 1430, 1430, 1430} /* UA,GC,A,G */
01568 , { 1715, 1300, 1580, 1430, 1580} /* UA,GC,A,U/T */
01569 }
01570 , { { 2030, 2030, 2030, 2030, 2030} /* UA,GC,C,E */
01571 , { 2030, 2030, 2030, 2030, 2030} /* UA,GC,C,A */
01572 , { 2030, 2030, 2015, 2030, 2015} /* UA,GC,C,C */
01573 , { 2030, 2030, 2030, 2030, 2030} /* UA,GC,C,G */
01574 , { 2030, 2030, 1555, 2030, 1555} /* UA,GC,C,U/T */
01575 }
01576 , { { 1935, 1650, 1935, 1255, 1935} /* UA,GC,G,E */
01577 , { 1935, 1650, 1935, 1255, 1935} /* UA,GC,G,A */
01578 , { 1935, 1650, 1580, 1255, 1580} /* UA,GC,G,C */
01579 , { 1255, 1255, 1255, 1255, 1255} /* UA,GC,G,G */
01580 , { 1935, 1650, 1580, 1255, 1580} /* UA,GC,G,U/T */
01581 }
01582 , { { 2030, 2030, 1350, 2030, 365} /* UA,GC,U/T,E */
01583 , { 2030, 2030, 1350, 2030, 365} /* UA,GC,U/T,A */
01584 , { 1350, 1350, 1350, 1350, 365} /* UA,GC,U/T,C */
01585 , { 2030, 2030, 1350, 2030, 365} /* UA,GC,U/T,G */
01586 , { 365, 365, 365, 365, 365} /* UA,GC,U/T,U/T */
01587 }
01588 }
01589 , { { { 2280, 2280, 2280, 2280, 2280} /* UA,GT,E,E */
01590 , { 2280, 2280, 2280, 2280, 2280} /* UA,GT,E,A */
01591 , { 2280, 2280, 2265, 2280, 2265} /* UA,GT,E,C */
01592 , { 2280, 2280, 2280, 2280, 2280} /* UA,GT,E,G */
01593 , { 2280, 2280, 1830, 2280, 1830} /* UA,GT,E,U/T */
01594 }
01595 , { { 1965, 1965, 1965, 1680, 1965} /* UA,GT,A,E */
01596 , { 1965, 1550, 1550, 1680, 1550} /* UA,GT,A,A */
01597 , { 1965, 1550, 1830, 1680, 1830} /* UA,GT,A,C */
01598 , { 1680, 1680, 1680, 1680, 1680} /* UA,GT,A,G */
01599 , { 1965, 1550, 1830, 1680, 1830} /* UA,GT,A,U/T */
01600 }
01601 , { { 2280, 2280, 2280, 2280, 2280} /* UA,GT,C,E */
01602 , { 2280, 2280, 2280, 2280, 2280} /* UA,GT,C,A */
01603 , { 2280, 2280, 2265, 2280, 2265} /* UA,GT,C,C */
01604 , { 2280, 2280, 2280, 2280, 2280} /* UA,GT,C,G */
01605 , { 2280, 2280, 1805, 2280, 1805} /* UA,GT,C,U/T */
01606 }
01607 , { { 2185, 1900, 2185, 1505, 2185} /* UA,GT,G,E */
01608 , { 2185, 1900, 2185, 1505, 2185} /* UA,GT,G,A */
01609 , { 2185, 1900, 1830, 1505, 1830} /* UA,GT,G,C */
01610 , { 1505, 1505, 1505, 1505, 1505} /* UA,GT,G,G */
01611 , { 2185, 1900, 1830, 1505, 1830} /* UA,GT,G,U/T */
01612 }
01613 , { { 2280, 2280, 1600, 2280, 615} /* UA,GT,U/T,E */
01614 , { 2280, 2280, 1600, 2280, 615} /* UA,GT,U/T,A */
01615 , { 1600, 1600, 1600, 1600, 615} /* UA,GT,U/T,C */
01616 , { 2280, 2280, 1600, 2280, 615} /* UA,GT,U/T,G */
01617 , { 615, 615, 615, 615, 615} /* UA,GT,U/T,U/T */
01618 }
01619 }
01620 , { { { 2280, 2280, 2280, 2280, 2185} /* UA,UG,E,E */
01621 , { 2280, 2280, 2280, 2280, 2185} /* UA,UG,E,A */
01622 , { 2280, 2280, 2100, 2280, 2100} /* UA,UG,E,C */
01623 , { 2280, 2280, 2280, 2280, 1965} /* UA,UG,E,G */
01624 , { 2185, 2185, 2100, 1965, 2100} /* UA,UG,E,U/T */
01625 }
01626 , { { 2120, 2120, 2120, 1680, 2120} /* UA,UG,A,E */
01627 , { 2120, 2120, 2120, 1680, 2120} /* UA,UG,A,A */
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01628 , { 2100, 2100, 2100, 1680, 2100} /* UA,UG,A,C */
01629 , { 1680, 1680, 1680, 1680, 1680} /* UA,UG,A,G */
01630 , { 2100, 2100, 2100, 1680, 2100} /* UA,UG,A,U/T */
01631 }
01632 , { { 2280, 2280, 2280, 2280, 1770} /* UA,UG,C,E */
01633 , { 2280, 2280, 2280, 2280, 1770} /* UA,UG,C,A */
01634 , { 2280, 2280, 1915, 2280, 1770} /* UA,UG,C,C */
01635 , { 2280, 2280, 2280, 2280, 1770} /* UA,UG,C,G */
01636 , { 1770, 1770, 1770, 1770, 1770} /* UA,UG,C,U/T */
01637 }
01638 , { { 2185, 1900, 2185, 1280, 2185} /* UA,UG,G,E */
01639 , { 1900, 1900, 1900, 1280, 1900} /* UA,UG,G,A */
01640 , { 2185, 1900, 2100, 1280, 2100} /* UA,UG,G,C */
01641 , { 1280, 1280, 1280, 1280, 1280} /* UA,UG,G,G */
01642 , { 2185, 1900, 2100, 1280, 2100} /* UA,UG,G,U/T */
01643 }
01644 , { { 2280, 2280, 1655, 2280, 1150} /* UA,UG,U/T,E */
01645 , { 2280, 2280, 1625, 2280, 1150} /* UA,UG,U/T,A */
01646 , { 1655, 1625, 1625, 1625, 1150} /* UA,UG,U/T,C */
01647 , { 2280, 2280, 1625, 2280, 1150} /* UA,UG,U/T,G */
01648 , { 1150, 1150, 1150, 1150, 1150} /* UA,UG,U/T,U/T */
01649 }
01650 }
01651 , { { { 2355, 2265, 2355, 1795, 2155} /* UA,AT,E,E */
01652 , { 2265, 2265, 2155, 1710, 2155} /* UA,AT,E,A */
01653 , { 2355, 2155, 2355, 1710, 2140} /* UA,AT,E,C */
01654 , { 1795, 1710, 1710, 1710, 1795} /* UA,AT,E,G */
01655 , { 2155, 2155, 2140, 1795, 2140} /* UA,AT,E,U/T */
01656 }
01657 , { { 2265, 2265, 2140, 1425, 2140} /* UA,AT,A,E */
01658 , { 2265, 2265, 2140, 1425, 2140} /* UA,AT,A,A */
01659 , { 2140, 2140, 2140, 1425, 2140} /* UA,AT,A,C */
01660 , { 1425, 1425, 1425, 1425, 1425} /* UA,AT,A,G */
01661 , { 2140, 2140, 2140, 1425, 2140} /* UA,AT,A,U/T */
01662 }
01663 , { { 2355, 1795, 2355, 1795, 1795} /* UA,AT,C,E */
01664 , { 1795, 1695, 1695, 1695, 1795} /* UA,AT,C,A */
01665 , { 2355, 1695, 2355, 1695, 1795} /* UA,AT,C,C */
01666 , { 1795, 1695, 1695, 1695, 1795} /* UA,AT,C,G */
01667 , { 1795, 1795, 1795, 1795, 1795} /* UA,AT,C,U/T */
01668 }
01669 , { { 2155, 1870, 2155, 1415, 2155} /* UA,AT,G,E */
01670 , { 2155, 1870, 2155, 1415, 2155} /* UA,AT,G,A */
01671 , { 2155, 1870, 2140, 1415, 2140} /* UA,AT,G,C */
01672 , { 1415, 1415, 1415, 1415, 1415} /* UA,AT,G,G */
01673 , { 2155, 1870, 2140, 1415, 2140} /* UA,AT,G,U/T */
01674 }
01675 , { { 1695, 1695, 1540, 1695, 875} /* UA,AT,U/T,E */
01676 , { 1695, 1695, 1540, 1695, 875} /* UA,AT,U/T,A */
01677 , { 1540, 1540, 1540, 1540, 875} /* UA,AT,U/T,C */
01678 , { 1695, 1695, 1540, 1695, 875} /* UA,AT,U/T,G */
01679 , { 875, 875, 875, 875, 875} /* UA,AT,U/T,U/T */
01680 }
01681 }
01682 , { { { 2490, 2335, 2490, 2335, 2335} /* UA,UA,E,E */
01683 , { 2335, 2335, 2335, 2335, 2225} /* UA,UA,E,A */
01684 , { 2490, 2335, 2335, 2335, 2335} /* UA,UA,E,C */
01685 , { 2335, 2335, 2335, 2335, 2215} /* UA,UA,E,G */
01686 , { 2335, 2225, 2335, 2215, 2335} /* UA,UA,E,U/T */
01687 }
01688 , { { 2335, 2225, 2335, 1930, 2335} /* UA,UA,A,E */
01689 , { 2225, 2225, 2225, 1930, 2225} /* UA,UA,A,A */
01690 , { 2335, 2225, 2335, 1930, 2335} /* UA,UA,A,C */
01691 , { 1930, 1930, 1930, 1930, 1930} /* UA,UA,A,G */
01692 , { 2335, 2225, 2335, 1930, 2335} /* UA,UA,A,U/T */
01693 }
01694 , { { 2490, 2335, 2490, 2335, 1745} /* UA,UA,C,E */
01695 , { 2335, 2335, 2335, 2335, 1745} /* UA,UA,C,A */
01696 , { 2490, 2335, 2490, 2335, 1745} /* UA,UA,C,C */
01697 , { 2335, 2335, 2335, 2335, 1745} /* UA,UA,C,G */
01698 , { 1745, 1745, 1745, 1745, 1745} /* UA,UA,C,U/T */
01699 }
01700 , { { 2335, 1930, 2335, 1930, 2335} /* UA,UA,G,E */
01701 , { 1930, 1930, 1930, 1930, 1930} /* UA,UA,G,A */
01702 , { 2335, 1930, 2335, 1755, 2335} /* UA,UA,G,C */
01703 , { 1930, 1930, 1755, 1755, 1755} /* UA,UA,G,G */
01704 , { 2335, 1930, 2335, 1755, 2335} /* UA,UA,G,U/T */
01705 }
01706 , { { 2335, 2335, 1745, 2335, 1425} /* UA,UA,U/T,E */
01707 , { 2335, 2335, 1745, 2335, 1425} /* UA,UA,U/T,A */
01708 , { 1745, 1745, 1745, 1745, 1240} /* UA,UA,U/T,C */
01709 , { 2335, 2335, 1745, 2335, 1425} /* UA,UA,U/T,G */
01710 , { 1425, 1425, 1240, 1425, 1425} /* UA,UA,U/T,U/T */
01711 }
01712 }
01713 , { { { 2490, 2335, 2490, 2335, 2335} /* UA,NN,E,E */
01714 , { 2335, 2335, 2335, 2335, 2280} /* UA,NN,E,A */

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01715 , { 2490, 2335, 2490, 2335, 2335} /* UA,NN,E,C */
01716 , { 2335, 2335, 2335, 2335, 2280} /* UA,NN,E,G */
01717 , { 2335, 2280, 2335, 2280, 2335} /* UA,NN,E,U/T */
01718 }
01719 , { { 2335, 2265, 2335, 1930, 2335} /* UA,NN,A,E */
01720 , { 2265, 2265, 2225, 1930, 2225} /* UA,NN,A,A */
01721 , { 2335, 2225, 2335, 1930, 2335} /* UA,NN,A,C */
01722 , { 1930, 1930, 1930, 1930, 1930} /* UA,NN,A,G */
01723 , { 2335, 2225, 2335, 1930, 2335} /* UA,NN,A,U/T */
01724 }
01725 , { { 2490, 2335, 2490, 2335, 2280} /* UA,NN,C,E */
01726 , { 2335, 2335, 2335, 2335, 2280} /* UA,NN,C,A */
01727 , { 2490, 2335, 2490, 2335, 2265} /* UA,NN,C,C */
01728 , { 2335, 2335, 2335, 2335, 2280} /* UA,NN,C,G */
01729 , { 2280, 2280, 1805, 2280, 1805} /* UA,NN,C,U/T */
01730 }
01731 , { { 2335, 1930, 2335, 1930, 2335} /* UA,NN,G,E */
01732 , { 2215, 1930, 2215, 1930, 2215} /* UA,NN,G,A */
01733 , { 2335, 1930, 2335, 1755, 2335} /* UA,NN,G,C */
01734 , { 1930, 1930, 1755, 1755, 1755} /* UA,NN,G,G */
01735 , { 2335, 1930, 2335, 1755, 2335} /* UA,NN,G,U/T */
01736 }
01737 , { { 2335, 2335, 1745, 2335, 1425} /* UA,NN,U/T,E */
01738 , { 2335, 2335, 1745, 2335, 1425} /* UA,NN,U/T,A */
01739 , { 1745, 1745, 1745, 1745, 1240} /* UA,NN,U/T,C */
01740 , { 2335, 2335, 1745, 2335, 1425} /* UA,NN,U/T,G */
01741 , { 1425, 1425, 1240, 1425, 1425} /* UA,NN,U/T,U/T */
01742 }
01743 }
01744 }
01745 , { { { INF, INF, INF, INF, INF} /* NN,NP,E,E */
01746 , { INF, INF, INF, INF, INF} /* NN,NP,E,A */
01747 , { INF, INF, INF, INF, INF} /* NN,NP,E,C */
01748 , { INF, INF, INF, INF, INF} /* NN,NP,E,G */
01749 , { INF, INF, INF, INF, INF} /* NN,NP,E,U/T */
01750 }
01751 , { { INF, INF, INF, INF, INF} /* NN,NP,A,E */
01752 , { INF, INF, INF, INF, INF} /* NN,NP,A,A */
01753 , { INF, INF, INF, INF, INF} /* NN,NP,A,C */
01754 , { INF, INF, INF, INF, INF} /* NN,NP,A,G */
01755 , { INF, INF, INF, INF, INF} /* NN,NP,A,U/T */
01756 }
01757 , { { INF, INF, INF, INF, INF} /* NN,NP,C,E */
01758 , { INF, INF, INF, INF, INF} /* NN,NP,C,A */
01759 , { INF, INF, INF, INF, INF} /* NN,NP,C,C */
01760 , { INF, INF, INF, INF, INF} /* NN,NP,C,G */
01761 , { INF, INF, INF, INF, INF} /* NN,NP,C,U/T */
01762 }
01763 , { { INF, INF, INF, INF, INF} /* NN,NP,G,E */
01764 , { INF, INF, INF, INF, INF} /* NN,NP,G,A */
01765 , { INF, INF, INF, INF, INF} /* NN,NP,G,C */
01766 , { INF, INF, INF, INF, INF} /* NN,NP,G,G */
01767 , { INF, INF, INF, INF, INF} /* NN,NP,G,U/T */
01768 }
01769 , { { INF, INF, INF, INF, INF} /* NN,NP,U/T,E */
01770 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,A */
01771 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,C */
01772 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,G */
01773 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,U/T */
01774 }
01775 }
01776 , { { { 2030, 2030, 2030, 2030, 1935} /* NN,CG,E,E */
01777 , { 2030, 2030, 2030, 2030, 1935} /* NN,CG,E,A */
01778 , { 2030, 2030, 1850, 2030, 1850} /* NN,CG,E,C */
01779 , { 2030, 2030, 2030, 2030, 1715} /* NN,CG,E,G */
01780 , { 1935, 1935, 1850, 1715, 1850} /* NN,CG,E,U/T */
01781 }
01782 , { { 1870, 1870, 1870, 1715, 1870} /* NN,CG,A,E */
01783 , { 1870, 1870, 1870, 1715, 1870} /* NN,CG,A,A */
01784 , { 1850, 1850, 1850, 1715, 1850} /* NN,CG,A,C */
01785 , { 1430, 1430, 1430, 1430, 1430} /* NN,CG,A,G */
01786 , { 1850, 1850, 1850, 1715, 1850} /* NN,CG,A,U/T */
01787 }
01788 , { { 2030, 2030, 2030, 2030, 1600} /* NN,CG,C,E */
01789 , { 2030, 2030, 2030, 2030, 1600} /* NN,CG,C,A */
01790 , { 2030, 2030, 1745, 2030, 1520} /* NN,CG,C,C */
01791 , { 2030, 2030, 2030, 2030, 1600} /* NN,CG,C,G */
01792 , { 1600, 1600, 1520, 1600, 1520} /* NN,CG,C,U/T */
01793 }
01794 , { { 1935, 1650, 1935, 1390, 1935} /* NN,CG,G,E */
01795 , { 1650, 1650, 1650, 1390, 1650} /* NN,CG,G,A */
01796 , { 1935, 1650, 1850, 1090, 1850} /* NN,CG,G,C */
01797 , { 1390, 1390, 1090, 1090, 1090} /* NN,CG,G,G */
01798 , { 1935, 1650, 1850, 1090, 1850} /* NN,CG,G,U/T */
01799 }
01800 , { { 2030, 2030, 1600, 2030, 1095} /* NN,CG,U/T,E */
01801 , { 2030, 2030, 1600, 2030, 1095} /* NN,CG,U/T,A */

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01802 , { 1600, 1600, 1465, 1600, 970} /* NN,CG,U/T,C */
01803 , { 2030, 2030, 1600, 2030, 1095} /* NN,CG,U/T,G */
01804 , { 1095, 1095, 970, 1095, 970} /* NN,CG,U/T,U/T */
01805 }
01806 }
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01808 , { 2030, 2030, 2030, 2030, 2030} /* NN,GC,E,A */
01809 , { 2030, 2030, 2015, 2030, 2015} /* NN,GC,E,C */
01810 , { 2030, 2030, 2030, 2030, 2030} /* NN,GC,E,G */
01811 , { 2030, 2030, 1915, 2030, 1915} /* NN,GC,E,U/T */
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01813 , { { 1915, 1915, 1915, 1815, 1915} /* NN,GC,A,E */
01814 , { 1915, 1870, 1915, 1815, 1915} /* NN,GC,A,A */
01815 , { 1915, 1915, 1915, 1815, 1915} /* NN,GC,A,C */
01816 , { 1530, 1530, 1530, 1530, 1530} /* NN,GC,A,G */
01817 , { 1915, 1915, 1915, 1815, 1915} /* NN,GC,A,U/T */
01818 }
01819 , { { 2030, 2030, 2030, 2030, 2030} /* NN,GC,C,E */
01820 , { 2030, 2030, 2030, 2030, 2030} /* NN,GC,C,A */
01821 , { 2030, 2030, 2015, 2030, 2015} /* NN,GC,C,C */
01822 , { 2030, 2030, 2030, 2030, 2030} /* NN,GC,C,G */
01823 , { 2030, 2030, 1555, 2030, 1555} /* NN,GC,C,U/T */
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01825 , { { 1935, 1650, 1935, 1255, 1935} /* NN,GC,G,E */
01826 , { 1935, 1650, 1935, 1255, 1935} /* NN,GC,G,A */
01827 , { 1935, 1650, 1915, 1255, 1915} /* NN,GC,G,C */
01828 , { 1255, 1255, 1255, 1255, 1255} /* NN,GC,G,G */
01829 , { 1935, 1650, 1915, 1255, 1915} /* NN,GC,G,U/T */
01830 }
01831 , { { 2030, 2030, 1950, 2030, 1060} /* NN,GC,U/T,E */
01832 , { 2030, 2030, 1575, 2030, 1060} /* NN,GC,U/T,A */
01833 , { 1950, 1575, 1950, 1575, 890} /* NN,GC,U/T,C */
01834 , { 2030, 2030, 1575, 2030, 1060} /* NN,GC,U/T,G */
01835 , { 1060, 1060, 970, 1060, 970} /* NN,GC,U/T,U/T */
01836 }
01837 }
01838 , { { 2280, 2280, 2280, 2280, 2280} /* NN,GT,E,E */
01839 , { 2280, 2280, 2280, 2280, 2280} /* NN,GT,E,A */
01840 , { 2280, 2280, 2265, 2280, 2265} /* NN,GT,E,C */
01841 , { 2280, 2280, 2280, 2280, 2280} /* NN,GT,E,G */
01842 , { 2280, 2280, 2165, 2280, 2165} /* NN,GT,E,U/T */
01843 }
01844 , { { 2165, 2165, 2165, 2065, 2165} /* NN,GT,A,E */
01845 , { 2165, 2120, 2165, 2065, 2165} /* NN,GT,A,A */
01846 , { 2165, 2165, 2165, 2065, 2165} /* NN,GT,A,C */
01847 , { 1780, 1780, 1780, 1780, 1780} /* NN,GT,A,G */
01848 , { 2165, 2165, 2165, 2065, 2165} /* NN,GT,A,U/T */
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01852 , { 2280, 2280, 2265, 2280, 2265} /* NN,GT,C,C */
01853 , { 2280, 2280, 2280, 2280, 2280} /* NN,GT,C,G */
01854 , { 2280, 2280, 1805, 2280, 1805} /* NN,GT,C,U/T */
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01856 , { { 2185, 1900, 2185, 1505, 2185} /* NN,GT,G,E */
01857 , { 2185, 1900, 2185, 1505, 2185} /* NN,GT,G,A */
01858 , { 2185, 1900, 2165, 1505, 2165} /* NN,GT,G,C */
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01860 , { 2185, 1900, 2165, 1505, 2165} /* NN,GT,G,U/T */
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01866 , { 1310, 1310, 1220, 1310, 1220} /* NN,GT,U/T,U/T */
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01868 }
01869 , { { 2280, 2280, 2280, 2280, 2185} /* NN,UG,E,E */
01870 , { 2280, 2280, 2280, 2280, 2185} /* NN,UG,E,A */
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01872 , { 2280, 2280, 2280, 2280, 1965} /* NN,UG,E,G */
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01876 , { 2120, 2120, 2120, 1965, 2120} /* NN,UG,A,A */
01877 , { 2100, 2100, 2100, 1965, 2100} /* NN,UG,A,C */
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01879 , { 2100, 2100, 2100, 1965, 2100} /* NN,UG,A,U/T */
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01882 , { 2280, 2280, 2280, 2280, 1850} /* NN,UG,C,A */
01883 , { 2280, 2280, 1995, 2280, 1770} /* NN,UG,C,C */
01884 , { 2280, 2280, 2280, 2280, 1850} /* NN,UG,C,G */
01885 , { 1850, 1850, 1770, 1850, 1770} /* NN,UG,C,U/T */
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01888 , { 1900, 1900, 1900, 1640, 1900} /* NN,UG,G,A */

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01891 , { 2185, 1900, 2100, 1340, 2100} /* NN,UG,G,U/T */
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01893 , { { 2280, 2280, 1850, 2280, 1345} /* NN,UG,U/T,E */
01894 , { 2280, 2280, 1850, 2280, 1345} /* NN,UG,U/T,A */
01895 , { 1850, 1850, 1715, 1850, 1220} /* NN,UG,U/T,C */
01896 , { 2280, 2280, 1850, 2280, 1345} /* NN,UG,U/T,G */
01897 , { 1345, 1345, 1220, 1345, 1220} /* NN,UG,U/T,U/T */
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01899 }
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01901 , { 2265, 2265, 2165, 2165, 2165} /* NN,AT,E,A */
01902 , { 2355, 2165, 2355, 2165, 2200} /* NN,AT,E,C */
01903 , { 2165, 2165, 2165, 2165, 2165} /* NN,AT,E,G */
01904 , { 2200, 2165, 2200, 2165, 2200} /* NN,AT,E,U/T */
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01907 , { 2265, 2265, 2140, 1975, 2140} /* NN,AT,A,A */
01908 , { 2140, 2140, 2140, 1975, 2140} /* NN,AT,A,C */
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01927 , { 2165, 2165, 1835, 2165, 1605} /* NN,AT,U/T,G */
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01934 , { 2335, 2335, 2335, 2335, 2215} /* NN,UA,E,G */
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01938 , { 2265, 2265, 2265, 2215, 2265} /* NN,UA,A,A */
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01959 , { 1425, 1425, 1240, 1425, 1425} /* NN,UA,U/T,U/T */
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01961 }
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01966 , { 2335, 2280, 2335, 2280, 2335} /* NN,NN,E,U/T */
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01968 , { { 2335, 2265, 2335, 2215, 2335} /* NN,NN,A,E */
01969 , { 2265, 2265, 2265, 2215, 2265} /* NN,NN,A,A */
01970 , { 2335, 2265, 2335, 2215, 2335} /* NN,NN,A,C */
01971 , { 1930, 1930, 1930, 1930, 1930} /* NN,NN,A,G */
01972 , { 2335, 2265, 2335, 2215, 2335} /* NN,NN,A,U/T */
01973 }
01974 , { { 2490, 2335, 2490, 2335, 2280} /* NN,NN,C,E */
01975 , { 2335, 2335, 2335, 2335, 2280} /* NN,NN,C,A */

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01978     , { 2280, 2280, 2200, 2280, 2200} /* NN,NN,C,U/T */
01979     }
01980     , { { 2335, 1930, 2335, 1930, 2335} /* NN,NN,G,E */
01981     , { 2215, 1930, 2215, 1930, 2215} /* NN,NN,G,A */
01982     , { 2335, 1930, 2335, 1755, 2335} /* NN,NN,G,C */
01983     , { 1930, 1930, 1755, 1755, 1755} /* NN,NN,G,G */
01984     , { 2335, 1930, 2335, 1755, 2335} /* NN,NN,G,U/T */
01985     }
01986     , { { 2335, 2335, 2200, 2335, 1605} /* NN,NN,U/T,E */
01987     , { 2335, 2335, 2140, 2335, 1605} /* NN,NN,U/T,A */
01988     , { 2200, 2140, 2200, 2140, 1330} /* NN,NN,U/T,C */
01989     , { 2335, 2335, 2140, 2335, 1605} /* NN,NN,U/T,G */
01990     , { 1605, 1605, 1330, 1605, 1425} /* NN,NN,U/T,U/T */
01991     }
01992     }
01993     }
01994

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11.100 intl22.h

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00125 }
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00129 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,E,G */
00130 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,E,U */
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00133 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,A,A */
00134 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,A,C */
00135 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,A,G */
00136 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,A,U */
00137 }
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00139 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,C,A */
00140 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,C,C */
00141 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,C,G */
00142 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,C,U */
00143 }
00144 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,U,G,E */
00145 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,G,A */
00146 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,G,C */
00147 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,G,G */
00148 ,{ INF, INF, INF, INF, INF} /* NP,NP,U,G,U */
00149 }
00150 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,U,U,E */
```

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00154      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,U,U */
00155      }
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00157  }
00158  ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,E */
00159  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,A */
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00180  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G,U */
00181  }
00182  ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,U,E */
00183  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,U,A */
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00188  }
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00190  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E,A */
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00192  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E,G */
00193  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E,U */
00194  }
00195  ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,A,E */
00196  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,A,A */
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00204  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,C,G */
00205  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,C,U */
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00208  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,G,A */
00209  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,G,C */
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00216  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,U,G */
00217  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,U,U */
00218  }
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00220  ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,E */
00221  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,A */
00222  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,C */
00223  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,G */
00224  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,U */
00225  }
00226  ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A,E */
00227  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A,A */
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00229  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A,G */
00230  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A,U */
00231  }
00232  ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,C,E */
00233  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,C,A */
00234  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,C,C */
00235  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,C,G */
00236  , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,C,U */
00237  }

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00247 ,{ INF, INF, INF, INF, INF} /* NP,CG,C,U,G */
00248 ,{ INF, INF, INF, INF, INF} /* NP,CG,C,U,U */
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00250 }
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00276 ,{ INF, INF, INF, INF, INF} /* NP,CG,G,U,A */
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00278 ,{ INF, INF, INF, INF, INF} /* NP,CG,G,U,G */
00279 ,{ INF, INF, INF, INF, INF} /* NP,CG,G,U,U */
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00284 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,E,C */
00285 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,E,G */
00286 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,E,U */
00287 }
00288 ,{{{ INF, INF, INF, INF, INF} /* NP,CG,U,A,E */
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00295 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,C,A */
00296 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,C,C */
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00298 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,C,U */
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00304 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,G,U */
00305 }
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00307 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,U,A */
00308 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,U,C */
00309 ,{ INF, INF, INF, INF, INF} /* NP,CG,U,U,G */
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00311 }
00312 }
00313 }
00314 ,{{{ INF, INF, INF, INF, INF} /* NP,GC,E,E,E */
00315 ,{ INF, INF, INF, INF, INF} /* NP,GC,E,E,A */
00316 ,{ INF, INF, INF, INF, INF} /* NP,GC,E,E,C */
00317 ,{ INF, INF, INF, INF, INF} /* NP,GC,E,E,G */
00318 ,{ INF, INF, INF, INF, INF} /* NP,GC,E,E,U */
00319 }
00320 ,{{{ INF, INF, INF, INF, INF} /* NP,GC,E,A,E */
00321 ,{ INF, INF, INF, INF, INF} /* NP,GC,E,A,A */
00322 ,{ INF, INF, INF, INF, INF} /* NP,GC,E,A,C */
00323 ,{ INF, INF, INF, INF, INF} /* NP,GC,E,A,G */
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00330      ,{      INF,      INF,      INF,      INF,      INF} /* NP,GC,E,C,U */
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00332      ,{{      INF,      INF,      INF,      INF,      INF} /* NP,GC,E,G,E */
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00391      ,{      INF,      INF,      INF,      INF,      INF} /* NP,GC,C,C,G */
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00404      ,{      INF,      INF,      INF,      INF,      INF} /* NP,GC,C,U,U */
00405      }
00406      }
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```

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00417     , {       INF,      INF,      INF,      INF,      INF} /* NP,GC,G,A,U */
00418     }
00419     , {{      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,C,E */
00420     , {       INF,      INF,      INF,      INF,      INF} /* NP,GC,G,C,A */
00421     , {       INF,      INF,      INF,      INF,      INF} /* NP,GC,G,C,C */
00422     , {       INF,      INF,      INF,      INF,      INF} /* NP,GC,G,C,G */
00423     , {       INF,      INF,      INF,      INF,      INF} /* NP,GC,G,C,U */
00424     }
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00430     }
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00437     }
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00442     , {       INF,      INF,      INF,      INF,      INF} /* NP,GC,U,E,U */
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00444     , {{      INF,      INF,      INF,      INF,      INF} /* NP,GC,U,A,E */
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00720 , { INF, INF, INF, INF, INF } /* NP,UG,G,E,A */
00721 , { INF, INF, INF, INF, INF } /* NP,UG,G,E,C */
00722 , { INF, INF, INF, INF, INF } /* NP,UG,G,E,G */
00723 , { INF, INF, INF, INF, INF } /* NP,UG,G,E,U */
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00725 , { { INF, INF, INF, INF, INF } /* NP,UG,G,A,E */
00726 , { INF, INF, INF, INF, INF } /* NP,UG,G,A,A */
00727 , { INF, INF, INF, INF, INF } /* NP,UG,G,A,C */
00728 , { INF, INF, INF, INF, INF } /* NP,UG,G,A,G */
00729 , { INF, INF, INF, INF, INF } /* NP,UG,G,A,U */
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00731 , { { INF, INF, INF, INF, INF } /* NP,UG,G,C,E */
00732 , { INF, INF, INF, INF, INF } /* NP,UG,G,C,A */
00733 , { INF, INF, INF, INF, INF } /* NP,UG,G,C,C */
00734 , { INF, INF, INF, INF, INF } /* NP,UG,G,C,G */
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00738 , { INF, INF, INF, INF, INF } /* NP,UG,G,G,A */
00739 , { INF, INF, INF, INF, INF } /* NP,UG,G,G,C */
00740 , { INF, INF, INF, INF, INF } /* NP,UG,G,G,G */
00741 , { INF, INF, INF, INF, INF } /* NP,UG,G,G,U */
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00743 , { { INF, INF, INF, INF, INF } /* NP,UG,G,U,E */
00744 , { INF, INF, INF, INF, INF } /* NP,UG,G,U,A */
00745 , { INF, INF, INF, INF, INF } /* NP,UG,G,U,C */
00746 , { INF, INF, INF, INF, INF } /* NP,UG,G,U,G */
00747 , { INF, INF, INF, INF, INF } /* NP,UG,G,U,U */
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00749 }
00750 , { { { INF, INF, INF, INF, INF } /* NP,UG,U,E,E */
00751 , { INF, INF, INF, INF, INF } /* NP,UG,U,E,A */
00752 , { INF, INF, INF, INF, INF } /* NP,UG,U,E,C */
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00757 , { INF, INF, INF, INF, INF } /* NP,UG,U,A,A */
00758 , { INF, INF, INF, INF, INF } /* NP,UG,U,A,C */
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00842      }
00843      }
00844      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,AU,C,E,E */
00845      , {      INF,      INF,      INF,      INF,      INF} /* NP,AU,C,E,A */
00846      , {      INF,      INF,      INF,      INF,      INF} /* NP,AU,C,E,C */

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01008      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, A, C */
01009      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, A, G */
01010      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, A, U */
01011      }
01012      , { {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, C, E */
01013      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, C, A */
01014      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, C, C */
01015      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, C, G */
01016      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, C, U */
01017      }
01018      , { {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, G, E */
01019      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, G, A */
01020      , {      INF,      INF,      INF,      INF,      INF} /* NP, UA, C, G, C */

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01022      , {      INF,      INF,      INF,      INF,      INF} /* NP,UA,C,G,U */
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01024      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UA,C,U,E */
01025      , {      INF,      INF,      INF,      INF,      INF} /* NP,UA,C,U,A */
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01031      , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,E,E */
01032      , {      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,E,A */
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01037      , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,A,E */
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01043      , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,C,E */
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01055      , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U,E */
01056      , {      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U,A */
01057      , {      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U,C */
01058      , {      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U,G */
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01097      , {      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,E,G */
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01280 }
01281 }

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01300 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,A,G,E */
01301 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,G,A */
01302 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,G,C */
01303 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,G,G */
01304 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,G,U */
01305 }
01306 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,A,U,E */
01307 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,U,A */
01308 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,U,C */
01309 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,U,G */
01310 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,U,U */
01311 }
01312 }
01313 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,C,E,E */
01314 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,E,A */
01315 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,E,C */
01316 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,E,G */
01317 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,E,U */
01318 }
01319 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,C,A,E */
01320 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,A,A */
01321 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,A,C */
01322 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,A,G */
01323 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,A,U */
01324 }
01325 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,C,C,E */
01326 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,C,A */
01327 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,C,C */
01328 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,C,G */
01329 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,C,U */
01330 }
01331 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,C,G,E */
01332 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,G,A */
01333 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,G,C */
01334 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,G,G */
01335 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,G,U */
01336 }
01337 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,C,U,E */
01338 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,U,A */
01339 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,U,C */
01340 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,U,G */
01341 ,{ INF, INF, INF, INF, INF} /* CG,NP,C,U,U */
01342 }
01343 }
01344 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,G,E,E */
01345 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,E,A */
01346 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,E,C */
01347 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,E,G */
01348 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,E,U */
01349 }
01350 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,G,A,E */
01351 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,A,A */
01352 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,A,C */
01353 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,A,G */
01354 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,A,U */
01355 }
01356 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,G,C,E */
01357 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,C,A */
01358 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,C,C */
01359 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,C,G */
01360 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,C,U */
01361 }
01362 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,G,G,E */
01363 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,G,A */
01364 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,G,C */
01365 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,G,G */
01366 ,{ INF, INF, INF, INF, INF} /* CG,NP,G,G,U */
01367 }
01368 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,G,U,E */
```

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01369      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U,A */
01370      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U,C */
01371      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U,G */
01372      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U,U */
01373      }
01374      }
01375      ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,E,E */
01376      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,E,A */
01377      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,E,C */
01378      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,E,G */
01379      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,E,U */
01380      }
01381      ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,A,E */
01382      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,A,A */
01383      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,A,C */
01384      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,A,G */
01385      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,A,U */
01386      }
01387      ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,C,E */
01388      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,C,A */
01389      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,C,C */
01390      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,C,G */
01391      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,C,U */
01392      }
01393      ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,G,E */
01394      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,G,A */
01395      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,G,C */
01396      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,G,G */
01397      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,G,U */
01398      }
01399      ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,U,E */
01400      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,U,A */
01401      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,U,C */
01402      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,U,G */
01403      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U,U,U */
01404      }
01405      }
01406      }
01407      ,{{{      200,      160,      200,      150,      200} /* CG,CG,E,E,E */
01408      , {      200,      160,      200,      150,      200} /* CG,CG,E,E,A */
01409      , {      180,      140,      180,      140,      180} /* CG,CG,E,E,C */
01410      , {      200,      160,      200,      150,      200} /* CG,CG,E,E,G */
01411      , {      170,      130,      170,      120,      170} /* CG,CG,E,E,U */
01412      }
01413      ,{{{      160,      120,      160,      110,      160} /* CG,CG,E,A,E */
01414      , {      160,      120,      160,      110,      160} /* CG,CG,E,A,A */
01415      , {      150,      110,      150,      110,      150} /* CG,CG,E,A,C */
01416      , {      110,      20,      110,      20,      90} /* CG,CG,E,A,G */
01417      , {      150,      110,      150,      110,      150} /* CG,CG,E,A,U */
01418      }
01419      ,{{{      200,      160,      200,      150,      200} /* CG,CG,E,C,E */
01420      , {      200,      160,      200,      150,      200} /* CG,CG,E,C,A */
01421      , {      180,      140,      180,      140,      180} /* CG,CG,E,C,C */
01422      , {      200,      160,      200,      150,      200} /* CG,CG,E,C,G */
01423      , {      170,      130,      170,      120,      170} /* CG,CG,E,C,U */
01424      }
01425      ,{{{      150,      110,      150,      110,      150} /* CG,CG,E,G,E */
01426      , {      110,      20,      110,      20,      90} /* CG,CG,E,G,A */
01427      , {      150,      110,      150,      110,      150} /* CG,CG,E,G,C */
01428      , {      80,      0,      10,      80,      20} /* CG,CG,E,G,G */
01429      , {      150,      110,      150,      110,      150} /* CG,CG,E,G,U */
01430      }
01431      ,{{{      200,      160,      200,      150,      200} /* CG,CG,E,U,E */
01432      , {      200,      160,      200,      150,      200} /* CG,CG,E,U,A */
01433      , {      170,      130,      170,      120,      170} /* CG,CG,E,U,C */
01434      , {      200,      160,      200,      150,      200} /* CG,CG,E,U,G */
01435      , {      100,      100,      80,      30,      80} /* CG,CG,E,U,U */
01436      }
01437      }
01438      ,{{{      200,      160,      200,      110,      200} /* CG,CG,A,E,E */
01439      , {      200,      160,      200,      60,      200} /* CG,CG,A,E,A */
01440      , {      180,      140,      180,      110,      180} /* CG,CG,A,E,C */
01441      , {      200,      160,      200,      60,      200} /* CG,CG,A,E,G */
01442      , {      170,      130,      170,      90,      170} /* CG,CG,A,E,U */
01443      }
01444      ,{{{      160,      120,      160,      20,      160} /* CG,CG,A,A,E */
01445      , {      160,      120,      160,      20,      160} /* CG,CG,A,A,A */
01446      , {      150,      110,      150,      20,      150} /* CG,CG,A,A,C */
01447      , {      60,      20,      60,      -70,      60} /* CG,CG,A,A,G */
01448      , {      150,      110,      150,      20,      150} /* CG,CG,A,A,U */
01449      }
01450      ,{{{      200,      160,      200,      110,      200} /* CG,CG,A,C,E */
01451      , {      200,      160,      200,      60,      200} /* CG,CG,A,C,A */
01452      , {      180,      140,      180,      110,      180} /* CG,CG,A,C,C */
01453      , {      200,      160,      200,      60,      200} /* CG,CG,A,C,G */
01454      , {      170,      130,      170,      90,      170} /* CG,CG,A,C,U */
01455      }

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01456 ,{{ 150, 110, 150, 20, 150} /* CG,CG,A,G,E */
01457 ,{ 60, 20, 60, -70, 60} /* CG,CG,A,G,A */
01458 ,{ 150, 110, 150, 20, 150} /* CG,CG,A,G,C */
01459 ,{ 10, -30, 10, 0, 10} /* CG,CG,A,G,G */
01460 ,{ 150, 110, 150, 20, 150} /* CG,CG,A,G,U */
01461 }
01462 ,{{ 200, 160, 200, 90, 200} /* CG,CG,A,U,E */
01463 ,{ 200, 160, 200, 60, 200} /* CG,CG,A,U,A */
01464 ,{ 170, 130, 170, 90, 170} /* CG,CG,A,U,C */
01465 ,{ 200, 160, 200, 60, 200} /* CG,CG,A,U,G */
01466 ,{ 100, 100, 80, -50, 80} /* CG,CG,A,U,U */
01467 }
01468 }
01469 ,{{{ 180, 150, 180, 150, 170} /* CG,CG,C,E,E */
01470 ,{ 180, 150, 180, 150, 170} /* CG,CG,C,E,A */
01471 ,{ 170, 140, 170, 140, 150} /* CG,CG,C,E,C */
01472 ,{ 180, 150, 180, 150, 170} /* CG,CG,C,E,G */
01473 ,{ 150, 120, 150, 120, 140} /* CG,CG,C,E,U */
01474 }
01475 ,{{ 140, 110, 140, 110, 130} /* CG,CG,C,A,E */
01476 ,{ 140, 110, 140, 110, 130} /* CG,CG,C,A,A */
01477 ,{ 140, 110, 140, 110, 120} /* CG,CG,C,A,C */
01478 ,{ 110, 20, 110, 20, 90} /* CG,CG,C,A,G */
01479 ,{ 140, 110, 140, 110, 120} /* CG,CG,C,A,U */
01480 }
01481 ,{{{ 180, 150, 180, 150, 170} /* CG,CG,C,C,E */
01482 ,{ 180, 150, 180, 150, 170} /* CG,CG,C,C,A */
01483 ,{ 170, 140, 170, 140, 150} /* CG,CG,C,C,C */
01484 ,{ 180, 150, 180, 150, 170} /* CG,CG,C,C,G */
01485 ,{ 150, 120, 150, 120, 140} /* CG,CG,C,C,U */
01486 }
01487 ,{{{ 140, 110, 140, 110, 120} /* CG,CG,C,G,E */
01488 ,{ 110, 20, 110, 20, 90} /* CG,CG,C,G,A */
01489 ,{ 140, 110, 140, 110, 120} /* CG,CG,C,G,C */
01490 ,{ -10, -40, -10, -40, -20} /* CG,CG,C,G,G */
01491 ,{ 140, 110, 140, 110, 120} /* CG,CG,C,G,U */
01492 }
01493 ,{{{ 180, 150, 180, 150, 170} /* CG,CG,C,U,E */
01494 ,{ 180, 150, 180, 150, 170} /* CG,CG,C,U,A */
01495 ,{ 150, 120, 150, 120, 140} /* CG,CG,C,U,C */
01496 ,{ 180, 150, 180, 150, 170} /* CG,CG,C,U,G */
01497 ,{ 60, 30, 60, 30, 50} /* CG,CG,C,U,U */
01498 }
01499 }
01500 ,{{{ 200, 110, 200, 80, 200} /* CG,CG,G,E,E */
01501 ,{ 200, 60, 200, 10, 200} /* CG,CG,G,E,A */
01502 ,{ 180, 110, 180, -10, 180} /* CG,CG,G,E,C */
01503 ,{ 200, 60, 200, 80, 200} /* CG,CG,G,E,G */
01504 ,{ 170, 90, 170, 20, 170} /* CG,CG,G,E,U */
01505 }
01506 ,{{{ 160, 20, 160, 0, 160} /* CG,CG,G,A,E */
01507 ,{ 160, 20, 160, -30, 160} /* CG,CG,G,A,A */
01508 ,{ 150, 20, 150, -40, 150} /* CG,CG,G,A,C */
01509 ,{ 60, -70, 60, 0, 60} /* CG,CG,G,A,G */
01510 ,{ 150, 20, 150, -40, 150} /* CG,CG,G,A,U */
01511 }
01512 ,{{{ 200, 110, 200, 10, 200} /* CG,CG,G,C,E */
01513 ,{ 200, 60, 200, 10, 200} /* CG,CG,G,C,A */
01514 ,{ 180, 110, 180, -10, 180} /* CG,CG,G,C,C */
01515 ,{ 200, 60, 200, 10, 200} /* CG,CG,G,C,G */
01516 ,{ 170, 90, 170, -20, 170} /* CG,CG,G,C,U */
01517 }
01518 ,{{{ 150, 20, 150, 80, 150} /* CG,CG,G,G,E */
01519 ,{ 60, -70, 60, 0, 60} /* CG,CG,G,G,A */
01520 ,{ 150, 20, 150, -40, 150} /* CG,CG,G,G,C */
01521 ,{ 80, 0, 10, 80, 10} /* CG,CG,G,G,G */
01522 ,{ 150, 20, 150, -40, 150} /* CG,CG,G,G,U */
01523 }
01524 ,{{{ 200, 90, 200, 20, 200} /* CG,CG,G,U,E */
01525 ,{ 200, 60, 200, 10, 200} /* CG,CG,G,U,A */
01526 ,{ 170, 90, 170, -20, 170} /* CG,CG,G,U,C */
01527 ,{ 200, 60, 200, 10, 200} /* CG,CG,G,U,G */
01528 ,{ 80, -50, 80, 20, 80} /* CG,CG,G,U,U */
01529 }
01530 }
01531 ,{{{ 170, 150, 170, 150, 100} /* CG,CG,U,E,E */
01532 ,{ 170, 150, 170, 150, 100} /* CG,CG,U,E,A */
01533 ,{ 150, 140, 150, 140, 60} /* CG,CG,U,E,C */
01534 ,{ 170, 150, 170, 150, 80} /* CG,CG,U,E,G */
01535 ,{ 140, 120, 140, 120, 50} /* CG,CG,U,E,U */
01536 }
01537 ,{{{ 130, 110, 130, 110, 100} /* CG,CG,U,A,E */
01538 ,{ 130, 110, 130, 110, 100} /* CG,CG,U,A,A */
01539 ,{ 120, 110, 120, 110, 30} /* CG,CG,U,A,C */
01540 ,{ 90, 20, 90, 20, -50} /* CG,CG,U,A,G */
01541 ,{ 120, 110, 120, 110, 30} /* CG,CG,U,A,U */
01542 }
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01543 ,{{ 170, 150, 170, 150, 80} /* CG,CG,U,C,E */
01544 ,{ 170, 150, 170, 150, 80} /* CG,CG,U,C,A */
01545 ,{ 150, 140, 150, 140, 60} /* CG,CG,U,C,C */
01546 ,{ 170, 150, 170, 150, 80} /* CG,CG,U,C,G */
01547 ,{ 140, 120, 140, 120, 50} /* CG,CG,U,C,U */
01548 }
01549 ,{{ 120, 110, 120, 110, 30} /* CG,CG,U,G,E */
01550 ,{ 90, 20, 90, 20, -50} /* CG,CG,U,G,A */
01551 ,{ 120, 110, 120, 110, 30} /* CG,CG,U,G,C */
01552 ,{ 20, -40, -20, -40, 20} /* CG,CG,U,G,G */
01553 ,{ 120, 110, 120, 110, 30} /* CG,CG,U,G,U */
01554 }
01555 ,{{ 170, 150, 170, 150, 80} /* CG,CG,U,U,E */
01556 ,{ 170, 150, 170, 150, 80} /* CG,CG,U,U,A */
01557 ,{ 140, 120, 140, 120, 50} /* CG,CG,U,U,C */
01558 ,{ 170, 150, 170, 150, 80} /* CG,CG,U,U,G */
01559 ,{ 50, 30, 50, 30, -40} /* CG,CG,U,U,U */
01560 }
01561 }
01562 }
01563 ,{{{ 220, 150, 220, 140, 170} /* CG,GC,E,E,E */
01564 ,{ 220, 130, 220, 130, 170} /* CG,GC,E,E,A */
01565 ,{ 150, 110, 150, 110, 150} /* CG,GC,E,E,C */
01566 ,{ 140, 100, 140, 100, 140} /* CG,GC,E,E,G */
01567 ,{ 170, 150, 150, 140, 170} /* CG,GC,E,E,U */
01568 }
01569 ,{{ 220, 130, 220, 130, 170} /* CG,GC,E,A,E */
01570 ,{ 220, 130, 220, 130, 170} /* CG,GC,E,A,A */
01571 ,{ 150, 110, 150, 100, 150} /* CG,GC,E,A,C */
01572 ,{ 70, -30, 70, -70, 50} /* CG,GC,E,A,G */
01573 ,{ 150, 110, 150, 100, 150} /* CG,GC,E,A,U */
01574 }
01575 ,{{ 190, 110, 190, 100, 170} /* CG,GC,E,C,E */
01576 ,{ 190, 110, 190, 100, 140} /* CG,GC,E,C,A */
01577 ,{ 150, 110, 150, 100, 150} /* CG,GC,E,C,C */
01578 ,{ 140, 100, 140, 100, 140} /* CG,GC,E,C,G */
01579 ,{ 170, 110, 150, 100, 170} /* CG,GC,E,C,U */
01580 }
01581 ,{{ 150, 110, 150, 100, 150} /* CG,GC,E,G,E */
01582 ,{ 140, 70, 70, -10, 140} /* CG,GC,E,G,A */
01583 ,{ 150, 110, 150, 100, 150} /* CG,GC,E,G,C */
01584 ,{ 80, -30, 10, 80, 70} /* CG,GC,E,G,G */
01585 ,{ 150, 110, 150, 100, 150} /* CG,GC,E,G,U */
01586 }
01587 ,{{ 150, 150, 150, 140, 150} /* CG,GC,E,U,E */
01588 ,{ 140, 100, 140, 100, 140} /* CG,GC,E,U,A */
01589 ,{ 150, 110, 150, 110, 150} /* CG,GC,E,U,C */
01590 ,{ 140, 100, 140, 100, 140} /* CG,GC,E,U,G */
01591 ,{ 150, 150, 70, 140, 70} /* CG,GC,E,U,U */
01592 }
01593 }
01594 ,{{{ 170, 150, 150, 90, 170} /* CG,GC,A,E,E */
01595 ,{ 170, 130, 140, 10, 170} /* CG,GC,A,E,A */
01596 ,{ 150, 110, 150, 80, 150} /* CG,GC,A,E,C */
01597 ,{ 140, 100, 140, 10, 140} /* CG,GC,A,E,G */
01598 ,{ 150, 150, 150, 90, 150} /* CG,GC,A,E,U */
01599 }
01600 ,{{ 170, 130, 150, 10, 170} /* CG,GC,A,A,E */
01601 ,{ 170, 130, 60, 0, 170} /* CG,GC,A,A,A */
01602 ,{ 150, 110, 150, -70, 150} /* CG,GC,A,A,C */
01603 ,{ 10, -30, 10, -160, -30} /* CG,GC,A,A,G */
01604 ,{ 150, 110, 150, 10, 150} /* CG,GC,A,A,U */
01605 }
01606 ,{{ 150, 110, 150, 70, 150} /* CG,GC,A,C,E */
01607 ,{ 140, 100, 50, -100, 140} /* CG,GC,A,C,A */
01608 ,{ 150, 110, 150, -60, 150} /* CG,GC,A,C,C */
01609 ,{ 140, 100, 140, 10, 140} /* CG,GC,A,C,G */
01610 ,{ 150, 110, 150, 70, 150} /* CG,GC,A,C,U */
01611 }
01612 ,{{ 150, 110, 150, 10, 150} /* CG,GC,A,G,E */
01613 ,{ 40, 40, 30, -70, 30} /* CG,GC,A,G,A */
01614 ,{ 150, 110, 150, 10, 150} /* CG,GC,A,G,C */
01615 ,{ 10, -30, -30, 0, 10} /* CG,GC,A,G,G */
01616 ,{ 150, 110, 150, 10, 150} /* CG,GC,A,G,U */
01617 }
01618 ,{{ 150, 150, 150, 90, 150} /* CG,GC,A,U,E */
01619 ,{ 140, 100, 140, 10, 140} /* CG,GC,A,U,A */
01620 ,{ 150, 110, 150, 80, 150} /* CG,GC,A,U,C */
01621 ,{ 140, 100, 140, 10, 140} /* CG,GC,A,U,G */
01622 ,{ 150, 150, 0, 90, 70} /* CG,GC,A,U,U */
01623 }
01624 }
01625 ,{{{ 220, 130, 220, 130, 170} /* CG,GC,C,E,E */
01626 ,{ 220, 130, 220, 130, 140} /* CG,GC,C,E,A */
01627 ,{ 140, 110, 140, 110, 120} /* CG,GC,C,E,C */
01628 ,{ 130, 100, 130, 100, 110} /* CG,GC,C,E,G */
01629 ,{ 170, 100, 130, 100, 170} /* CG,GC,C,E,U */

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01630     }
01631     ,{{ 220, 130, 220, 130, 140} /* CG,GC,C,A,E */
01632     ,{ 220, 130, 220, 130, 140} /* CG,GC,C,A,A */
01633     ,{ 130, 100, 130, 100, 120} /* CG,GC,C,A,C */
01634     ,{ 70, -70, 70, -70, 0} /* CG,GC,C,A,G */
01635     ,{ 130, 100, 130, 100, 120} /* CG,GC,C,A,U */
01636     }
01637     ,{{ 190, 110, 190, 100, 170} /* CG,GC,C,C,E */
01638     ,{ 190, 110, 190, 100, 110} /* CG,GC,C,C,A */
01639     ,{ 130, 100, 130, 100, 120} /* CG,GC,C,C,C */
01640     ,{ 130, 100, 130, 100, 110} /* CG,GC,C,C,G */
01641     ,{ 170, 100, 130, 100, 170} /* CG,GC,C,C,U */
01642     }
01643     ,{{ 130, 100, 130, 100, 120} /* CG,GC,C,G,E */
01644     ,{ 70, 70, 70, -10, 60} /* CG,GC,C,G,A */
01645     ,{ 130, 100, 130, 100, 120} /* CG,GC,C,G,C */
01646     ,{ 20, -40, -10, -40, 20} /* CG,GC,C,G,G */
01647     ,{ 130, 100, 130, 100, 120} /* CG,GC,C,G,U */
01648     }
01649     ,{{ 140, 110, 140, 110, 120} /* CG,GC,C,U,E */
01650     ,{ 130, 100, 130, 100, 110} /* CG,GC,C,U,A */
01651     ,{ 140, 110, 140, 110, 120} /* CG,GC,C,U,C */
01652     ,{ 130, 100, 130, 100, 110} /* CG,GC,C,U,G */
01653     ,{ 30, -20, -10, 30, 20} /* CG,GC,C,U,U */
01654     }
01655     }
01656     ,{{{ 170, 90, 170, 140, 170} /* CG,GC,G,E,E */
01657     ,{ 170, 70, 170, -10, 170} /* CG,GC,G,E,A */
01658     ,{ 150, 80, 150, -40, 150} /* CG,GC,G,E,C */
01659     ,{ 140, 10, 140, 80, 140} /* CG,GC,G,E,G */
01660     ,{ 150, 90, 150, 140, 150} /* CG,GC,G,E,U */
01661     }
01662     ,{{ 170, 10, 170, -10, 170} /* CG,GC,G,A,E */
01663     ,{ 170, -20, 170, -10, 170} /* CG,GC,G,A,A */
01664     ,{ 150, -40, 150, -40, 150} /* CG,GC,G,A,C */
01665     ,{ -30, -170, -30, -90, -30} /* CG,GC,G,A,G */
01666     ,{ 150, 10, 150, -40, 150} /* CG,GC,G,A,U */
01667     }
01668     ,{{ 150, 70, 150, 20, 150} /* CG,GC,G,C,E */
01669     ,{ 140, 70, 140, -50, 140} /* CG,GC,G,C,A */
01670     ,{ 150, 70, 150, -40, 150} /* CG,GC,G,C,C */
01671     ,{ 140, 10, 140, -50, 140} /* CG,GC,G,C,G */
01672     ,{ 150, 70, 150, 20, 150} /* CG,GC,G,C,U */
01673     }
01674     ,{{ 150, 10, 150, 80, 150} /* CG,GC,G,G,E */
01675     ,{ 30, -50, 30, -30, 30} /* CG,GC,G,G,A */
01676     ,{ 150, 10, 150, -40, 150} /* CG,GC,G,G,C */
01677     ,{ 80, -30, 10, 80, 10} /* CG,GC,G,G,G */
01678     ,{ 150, 10, 150, -40, 150} /* CG,GC,G,G,U */
01679     }
01680     ,{{ 150, 90, 150, 140, 150} /* CG,GC,G,U,E */
01681     ,{ 140, 10, 140, -50, 140} /* CG,GC,G,U,A */
01682     ,{ 150, 80, 150, -50, 150} /* CG,GC,G,U,C */
01683     ,{ 140, 10, 140, -50, 140} /* CG,GC,G,U,G */
01684     ,{ 140, 90, 70, 140, 70} /* CG,GC,G,U,U */
01685     }
01686     }
01687     ,{{{ 140, 130, 140, 130, 140} /* CG,GC,U,E,E */
01688     ,{ 140, 130, 140, 130, 140} /* CG,GC,U,E,A */
01689     ,{ 120, 110, 120, 110, 30} /* CG,GC,U,E,C */
01690     ,{ 110, 100, 110, 100, 70} /* CG,GC,U,E,G */
01691     ,{ 120, 100, 120, 100, 30} /* CG,GC,U,E,U */
01692     }
01693     ,{{ 140, 130, 140, 130, 140} /* CG,GC,U,A,E */
01694     ,{ 140, 130, 140, 130, 140} /* CG,GC,U,A,A */
01695     ,{ 120, 100, 120, 100, 30} /* CG,GC,U,A,C */
01696     ,{ 50, -70, 0, -70, 50} /* CG,GC,U,A,G */
01697     ,{ 120, 100, 120, 100, 30} /* CG,GC,U,A,U */
01698     }
01699     ,{{ 120, 100, 120, 100, 30} /* CG,GC,U,C,E */
01700     ,{ 110, 100, 110, 100, 30} /* CG,GC,U,C,A */
01701     ,{ 120, 100, 120, 100, 30} /* CG,GC,U,C,C */
01702     ,{ 110, 100, 110, 100, 20} /* CG,GC,U,C,G */
01703     ,{ 120, 100, 120, 100, 30} /* CG,GC,U,C,U */
01704     }
01705     ,{{ 140, 100, 120, 100, 140} /* CG,GC,U,G,E */
01706     ,{ 140, -10, 50, -10, 140} /* CG,GC,U,G,A */
01707     ,{ 120, 100, 120, 100, 30} /* CG,GC,U,G,C */
01708     ,{ 70, -40, -60, -40, 70} /* CG,GC,U,G,G */
01709     ,{ 120, 100, 120, 100, 30} /* CG,GC,U,G,U */
01710     }
01711     ,{{ 120, 110, 120, 110, 30} /* CG,GC,U,U,E */
01712     ,{ 110, 100, 110, 100, 20} /* CG,GC,U,U,A */
01713     ,{ 120, 110, 120, 110, 30} /* CG,GC,U,U,C */
01714     ,{ 110, 100, 110, 100, 20} /* CG,GC,U,U,G */
01715     ,{ 40, 30, 40, 30, -60} /* CG,GC,U,U,U */
01716     }
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01717     }
01718     }
01719     ,{{{ 300, 290, 300, 260, 300} /* CG, GU, E, E, E */
01720     , { 300, 270, 300, 260, 300} /* CG, GU, E, E, A */
01721     , { 270, 230, 270, 220, 270} /* CG, GU, E, E, C */
01722     , { 270, 230, 270, 220, 270} /* CG, GU, E, E, G */
01723     , { 290, 290, 270, 220, 270} /* CG, GU, E, E, U */
01724     }
01725     ,{{{ 300, 270, 300, 260, 300} /* CG, GU, E, A, E */
01726     , { 300, 270, 300, 260, 300} /* CG, GU, E, A, A */
01727     , { 270, 230, 270, 220, 270} /* CG, GU, E, A, C */
01728     , { 230, 150, 230, 140, 220} /* CG, GU, E, A, G */
01729     , { 270, 230, 270, 220, 270} /* CG, GU, E, A, U */
01730     }
01731     ,{{{ 270, 230, 270, 220, 270} /* CG, GU, E, C, E */
01732     , { 270, 230, 270, 220, 270} /* CG, GU, E, C, A */
01733     , { 270, 230, 270, 220, 270} /* CG, GU, E, C, C */
01734     , { 270, 230, 270, 220, 270} /* CG, GU, E, C, G */
01735     , { 270, 230, 270, 220, 270} /* CG, GU, E, C, U */
01736     }
01737     ,{{{ 270, 230, 270, 220, 270} /* CG, GU, E, G, E */
01738     , { 270, 190, 270, 180, 260} /* CG, GU, E, G, A */
01739     , { 270, 230, 270, 220, 270} /* CG, GU, E, G, C */
01740     , { 210, 130, 140, 210, 150} /* CG, GU, E, G, G */
01741     , { 270, 230, 270, 220, 270} /* CG, GU, E, G, U */
01742     }
01743     ,{{{ 290, 290, 270, 220, 270} /* CG, GU, E, U, E */
01744     , { 270, 230, 270, 220, 270} /* CG, GU, E, U, A */
01745     , { 270, 230, 270, 220, 270} /* CG, GU, E, U, C */
01746     , { 270, 230, 270, 220, 270} /* CG, GU, E, U, G */
01747     , { 290, 290, 270, 220, 270} /* CG, GU, E, U, U */
01748     }
01749     }
01750     ,{{{ 300, 290, 300, 190, 300} /* CG, GU, A, E, E */
01751     , { 300, 270, 300, 170, 300} /* CG, GU, A, E, A */
01752     , { 270, 230, 270, 190, 270} /* CG, GU, A, E, C */
01753     , { 270, 230, 270, 130, 270} /* CG, GU, A, E, G */
01754     , { 290, 290, 270, 190, 270} /* CG, GU, A, E, U */
01755     }
01756     ,{{{ 300, 270, 300, 170, 300} /* CG, GU, A, A, E */
01757     , { 300, 270, 300, 170, 300} /* CG, GU, A, A, A */
01758     , { 270, 230, 270, 130, 270} /* CG, GU, A, A, C */
01759     , { 190, 150, 190, 50, 190} /* CG, GU, A, A, G */
01760     , { 270, 230, 270, 130, 270} /* CG, GU, A, A, U */
01761     }
01762     ,{{{ 270, 230, 270, 190, 270} /* CG, GU, A, C, E */
01763     , { 270, 230, 270, 130, 270} /* CG, GU, A, C, A */
01764     , { 270, 230, 270, 190, 270} /* CG, GU, A, C, C */
01765     , { 270, 230, 270, 130, 270} /* CG, GU, A, C, G */
01766     , { 270, 230, 270, 190, 270} /* CG, GU, A, C, U */
01767     }
01768     ,{{{ 270, 230, 270, 130, 270} /* CG, GU, A, G, E */
01769     , { 230, 190, 230, 90, 230} /* CG, GU, A, G, A */
01770     , { 270, 230, 270, 130, 270} /* CG, GU, A, G, C */
01771     , { 140, 100, 140, 130, 140} /* CG, GU, A, G, G */
01772     , { 270, 230, 270, 130, 270} /* CG, GU, A, G, U */
01773     }
01774     ,{{{ 290, 290, 270, 190, 270} /* CG, GU, A, U, E */
01775     , { 270, 230, 270, 130, 270} /* CG, GU, A, U, A */
01776     , { 270, 230, 270, 190, 270} /* CG, GU, A, U, C */
01777     , { 270, 230, 270, 130, 270} /* CG, GU, A, U, G */
01778     , { 290, 290, 270, 130, 270} /* CG, GU, A, U, U */
01779     }
01780     }
01781     ,{{{ 290, 260, 290, 260, 270} /* CG, GU, C, E, E */
01782     , { 290, 260, 290, 260, 270} /* CG, GU, C, E, A */
01783     , { 250, 220, 250, 220, 240} /* CG, GU, C, E, C */
01784     , { 250, 220, 250, 220, 240} /* CG, GU, C, E, G */
01785     , { 250, 220, 250, 220, 240} /* CG, GU, C, E, U */
01786     }
01787     ,{{{ 290, 260, 290, 260, 270} /* CG, GU, C, A, E */
01788     , { 290, 260, 290, 260, 270} /* CG, GU, C, A, A */
01789     , { 250, 220, 250, 220, 240} /* CG, GU, C, A, C */
01790     , { 230, 140, 230, 140, 220} /* CG, GU, C, A, G */
01791     , { 250, 220, 250, 220, 240} /* CG, GU, C, A, U */
01792     }
01793     ,{{{ 250, 220, 250, 220, 240} /* CG, GU, C, C, E */
01794     , { 250, 220, 250, 220, 240} /* CG, GU, C, C, A */
01795     , { 250, 220, 250, 220, 240} /* CG, GU, C, C, C */
01796     , { 250, 220, 250, 220, 240} /* CG, GU, C, C, G */
01797     , { 250, 220, 250, 220, 240} /* CG, GU, C, C, U */
01798     }
01799     ,{{{ 270, 220, 270, 220, 260} /* CG, GU, C, G, E */
01800     , { 270, 180, 270, 180, 260} /* CG, GU, C, G, A */
01801     , { 250, 220, 250, 220, 240} /* CG, GU, C, G, C */
01802     , { 120, 90, 120, 90, 110} /* CG, GU, C, G, G */
01803     , { 250, 220, 250, 220, 240} /* CG, GU, C, G, U */

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01804     }
01805     ,{{    250,    220,    250,    220,    240} /* CG, GU, C, U, E */
01806     ,{{    250,    220,    250,    220,    240} /* CG, GU, C, U, A */
01807     ,{{    250,    220,    250,    220,    240} /* CG, GU, C, U, C */
01808     ,{{    250,    220,    250,    220,    240} /* CG, GU, C, U, G */
01809     ,{{    250,    220,    250,    220,    240} /* CG, GU, C, U, U */
01810     }
01811     }
01812     ,{{{    300,    190,    300,    210,    300} /* CG, GU, G, E, E */
01813     ,{{    300,    170,    300,    170,    300} /* CG, GU, G, E, A */
01814     ,{{    270,    190,    270,    80,    270} /* CG, GU, G, E, C */
01815     ,{{    270,    130,    270,    210,    270} /* CG, GU, G, E, G */
01816     ,{{    270,    190,    270,    210,    270} /* CG, GU, G, E, U */
01817     }
01818     ,{{{    300,    170,    300,    130,    300} /* CG, GU, G, A, E */
01819     ,{{    300,    170,    300,    110,    300} /* CG, GU, G, A, A */
01820     ,{{    270,    130,    270,    80,    270} /* CG, GU, G, A, C */
01821     ,{{    190,    50,    190,    130,    190} /* CG, GU, G, A, G */
01822     ,{{    270,    130,    270,    80,    270} /* CG, GU, G, A, U */
01823     }
01824     ,{{{    270,    190,    270,    80,    270} /* CG, GU, G, C, E */
01825     ,{{    270,    130,    270,    80,    270} /* CG, GU, G, C, A */
01826     ,{{    270,    190,    270,    80,    270} /* CG, GU, G, C, C */
01827     ,{{    270,    130,    270,    80,    270} /* CG, GU, G, C, G */
01828     ,{{    270,    190,    270,    80,    270} /* CG, GU, G, C, U */
01829     }
01830     ,{{{    270,    130,    270,    210,    270} /* CG, GU, G, G, E */
01831     ,{{    230,    90,    230,    170,    230} /* CG, GU, G, G, A */
01832     ,{{    270,    130,    270,    80,    270} /* CG, GU, G, G, C */
01833     ,{{    210,    130,    140,    210,    140} /* CG, GU, G, G, G */
01834     ,{{    270,    130,    270,    80,    270} /* CG, GU, G, G, U */
01835     }
01836     ,{{{    270,    190,    270,    210,    270} /* CG, GU, G, U, E */
01837     ,{{    270,    130,    270,    80,    270} /* CG, GU, G, U, A */
01838     ,{{    270,    190,    270,    80,    270} /* CG, GU, G, U, C */
01839     ,{{    270,    130,    270,    80,    270} /* CG, GU, G, U, G */
01840     ,{{    270,    130,    270,    210,    270} /* CG, GU, G, U, U */
01841     }
01842     }
01843     ,{{{    270,    260,    270,    260,    240} /* CG, GU, U, E, E */
01844     ,{{    270,    260,    270,    260,    240} /* CG, GU, U, E, A */
01845     ,{{    240,    220,    240,    150} /* CG, GU, U, E, C */
01846     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, E, G */
01847     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, E, U */
01848     }
01849     ,{{{    270,    260,    270,    260,    240} /* CG, GU, U, A, E */
01850     ,{{    270,    260,    270,    260,    240} /* CG, GU, U, A, A */
01851     ,{{    240,    220,    240,    150} /* CG, GU, U, A, C */
01852     ,{{    220,    140,    220,    140,    70} /* CG, GU, U, A, G */
01853     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, A, U */
01854     }
01855     ,{{{    240,    220,    240,    220,    150} /* CG, GU, U, C, E */
01856     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, C, A */
01857     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, C, C */
01858     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, C, G */
01859     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, C, U */
01860     }
01861     ,{{{    260,    220,    260,    220,    150} /* CG, GU, U, G, E */
01862     ,{{    260,    180,    260,    180,    110} /* CG, GU, U, G, A */
01863     ,{{    240,    220,    240,    150} /* CG, GU, U, G, C */
01864     ,{{    150,    90,    110,    90,    150} /* CG, GU, U, G, G */
01865     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, G, U */
01866     }
01867     ,{{{    240,    220,    240,    220,    150} /* CG, GU, U, U, E */
01868     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, U, A */
01869     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, U, C */
01870     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, U, G */
01871     ,{{    240,    220,    240,    220,    150} /* CG, GU, U, U, U */
01872     }
01873     }
01874     }
01875     ,{{{    310,    260,    310,    220,    300} /* CG, UG, E, E, E */
01876     ,{{    310,    230,    310,    220,    300} /* CG, UG, E, E, A */
01877     ,{{    240,    200,    240,    190,    240} /* CG, UG, E, E, C */
01878     ,{{    240,    200,    240,    190,    240} /* CG, UG, E, E, G */
01879     ,{{    260,    260,    240,    190,    240} /* CG, UG, E, E, U */
01880     }
01881     ,{{{    240,    200,    240,    190,    240} /* CG, UG, E, A, E */
01882     ,{{    200,    160,    200,    160,    200} /* CG, UG, E, A, A */
01883     ,{{    240,    200,    240,    190,    240} /* CG, UG, E, A, C */
01884     ,{{    150,    60,    150,    60,    130} /* CG, UG, E, A, G */
01885     ,{{    240,    200,    240,    190,    240} /* CG, UG, E, A, U */
01886     }
01887     ,{{{    240,    200,    240,    190,    240} /* CG, UG, E, C, E */
01888     ,{{    240,    200,    240,    190,    240} /* CG, UG, E, C, A */
01889     ,{{    240,    200,    240,    190,    240} /* CG, UG, E, C, C */
01890     ,{{    240,    200,    240,    190,    240} /* CG, UG, E, C, G */
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01891      , {      240,      200,      240,      190,      240} /* CG,UG,E,C,U */
01892      }
01893      , {{      310,      230,      310,      220,      300} /* CG,UG,E,G,E */
01894      , {      310,      230,      310,      220,      300} /* CG,UG,E,G,A */
01895      , {      240,      200,      240,      190,      240} /* CG,UG,E,G,C */
01896      , {      180,      100,      110,      120,      120} /* CG,UG,E,G,G */
01897      , {      240,      200,      240,      190,      240} /* CG,UG,E,G,U */
01898      }
01899      , {{      260,      260,      240,      190,      240} /* CG,UG,E,U,E */
01900      , {      240,      200,      240,      190,      240} /* CG,UG,E,U,A */
01901      , {      240,      200,      240,      190,      240} /* CG,UG,E,U,C */
01902      , {      240,      200,      240,      190,      240} /* CG,UG,E,U,G */
01903      , {      260,      260,      240,      190,      240} /* CG,UG,E,U,U */
01904      }
01905      }
01906      , {{{      270,      260,      270,      160,      270} /* CG,UG,A,E,E */
01907      , {      270,      230,      270,      130,      270} /* CG,UG,A,E,A */
01908      , {      240,      200,      240,      160,      240} /* CG,UG,A,E,C */
01909      , {      240,      200,      240,      100,      240} /* CG,UG,A,E,G */
01910      , {      260,      260,      240,      160,      240} /* CG,UG,A,E,U */
01911      }
01912      , {{      240,      200,      240,      100,      240} /* CG,UG,A,A,E */
01913      , {      200,      160,      200,      70,      200} /* CG,UG,A,A,A */
01914      , {      240,      200,      240,      100,      240} /* CG,UG,A,A,C */
01915      , {      100,      60,      100,      -30,      100} /* CG,UG,A,A,G */
01916      , {      240,      200,      240,      100,      240} /* CG,UG,A,A,U */
01917      }
01918      , {{      240,      200,      240,      160,      240} /* CG,UG,A,C,E */
01919      , {      240,      200,      240,      100,      240} /* CG,UG,A,C,A */
01920      , {      240,      200,      240,      160,      240} /* CG,UG,A,C,C */
01921      , {      240,      200,      240,      100,      240} /* CG,UG,A,C,G */
01922      , {      240,      200,      240,      160,      240} /* CG,UG,A,C,U */
01923      }
01924      , {{      270,      230,      270,      130,      270} /* CG,UG,A,G,E */
01925      , {      270,      230,      270,      130,      270} /* CG,UG,A,G,A */
01926      , {      240,      200,      240,      100,      240} /* CG,UG,A,G,C */
01927      , {      110,      70,      110,      100,      110} /* CG,UG,A,G,G */
01928      , {      240,      200,      240,      100,      240} /* CG,UG,A,G,U */
01929      }
01930      , {{      260,      260,      240,      160,      240} /* CG,UG,A,U,E */
01931      , {      240,      200,      240,      100,      240} /* CG,UG,A,U,A */
01932      , {      240,      200,      240,      160,      240} /* CG,UG,A,U,C */
01933      , {      240,      200,      240,      100,      240} /* CG,UG,A,U,G */
01934      , {      260,      260,      240,      100,      240} /* CG,UG,A,U,U */
01935      }
01936      }
01937      , {{{      310,      220,      310,      220,      300} /* CG,UG,C,E,E */
01938      , {      310,      220,      310,      220,      300} /* CG,UG,C,E,A */
01939      , {      220,      190,      220,      190,      210} /* CG,UG,C,E,C */
01940      , {      220,      190,      220,      190,      210} /* CG,UG,C,E,G */
01941      , {      220,      190,      220,      190,      210} /* CG,UG,C,E,U */
01942      }
01943      , {{      220,      190,      220,      190,      210} /* CG,UG,C,A,E */
01944      , {      190,      160,      190,      160,      170} /* CG,UG,C,A,A */
01945      , {      220,      190,      220,      190,      210} /* CG,UG,C,A,C */
01946      , {      150,      60,      150,      60,      130} /* CG,UG,C,A,G */
01947      , {      220,      190,      220,      190,      210} /* CG,UG,C,A,U */
01948      }
01949      , {{      220,      190,      220,      190,      210} /* CG,UG,C,C,E */
01950      , {      220,      190,      220,      190,      210} /* CG,UG,C,C,A */
01951      , {      220,      190,      220,      190,      210} /* CG,UG,C,C,C */
01952      , {      220,      190,      220,      190,      210} /* CG,UG,C,C,G */
01953      , {      220,      190,      220,      190,      210} /* CG,UG,C,C,U */
01954      }
01955      , {{      310,      220,      310,      220,      300} /* CG,UG,C,G,E */
01956      , {      310,      220,      310,      220,      300} /* CG,UG,C,G,A */
01957      , {      220,      190,      220,      190,      210} /* CG,UG,C,G,C */
01958      , {      90,      60,      90,      60,      80} /* CG,UG,C,G,G */
01959      , {      220,      190,      220,      190,      210} /* CG,UG,C,G,U */
01960      }
01961      , {{      220,      190,      220,      190,      210} /* CG,UG,C,U,E */
01962      , {      220,      190,      220,      190,      210} /* CG,UG,C,U,A */
01963      , {      220,      190,      220,      190,      210} /* CG,UG,C,U,C */
01964      , {      220,      190,      220,      190,      210} /* CG,UG,C,U,G */
01965      , {      220,      190,      220,      190,      210} /* CG,UG,C,U,U */
01966      }
01967      }
01968      , {{{      270,      160,      270,      210,      270} /* CG,UG,G,E,E */
01969      , {      270,      130,      270,      210,      270} /* CG,UG,G,E,A */
01970      , {      240,      160,      240,      50,      240} /* CG,UG,G,E,C */
01971      , {      240,      100,      240,      180,      240} /* CG,UG,G,E,G */
01972      , {      240,      160,      240,      180,      240} /* CG,UG,G,E,U */
01973      }
01974      , {{      240,      100,      240,      50,      240} /* CG,UG,G,A,E */
01975      , {      200,      70,      200,      10,      200} /* CG,UG,G,A,A */
01976      , {      240,      100,      240,      50,      240} /* CG,UG,G,A,C */
01977      , {      100,      -30,      100,      40,      100} /* CG,UG,G,A,G */

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01978 , { 240, 100, 240, 50, 240} /* CG,UG,G,A,U */
01979 }
01980 , { { 240, 160, 240, 50, 240} /* CG,UG,G,C,E */
01981 , { 240, 100, 240, 50, 240} /* CG,UG,G,C,A */
01982 , { 240, 160, 240, 50, 240} /* CG,UG,G,C,C */
01983 , { 240, 100, 240, 50, 240} /* CG,UG,G,C,G */
01984 , { 240, 160, 240, 50, 240} /* CG,UG,G,C,U */
01985 }
01986 , { { 270, 130, 270, 210, 270} /* CG,UG,G,G,E */
01987 , { 270, 130, 270, 210, 270} /* CG,UG,G,G,A */
01988 , { 240, 100, 240, 50, 240} /* CG,UG,G,G,C */
01989 , { 180, 100, 110, 180, 110} /* CG,UG,G,G,G */
01990 , { 240, 100, 240, 50, 240} /* CG,UG,G,G,U */
01991 }
01992 , { { 240, 160, 240, 180, 240} /* CG,UG,G,U,E */
01993 , { 240, 100, 240, 50, 240} /* CG,UG,G,U,A */
01994 , { 240, 160, 240, 50, 240} /* CG,UG,G,U,C */
01995 , { 240, 100, 240, 50, 240} /* CG,UG,G,U,G */
01996 , { 240, 100, 240, 180, 240} /* CG,UG,G,U,U */
01997 }
01998 }
01999 , { { { 300, 220, 300, 220, 150} /* CG,UG,U,E,E */
02000 , { 300, 220, 300, 220, 150} /* CG,UG,U,E,A */
02001 , { 210, 190, 210, 190, 120} /* CG,UG,U,E,C */
02002 , { 210, 190, 210, 190, 120} /* CG,UG,U,E,G */
02003 , { 210, 190, 210, 190, 120} /* CG,UG,U,E,U */
02004 }
02005 , { { 210, 190, 210, 190, 140} /* CG,UG,U,A,E */
02006 , { 170, 160, 170, 160, 140} /* CG,UG,U,A,A */
02007 , { 210, 190, 210, 190, 120} /* CG,UG,U,A,C */
02008 , { 130, 60, 130, 60, -10} /* CG,UG,U,A,G */
02009 , { 210, 190, 210, 190, 120} /* CG,UG,U,A,U */
02010 }
02011 , { { 210, 190, 210, 190, 120} /* CG,UG,U,C,E */
02012 , { 210, 190, 210, 190, 120} /* CG,UG,U,C,A */
02013 , { 210, 190, 210, 190, 120} /* CG,UG,U,C,C */
02014 , { 210, 190, 210, 190, 120} /* CG,UG,U,C,G */
02015 , { 210, 190, 210, 190, 120} /* CG,UG,U,C,U */
02016 }
02017 , { { 300, 220, 300, 220, 150} /* CG,UG,U,G,E */
02018 , { 300, 220, 300, 220, 150} /* CG,UG,U,G,A */
02019 , { 210, 190, 210, 190, 120} /* CG,UG,U,G,C */
02020 , { 120, 60, 80, 60, 120} /* CG,UG,U,G,G */
02021 , { 210, 190, 210, 190, 120} /* CG,UG,U,G,U */
02022 }
02023 , { { 210, 190, 210, 190, 120} /* CG,UG,U,U,E */
02024 , { 210, 190, 210, 190, 120} /* CG,UG,U,U,A */
02025 , { 210, 190, 210, 190, 120} /* CG,UG,U,U,C */
02026 , { 210, 190, 210, 190, 120} /* CG,UG,U,U,G */
02027 , { 210, 190, 210, 190, 120} /* CG,UG,U,U,U */
02028 }
02029 }
02030 }
02031 , { { { 240, 200, 240, 190, 240} /* CG,AU,E,E,E */
02032 , { 240, 200, 240, 190, 240} /* CG,AU,E,E,A */
02033 , { 220, 180, 220, 170, 220} /* CG,AU,E,E,C */
02034 , { 220, 180, 220, 180, 220} /* CG,AU,E,E,G */
02035 , { 220, 180, 220, 170, 220} /* CG,AU,E,E,U */
02036 }
02037 , { { 240, 200, 240, 190, 240} /* CG,AU,E,A,E */
02038 , { 240, 200, 240, 190, 240} /* CG,AU,E,A,A */
02039 , { 210, 170, 210, 170, 210} /* CG,AU,E,A,C */
02040 , { 160, 70, 160, 70, 140} /* CG,AU,E,A,G */
02041 , { 210, 170, 210, 170, 210} /* CG,AU,E,A,U */
02042 }
02043 , { { 220, 180, 220, 180, 220} /* CG,AU,E,C,E */
02044 , { 220, 180, 220, 180, 220} /* CG,AU,E,C,A */
02045 , { 220, 180, 220, 170, 220} /* CG,AU,E,C,C */
02046 , { 220, 180, 220, 180, 220} /* CG,AU,E,C,G */
02047 , { 220, 180, 220, 170, 220} /* CG,AU,E,C,U */
02048 }
02049 , { { 230, 170, 230, 170, 210} /* CG,AU,E,G,E */
02050 , { 230, 140, 230, 140, 210} /* CG,AU,E,G,A */
02051 , { 210, 170, 210, 170, 210} /* CG,AU,E,G,C */
02052 , { 130, 60, 60, 130, 70} /* CG,AU,E,G,G */
02053 , { 210, 170, 210, 170, 210} /* CG,AU,E,G,U */
02054 }
02055 , { { 220, 180, 220, 180, 220} /* CG,AU,E,U,E */
02056 , { 220, 180, 220, 180, 220} /* CG,AU,E,U,A */
02057 , { 220, 180, 220, 170, 220} /* CG,AU,E,U,C */
02058 , { 220, 180, 220, 180, 220} /* CG,AU,E,U,G */
02059 , { 150, 150, 130, 80, 130} /* CG,AU,E,U,U */
02060 }
02061 }
02062 , { { { 240, 200, 240, 140, 240} /* CG,AU,A,E,E */
02063 , { 240, 200, 240, 100, 240} /* CG,AU,A,E,A */
02064 , { 220, 180, 220, 140, 220} /* CG,AU,A,E,C */
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02065      , {      220,      180,      220,      90,      220} /* CG,AU,A,E,G */
02066      , {      220,      180,      220,     140,      220} /* CG,AU,A,E,U */
02067      }
02068      , {{      240,      200,      240,     100,      240} /* CG,AU,A,A,E */
02069      , {      240,      200,      240,     100,      240} /* CG,AU,A,A,A */
02070      , {      210,      170,      210,      80,      210} /* CG,AU,A,A,C */
02071      , {      110,       70,      110,     -20,      110} /* CG,AU,A,A,G */
02072      , {      210,      170,      210,      80,      210} /* CG,AU,A,A,U */
02073      }
02074      , {{      220,      180,      220,     140,      220} /* CG,AU,A,C,E */
02075      , {      220,      180,      220,      90,      220} /* CG,AU,A,C,A */
02076      , {      220,      180,      220,     140,      220} /* CG,AU,A,C,C */
02077      , {      220,      180,      220,      90,      220} /* CG,AU,A,C,G */
02078      , {      220,      180,      220,     140,      220} /* CG,AU,A,C,U */
02079      }
02080      , {{      210,      170,      210,      80,      210} /* CG,AU,A,G,E */
02081      , {      180,      140,      180,      50,      180} /* CG,AU,A,G,A */
02082      , {      210,      170,      210,      80,      210} /* CG,AU,A,G,C */
02083      , {       60,       20,       60,      60,      60} /* CG,AU,A,G,G */
02084      , {      210,      170,      210,      80,      210} /* CG,AU,A,G,U */
02085      }
02086      , {{      220,      180,      220,     140,      220} /* CG,AU,A,U,E */
02087      , {      220,      180,      220,      90,      220} /* CG,AU,A,U,A */
02088      , {      220,      180,      220,     140,      220} /* CG,AU,A,U,C */
02089      , {      220,      180,      220,      90,      220} /* CG,AU,A,U,G */
02090      , {      150,      150,      130,      0,      130} /* CG,AU,A,U,U */
02091      }
02092      }
02093      , {{{      230,      190,      230,      190,      210} /* CG,AU,C,E,E */
02094      , {      230,      190,      230,      190,      210} /* CG,AU,C,E,A */
02095      , {      200,      170,      200,      170,      190} /* CG,AU,C,E,C */
02096      , {      210,      180,      210,      180,      190} /* CG,AU,C,E,G */
02097      , {      200,      170,      200,      170,      190} /* CG,AU,C,E,U */
02098      }
02099      , {{      220,      190,      220,      190,      210} /* CG,AU,C,A,E */
02100      , {      220,      190,      220,      190,      210} /* CG,AU,C,A,A */
02101      , {      200,      170,      200,      170,      180} /* CG,AU,C,A,C */
02102      , {      160,       70,      160,      70,      140} /* CG,AU,C,A,G */
02103      , {      200,      170,      200,      170,      180} /* CG,AU,C,A,U */
02104      }
02105      , {{      210,      180,      210,      180,      190} /* CG,AU,C,C,E */
02106      , {      210,      180,      210,      180,      190} /* CG,AU,C,C,A */
02107      , {      200,      170,      200,      170,      190} /* CG,AU,C,C,C */
02108      , {      210,      180,      210,      180,      190} /* CG,AU,C,C,G */
02109      , {      200,      170,      200,      170,      190} /* CG,AU,C,C,U */
02110      }
02111      , {{      230,      170,      230,      170,      210} /* CG,AU,C,G,E */
02112      , {      230,      140,      230,      140,      210} /* CG,AU,C,G,A */
02113      , {      200,      170,      200,      170,      180} /* CG,AU,C,G,C */
02114      , {       50,       20,       50,      20,      30} /* CG,AU,C,G,G */
02115      , {      200,      170,      200,      170,      180} /* CG,AU,C,G,U */
02116      }
02117      , {{      210,      180,      210,      180,      190} /* CG,AU,C,U,E */
02118      , {      210,      180,      210,      180,      190} /* CG,AU,C,U,A */
02119      , {      200,      170,      200,      170,      190} /* CG,AU,C,U,C */
02120      , {      210,      180,      210,      180,      190} /* CG,AU,C,U,G */
02121      , {      110,      80,      110,      80,      100} /* CG,AU,C,U,U */
02122      }
02123      }
02124      , {{{      240,      140,      240,      130,      240} /* CG,AU,G,E,E */
02125      , {      240,      100,      240,      120,      240} /* CG,AU,G,E,A */
02126      , {      220,      140,      220,      30,      220} /* CG,AU,G,E,C */
02127      , {      220,       90,      220,     130,      220} /* CG,AU,G,E,G */
02128      , {      220,      140,      220,      70,      220} /* CG,AU,G,E,U */
02129      }
02130      , {{      240,      100,      240,      50,      240} /* CG,AU,G,A,E */
02131      , {      240,      100,      240,      50,      240} /* CG,AU,G,A,A */
02132      , {      210,      80,      210,      20,      210} /* CG,AU,G,A,C */
02133      , {      110,     -20,      110,      50,      110} /* CG,AU,G,A,G */
02134      , {      210,      80,      210,      20,      210} /* CG,AU,G,A,U */
02135      }
02136      , {{      220,      140,      220,      30,      220} /* CG,AU,G,C,E */
02137      , {      220,       90,      220,      30,      220} /* CG,AU,G,C,A */
02138      , {      220,      140,      220,      30,      220} /* CG,AU,G,C,C */
02139      , {      220,       90,      220,      30,      220} /* CG,AU,G,C,G */
02140      , {      220,      140,      220,      30,      220} /* CG,AU,G,C,U */
02141      }
02142      , {{      210,      80,      210,     130,      210} /* CG,AU,G,G,E */
02143      , {      180,      50,      180,     120,      180} /* CG,AU,G,G,A */
02144      , {      210,      80,      210,      20,      210} /* CG,AU,G,G,C */
02145      , {      130,      60,      130,     130,      60} /* CG,AU,G,G,G */
02146      , {      210,      80,      210,      20,      210} /* CG,AU,G,G,U */
02147      }
02148      , {{      220,      140,      220,      70,      220} /* CG,AU,G,U,E */
02149      , {      220,       90,      220,      30,      220} /* CG,AU,G,U,A */
02150      , {      220,      140,      220,      30,      220} /* CG,AU,G,U,C */
02151      , {      220,       90,      220,      30,      220} /* CG,AU,G,U,G */

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02152     , { 130,      0,    130,    70,    130} /* CG,AU,G,U,U */
02153     }
02154     }
02155     ,{{{ 210,    190,    210,    190,    180} /* CG,AU,U,E,E */
02156     , { 210,    190,    210,    190,    180} /* CG,AU,U,E,A */
02157     , { 190,    170,    190,    170,    100} /* CG,AU,U,E,C */
02158     , { 190,    180,    190,    180,    100} /* CG,AU,U,E,G */
02159     , { 190,    170,    190,    170,    100} /* CG,AU,U,E,U */
02160     }
02161     ,{{{ 210,    190,    210,    190,    180} /* CG,AU,U,A,E */
02162     , { 210,    190,    210,    190,    180} /* CG,AU,U,A,A */
02163     , { 180,    170,    180,    170,    90} /* CG,AU,U,A,C */
02164     , { 140,    70,    140,    70,    0} /* CG,AU,U,A,G */
02165     , { 180,    170,    180,    170,    90} /* CG,AU,U,A,U */
02166     }
02167     ,{{{ 190,    180,    190,    180,    100} /* CG,AU,U,C,E */
02168     , { 190,    180,    190,    180,    100} /* CG,AU,U,C,A */
02169     , { 190,    170,    190,    170,    100} /* CG,AU,U,C,C */
02170     , { 190,    180,    190,    180,    100} /* CG,AU,U,C,G */
02171     , { 190,    170,    190,    170,    100} /* CG,AU,U,C,U */
02172     }
02173     ,{{{ 210,    170,    210,    170,    90} /* CG,AU,U,G,E */
02174     , { 210,    140,    210,    140,    60} /* CG,AU,U,G,A */
02175     , { 180,    170,    180,    170,    90} /* CG,AU,U,G,C */
02176     , { 70,    20,    30,    20,    70} /* CG,AU,U,G,G */
02177     , { 180,    170,    180,    170,    90} /* CG,AU,U,G,U */
02178     }
02179     ,{{{ 190,    180,    190,    180,    100} /* CG,AU,U,U,E */
02180     , { 190,    180,    190,    180,    100} /* CG,AU,U,U,A */
02181     , { 190,    170,    190,    170,    100} /* CG,AU,U,U,C */
02182     , { 190,    180,    190,    180,    100} /* CG,AU,U,U,G */
02183     , { 100,    80,    100,    80,    10} /* CG,AU,U,U,U */
02184     }
02185     }
02186     }
02187     ,{{{ 240,    200,    240,    190,    240} /* CG,UA,E,E,E */
02188     , { 240,    200,    240,    190,    240} /* CG,UA,E,E,A */
02189     , { 240,    200,    240,    190,    240} /* CG,UA,E,E,C */
02190     , { 240,    200,    240,    190,    240} /* CG,UA,E,E,G */
02191     , { 240,    200,    240,    190,    240} /* CG,UA,E,E,U */
02192     }
02193     ,{{{ 240,    200,    240,    190,    240} /* CG,UA,E,A,E */
02194     , { 240,    200,    240,    190,    240} /* CG,UA,E,A,A */
02195     , { 190,    150,    190,    150,    190} /* CG,UA,E,A,C */
02196     , { 180,    90,    180,    90,    160} /* CG,UA,E,A,G */
02197     , { 190,    150,    190,    150,    190} /* CG,UA,E,A,U */
02198     }
02199     ,{{{ 240,    200,    240,    190,    240} /* CG,UA,E,C,E */
02200     , { 240,    200,    240,    190,    240} /* CG,UA,E,C,A */
02201     , { 240,    200,    240,    190,    240} /* CG,UA,E,C,C */
02202     , { 240,    200,    240,    190,    240} /* CG,UA,E,C,G */
02203     , { 240,    200,    240,    190,    240} /* CG,UA,E,C,U */
02204     }
02205     ,{{{ 190,    150,    190,    150,    190} /* CG,UA,E,G,E */
02206     , { 190,    100,    190,    100,    170} /* CG,UA,E,G,A */
02207     , { 190,    150,    190,    150,    190} /* CG,UA,E,G,C */
02208     , { 150,    80,    80,    150,    90} /* CG,UA,E,G,G */
02209     , { 190,    150,    190,    150,    190} /* CG,UA,E,G,U */
02210     }
02211     ,{{{ 240,    200,    240,    190,    240} /* CG,UA,E,U,E */
02212     , { 240,    200,    240,    190,    240} /* CG,UA,E,U,A */
02213     , { 210,    170,    210,    160,    210} /* CG,UA,E,U,C */
02214     , { 240,    200,    240,    190,    240} /* CG,UA,E,U,G */
02215     , { 170,    170,    150,    110,    150} /* CG,UA,E,U,U */
02216     }
02217     }
02218     ,{{{ 240,    200,    240,    160,    240} /* CG,UA,A,E,E */
02219     , { 240,    200,    240,    100,    240} /* CG,UA,A,E,A */
02220     , { 240,    200,    240,    160,    240} /* CG,UA,A,E,C */
02221     , { 240,    200,    240,    100,    240} /* CG,UA,A,E,G */
02222     , { 240,    200,    240,    160,    240} /* CG,UA,A,E,U */
02223     }
02224     ,{{{ 240,    200,    240,    100,    240} /* CG,UA,A,A,E */
02225     , { 240,    200,    240,    100,    240} /* CG,UA,A,A,A */
02226     , { 190,    150,    190,    60,    190} /* CG,UA,A,A,C */
02227     , { 130,    90,    130,    0,    130} /* CG,UA,A,A,G */
02228     , { 190,    150,    190,    60,    190} /* CG,UA,A,A,U */
02229     }
02230     ,{{{ 240,    200,    240,    160,    240} /* CG,UA,A,C,E */
02231     , { 240,    200,    240,    100,    240} /* CG,UA,A,C,A */
02232     , { 240,    200,    240,    160,    240} /* CG,UA,A,C,C */
02233     , { 240,    200,    240,    100,    240} /* CG,UA,A,C,G */
02234     , { 240,    200,    240,    160,    240} /* CG,UA,A,C,U */
02235     }
02236     ,{{{ 190,    150,    190,    80,    190} /* CG,UA,A,G,E */
02237     , { 140,    100,    140,    10,    140} /* CG,UA,A,G,A */
02238     , { 190,    150,    190,    60,    190} /* CG,UA,A,G,C */

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02239 , { 80, 40, 80, 80, 80} /* CG,UA,A,G,G */
02240 , { 190, 150, 190, 60, 190} /* CG,UA,A,G,U */
02241 }
02242 , {{ 240, 200, 240, 130, 240} /* CG,UA,A,U,E */
02243 , { 240, 200, 240, 100, 240} /* CG,UA,A,U,A */
02244 , { 210, 170, 210, 130, 210} /* CG,UA,A,U,C */
02245 , { 240, 200, 240, 100, 240} /* CG,UA,A,U,G */
02246 , { 170, 170, 150, 20, 150} /* CG,UA,A,U,U */
02247 }
02248 }
02249 , {{{ 220, 190, 220, 190, 210} /* CG,UA,C,E,E */
02250 , { 220, 190, 220, 190, 210} /* CG,UA,C,E,A */
02251 , { 220, 190, 220, 190, 210} /* CG,UA,C,E,C */
02252 , { 220, 190, 220, 190, 210} /* CG,UA,C,E,G */
02253 , { 220, 190, 220, 190, 210} /* CG,UA,C,E,U */
02254 }
02255 , {{ 220, 190, 220, 190, 210} /* CG,UA,C,A,E */
02256 , { 220, 190, 220, 190, 210} /* CG,UA,C,A,A */
02257 , { 180, 150, 180, 150, 160} /* CG,UA,C,A,C */
02258 , { 180, 90, 180, 90, 160} /* CG,UA,C,A,G */
02259 , { 180, 150, 180, 150, 160} /* CG,UA,C,A,U */
02260 }
02261 , {{ 220, 190, 220, 190, 210} /* CG,UA,C,C,E */
02262 , { 220, 190, 220, 190, 210} /* CG,UA,C,C,A */
02263 , { 220, 190, 220, 190, 210} /* CG,UA,C,C,C */
02264 , { 220, 190, 220, 190, 210} /* CG,UA,C,C,G */
02265 , { 220, 190, 220, 190, 210} /* CG,UA,C,C,U */
02266 }
02267 , {{ 190, 150, 190, 150, 170} /* CG,UA,C,G,E */
02268 , { 190, 100, 190, 100, 170} /* CG,UA,C,G,A */
02269 , { 180, 150, 180, 150, 160} /* CG,UA,C,G,C */
02270 , { 70, 40, 70, 40, 50} /* CG,UA,C,G,G */
02271 , { 180, 150, 180, 150, 160} /* CG,UA,C,G,U */
02272 }
02273 , {{ 220, 190, 220, 190, 210} /* CG,UA,C,U,E */
02274 , { 220, 190, 220, 190, 210} /* CG,UA,C,U,A */
02275 , { 190, 160, 190, 160, 180} /* CG,UA,C,U,C */
02276 , { 220, 190, 220, 190, 210} /* CG,UA,C,U,G */
02277 , { 140, 110, 140, 110, 120} /* CG,UA,C,U,U */
02278 }
02279 }
02280 , {{{ 240, 160, 240, 150, 240} /* CG,UA,G,E,E */
02281 , { 240, 100, 240, 80, 240} /* CG,UA,G,E,A */
02282 , { 240, 160, 240, 50, 240} /* CG,UA,G,E,C */
02283 , { 240, 100, 240, 150, 240} /* CG,UA,G,E,G */
02284 , { 240, 160, 240, 90, 240} /* CG,UA,G,E,U */
02285 }
02286 , {{ 240, 100, 240, 70, 240} /* CG,UA,G,A,E */
02287 , { 240, 100, 240, 50, 240} /* CG,UA,G,A,A */
02288 , { 190, 60, 190, 0, 190} /* CG,UA,G,A,C */
02289 , { 130, 0, 130, 70, 130} /* CG,UA,G,A,G */
02290 , { 190, 60, 190, 0, 190} /* CG,UA,G,A,U */
02291 }
02292 , {{ 240, 160, 240, 50, 240} /* CG,UA,G,C,E */
02293 , { 240, 100, 240, 50, 240} /* CG,UA,G,C,A */
02294 , { 240, 160, 240, 50, 240} /* CG,UA,G,C,C */
02295 , { 240, 100, 240, 50, 240} /* CG,UA,G,C,G */
02296 , { 240, 160, 240, 50, 240} /* CG,UA,G,C,U */
02297 }
02298 , {{ 190, 80, 190, 150, 190} /* CG,UA,G,G,E */
02299 , { 140, 10, 140, 80, 140} /* CG,UA,G,G,A */
02300 , { 190, 60, 190, 0, 190} /* CG,UA,G,G,C */
02301 , { 150, 80, 80, 150, 80} /* CG,UA,G,G,G */
02302 , { 190, 60, 190, 0, 190} /* CG,UA,G,G,U */
02303 }
02304 , {{ 240, 130, 240, 90, 240} /* CG,UA,G,U,E */
02305 , { 240, 100, 240, 50, 240} /* CG,UA,G,U,A */
02306 , { 210, 130, 210, 20, 210} /* CG,UA,G,U,C */
02307 , { 240, 100, 240, 50, 240} /* CG,UA,G,U,G */
02308 , { 150, 20, 150, 90, 150} /* CG,UA,G,U,U */
02309 }
02310 }
02311 , {{{ 210, 190, 210, 190, 180} /* CG,UA,U,E,E */
02312 , { 210, 190, 210, 190, 180} /* CG,UA,U,E,A */
02313 , { 210, 190, 210, 190, 120} /* CG,UA,U,E,C */
02314 , { 210, 190, 210, 190, 120} /* CG,UA,U,E,G */
02315 , { 210, 190, 210, 190, 120} /* CG,UA,U,E,U */
02316 }
02317 , {{ 210, 190, 210, 190, 180} /* CG,UA,U,A,E */
02318 , { 210, 190, 210, 190, 180} /* CG,UA,U,A,A */
02319 , { 160, 150, 160, 150, 70} /* CG,UA,U,A,C */
02320 , { 160, 90, 160, 90, 10} /* CG,UA,U,A,G */
02321 , { 160, 150, 160, 150, 70} /* CG,UA,U,A,U */
02322 }
02323 , {{ 210, 190, 210, 190, 120} /* CG,UA,U,C,E */
02324 , { 210, 190, 210, 190, 120} /* CG,UA,U,C,A */
02325 , { 210, 190, 210, 190, 120} /* CG,UA,U,C,C */

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02326     , {      210,    190,    210,    190,    120} /* CG,UA,U,C,G */
02327     , {      210,    190,    210,    190,    120} /* CG,UA,U,C,U */
02328     }
02329     , {{      170,    150,    170,    150,    90} /* CG,UA,U,G,E */
02330     , {      170,    100,    170,    100,    20} /* CG,UA,U,G,A */
02331     , {      160,    150,    160,    150,    70} /* CG,UA,U,G,C */
02332     , {       90,     40,     50,     40,    90} /* CG,UA,U,G,G */
02333     , {      160,    150,    160,    150,    70} /* CG,UA,U,G,U */
02334     }
02335     , {{      210,    190,    210,    190,    120} /* CG,UA,U,U,E */
02336     , {      210,    190,    210,    190,    120} /* CG,UA,U,U,A */
02337     , {      180,    160,    180,    160,     90} /* CG,UA,U,U,C */
02338     , {      210,    190,    210,    190,    120} /* CG,UA,U,U,G */
02339     , {      120,    110,    120,    110,     30} /* CG,UA,U,U,U */
02340     }
02341     }
02342     }
02343     , {{{      310,    290,    310,    260,    300} /* CG,NN,E,E,E */
02344     , {      310,    270,    310,    260,    300} /* CG,NN,E,E,A */
02345     , {      270,    230,    270,    220,    270} /* CG,NN,E,E,C */
02346     , {      270,    230,    270,    220,    270} /* CG,NN,E,E,G */
02347     , {      290,    290,    270,    220,    270} /* CG,NN,E,E,U */
02348     }
02349     , {{      300,    270,    300,    260,    300} /* CG,NN,E,A,E */
02350     , {      300,    270,    300,    260,    300} /* CG,NN,E,A,A */
02351     , {      270,    230,    270,    220,    270} /* CG,NN,E,A,C */
02352     , {      230,    150,    230,    140,    220} /* CG,NN,E,A,G */
02353     , {      270,    230,    270,    220,    270} /* CG,NN,E,A,U */
02354     }
02355     , {{      270,    230,    270,    220,    270} /* CG,NN,E,C,E */
02356     , {      270,    230,    270,    220,    270} /* CG,NN,E,C,A */
02357     , {      270,    230,    270,    220,    270} /* CG,NN,E,C,C */
02358     , {      270,    230,    270,    220,    270} /* CG,NN,E,C,G */
02359     , {      270,    230,    270,    220,    270} /* CG,NN,E,C,U */
02360     }
02361     , {{      310,    230,    310,    220,    300} /* CG,NN,E,G,E */
02362     , {      310,    230,    310,    220,    300} /* CG,NN,E,G,A */
02363     , {      270,    230,    270,    220,    270} /* CG,NN,E,G,C */
02364     , {      210,    130,    140,    210,    150} /* CG,NN,E,G,G */
02365     , {      270,    230,    270,    220,    270} /* CG,NN,E,G,U */
02366     }
02367     , {{      290,    290,    270,    220,    270} /* CG,NN,E,U,E */
02368     , {      270,    230,    270,    220,    270} /* CG,NN,E,U,A */
02369     , {      270,    230,    270,    220,    270} /* CG,NN,E,U,C */
02370     , {      270,    230,    270,    220,    270} /* CG,NN,E,U,G */
02371     , {      290,    290,    270,    220,    270} /* CG,NN,E,U,U */
02372     }
02373     }
02374     , {{{      300,    290,    300,    190,    300} /* CG,NN,A,E,E */
02375     , {      300,    270,    300,    170,    300} /* CG,NN,A,E,A */
02376     , {      270,    230,    270,    190,    270} /* CG,NN,A,E,C */
02377     , {      270,    230,    270,    130,    270} /* CG,NN,A,E,G */
02378     , {      290,    290,    270,    190,    270} /* CG,NN,A,E,U */
02379     }
02380     , {{      300,    270,    300,    170,    300} /* CG,NN,A,A,E */
02381     , {      300,    270,    300,    170,    300} /* CG,NN,A,A,A */
02382     , {      270,    230,    270,    130,    270} /* CG,NN,A,A,C */
02383     , {      190,    150,    190,     50,    190} /* CG,NN,A,A,G */
02384     , {      270,    230,    270,    130,    270} /* CG,NN,A,A,U */
02385     }
02386     , {{      270,    230,    270,    190,    270} /* CG,NN,A,C,E */
02387     , {      270,    230,    270,    130,    270} /* CG,NN,A,C,A */
02388     , {      270,    230,    270,    190,    270} /* CG,NN,A,C,C */
02389     , {      270,    230,    270,    130,    270} /* CG,NN,A,C,G */
02390     , {      270,    230,    270,    190,    270} /* CG,NN,A,C,U */
02391     }
02392     , {{      270,    230,    270,    130,    270} /* CG,NN,A,G,E */
02393     , {      270,    230,    270,    130,    270} /* CG,NN,A,G,A */
02394     , {      270,    230,    270,    130,    270} /* CG,NN,A,G,C */
02395     , {      140,    100,    140,    130,    140} /* CG,NN,A,G,G */
02396     , {      270,    230,    270,    130,    270} /* CG,NN,A,G,U */
02397     }
02398     , {{      290,    290,    270,    190,    270} /* CG,NN,A,U,E */
02399     , {      270,    230,    270,    130,    270} /* CG,NN,A,U,A */
02400     , {      270,    230,    270,    190,    270} /* CG,NN,A,U,C */
02401     , {      270,    230,    270,    130,    270} /* CG,NN,A,U,G */
02402     , {      290,    290,    270,    130,    270} /* CG,NN,A,U,U */
02403     }
02404     }
02405     , {{{      310,    260,    310,    260,    300} /* CG,NN,C,E,E */
02406     , {      310,    260,    310,    260,    300} /* CG,NN,C,E,A */
02407     , {      250,    220,    250,    220,    240} /* CG,NN,C,E,C */
02408     , {      250,    220,    250,    220,    240} /* CG,NN,C,E,G */
02409     , {      250,    220,    250,    220,    240} /* CG,NN,C,E,U */
02410     }
02411     , {{      290,    260,    290,    260,    270} /* CG,NN,C,A,E */
02412     , {      290,    260,    290,    260,    270} /* CG,NN,C,A,A */

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02413      , {      250,      220,      250,      220,      240} /* CG,NN,C,A,C */
02414      , {      230,      140,      230,      140,      220} /* CG,NN,C,A,G */
02415      , {      250,      220,      250,      220,      240} /* CG,NN,C,A,U */
02416      }
02417      , {{      250,      220,      250,      220,      240} /* CG,NN,C,C,E */
02418      , {      250,      220,      250,      220,      240} /* CG,NN,C,C,A */
02419      , {      250,      220,      250,      220,      240} /* CG,NN,C,C,C */
02420      , {      250,      220,      250,      220,      240} /* CG,NN,C,C,G */
02421      , {      250,      220,      250,      220,      240} /* CG,NN,C,C,U */
02422      }
02423      , {{      310,      220,      310,      220,      300} /* CG,NN,C,G,E */
02424      , {      310,      220,      310,      220,      300} /* CG,NN,C,G,A */
02425      , {      250,      220,      250,      220,      240} /* CG,NN,C,G,C */
02426      , {      120,       90,      120,       90,      110} /* CG,NN,C,G,G */
02427      , {      250,      220,      250,      220,      240} /* CG,NN,C,G,U */
02428      }
02429      , {{      250,      220,      250,      220,      240} /* CG,NN,C,U,E */
02430      , {      250,      220,      250,      220,      240} /* CG,NN,C,U,A */
02431      , {      250,      220,      250,      220,      240} /* CG,NN,C,U,C */
02432      , {      250,      220,      250,      220,      240} /* CG,NN,C,U,G */
02433      , {      250,      220,      250,      220,      240} /* CG,NN,C,U,U */
02434      }
02435      }
02436      , {{{      300,      190,      300,      210,      300} /* CG,NN,G,E,E */
02437      , {      300,      170,      300,      210,      300} /* CG,NN,G,E,A */
02438      , {      270,      190,      270,       80,      270} /* CG,NN,G,E,C */
02439      , {      270,      130,      270,      210,      270} /* CG,NN,G,E,G */
02440      , {      270,      190,      270,      210,      270} /* CG,NN,G,E,U */
02441      }
02442      , {{      300,      170,      300,      130,      300} /* CG,NN,G,A,E */
02443      , {      300,      170,      300,      110,      300} /* CG,NN,G,A,A */
02444      , {      270,      130,      270,       80,      270} /* CG,NN,G,A,C */
02445      , {      190,       50,      190,      130,      190} /* CG,NN,G,A,G */
02446      , {      270,      130,      270,       80,      270} /* CG,NN,G,A,U */
02447      }
02448      , {{{      270,      190,      270,       80,      270} /* CG,NN,G,C,E */
02449      , {      270,      130,      270,       80,      270} /* CG,NN,G,C,A */
02450      , {      270,      190,      270,       80,      270} /* CG,NN,G,C,C */
02451      , {      270,      130,      270,       80,      270} /* CG,NN,G,C,G */
02452      , {      270,      190,      270,       80,      270} /* CG,NN,G,C,U */
02453      }
02454      , {{{      270,      130,      270,      210,      270} /* CG,NN,G,G,E */
02455      , {      270,      130,      270,      210,      270} /* CG,NN,G,G,A */
02456      , {      270,      130,      270,       80,      270} /* CG,NN,G,G,C */
02457      , {      210,      130,      140,      210,      140} /* CG,NN,G,G,G */
02458      , {      270,      130,      270,       80,      270} /* CG,NN,G,G,U */
02459      }
02460      , {{{      270,      190,      270,      210,      270} /* CG,NN,G,U,E */
02461      , {      270,      130,      270,       80,      270} /* CG,NN,G,U,A */
02462      , {      270,      190,      270,       80,      270} /* CG,NN,G,U,C */
02463      , {      270,      130,      270,       80,      270} /* CG,NN,G,U,G */
02464      , {      270,      130,      270,      210,      270} /* CG,NN,G,U,U */
02465      }
02466      }
02467      , {{{      300,      260,      300,      260,      240} /* CG,NN,U,E,E */
02468      , {      300,      260,      300,      260,      240} /* CG,NN,U,E,A */
02469      , {      240,      220,      240,      220,      150} /* CG,NN,U,E,C */
02470      , {      240,      220,      240,      220,      150} /* CG,NN,U,E,G */
02471      , {      240,      220,      240,      220,      150} /* CG,NN,U,E,U */
02472      }
02473      , {{      270,      260,      270,      260,      240} /* CG,NN,U,A,E */
02474      , {      270,      260,      270,      260,      240} /* CG,NN,U,A,A */
02475      , {      240,      220,      240,      220,      150} /* CG,NN,U,A,C */
02476      , {      220,      140,      220,      140,       70} /* CG,NN,U,A,G */
02477      , {      240,      220,      240,      220,      150} /* CG,NN,U,A,U */
02478      }
02479      , {{      240,      220,      240,      220,      150} /* CG,NN,U,C,E */
02480      , {      240,      220,      240,      220,      150} /* CG,NN,U,C,A */
02481      , {      240,      220,      240,      220,      150} /* CG,NN,U,C,C */
02482      , {      240,      220,      240,      220,      150} /* CG,NN,U,C,G */
02483      , {      240,      220,      240,      220,      150} /* CG,NN,U,C,U */
02484      }
02485      , {{      300,      220,      300,      220,      150} /* CG,NN,U,G,E */
02486      , {      300,      220,      300,      220,      150} /* CG,NN,U,G,A */
02487      , {      240,      220,      240,      220,      150} /* CG,NN,U,G,C */
02488      , {      150,       90,      110,       90,      150} /* CG,NN,U,G,G */
02489      , {      240,      220,      240,      220,      150} /* CG,NN,U,G,U */
02490      }
02491      , {{{      240,      220,      240,      220,      150} /* CG,NN,U,U,E */
02492      , {      240,      220,      240,      220,      150} /* CG,NN,U,U,A */
02493      , {      240,      220,      240,      220,      150} /* CG,NN,U,U,C */
02494      , {      240,      220,      240,      220,      150} /* CG,NN,U,U,G */
02495      , {      240,      220,      240,      220,      150} /* CG,NN,U,U,U */
02496      }
02497      }
02498      }
02499      }

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02500 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,E,E */
02501 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,A */
02502 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,C */
02503 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,G */
02504 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,U */
02505 }
02506 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,A,E */
02507 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,A */
02508 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,C */
02509 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,G */
02510 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,U */
02511 }
02512 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,C,E */
02513 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C,A */
02514 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C,C */
02515 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C,G */
02516 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C,U */
02517 }
02518 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,G,E */
02519 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,G,A */
02520 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,G,C */
02521 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,G,G */
02522 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,G,U */
02523 }
02524 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,U,E */
02525 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,U,A */
02526 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,U,C */
02527 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,U,G */
02528 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,U,U */
02529 }
02530 }
02531 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,A,E,E */
02532 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,E,A */
02533 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,E,C */
02534 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,E,G */
02535 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,E,U */
02536 }
02537 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,A,A,E */
02538 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,A,A */
02539 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,A,C */
02540 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,A,G */
02541 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,A,U */
02542 }
02543 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,A,C,E */
02544 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,C,A */
02545 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,C,C */
02546 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,C,G */
02547 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,C,U */
02548 }
02549 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,A,G,E */
02550 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,G,A */
02551 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,G,C */
02552 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,G,G */
02553 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,G,U */
02554 }
02555 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,A,U,E */
02556 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,U,A */
02557 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,U,C */
02558 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,U,G */
02559 ,{ INF, INF, INF, INF, INF} /* GC,NP,A,U,U */
02560 }
02561 }
02562 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,C,E,E */
02563 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,E,A */
02564 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,E,C */
02565 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,E,G */
02566 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,E,U */
02567 }
02568 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,C,A,E */
02569 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,A,A */
02570 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,A,C */
02571 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,A,G */
02572 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,A,U */
02573 }
02574 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,C,C,E */
02575 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,C,A */
02576 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,C,C */
02577 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,C,G */
02578 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,C,U */
02579 }
02580 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,C,G,E */
02581 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,G,A */
02582 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,G,C */
02583 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,G,G */
02584 ,{ INF, INF, INF, INF, INF} /* GC,NP,C,G,U */
02585 }
02586 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,C,U,E */
```

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02587      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,C,U,A */
02588      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,C,U,C */
02589      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,C,U,G */
02590      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,C,U,U */
02591      }
02592    }
02593    ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,E,E */
02594      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,E,A */
02595      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,E,C */
02596      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,E,G */
02597      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,E,U */
02598    }
02599    ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,A,E */
02600      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,A,A */
02601      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,A,C */
02602      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,A,G */
02603      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,A,U */
02604    }
02605    ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,C,E */
02606      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,C,A */
02607      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,C,C */
02608      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,C,G */
02609      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,C,U */
02610    }
02611    ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,G,E */
02612      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,G,A */
02613      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,G,C */
02614      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,G,G */
02615      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,G,U */
02616    }
02617    ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U,E */
02618      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U,A */
02619      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U,C */
02620      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U,G */
02621      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U,U */
02622    }
02623  }
02624  ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,E,E */
02625    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,E,A */
02626    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,E,C */
02627    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,E,G */
02628    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,E,U */
02629  }
02630  ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,A,E */
02631    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,A,A */
02632    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,A,C */
02633    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,A,G */
02634    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,A,U */
02635  }
02636  ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,C,E */
02637    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,C,A */
02638    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,C,C */
02639    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,C,G */
02640    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,C,U */
02641  }
02642  ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,G,E */
02643    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,G,A */
02644    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,G,C */
02645    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,G,G */
02646    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,G,U */
02647  }
02648  ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,U,E */
02649    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,U,A */
02650    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,U,C */
02651    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,U,G */
02652    , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U,U,U */
02653  }
02654  }
02655  }
02656  ,{{{      220,      220,      190,      150,      150} /* GC,CG,E,E,E */
02657    , {      170,      170,      150,      150,      150} /* GC,CG,E,E,A */
02658    , {      220,      220,      190,      130,      140} /* GC,CG,E,E,C */
02659    , {      170,      170,      150,      150,      150} /* GC,CG,E,E,G */
02660    , {      140,      140,      120,      140,      120} /* GC,CG,E,E,U */
02661  }
02662  ,{{{      150,      130,      110,      110,      150} /* GC,CG,E,A,E */
02663    , {      150,      130,      110,      110,      150} /* GC,CG,E,A,A */
02664    , {      130,      130,      110,      100,      110} /* GC,CG,E,A,C */
02665    , {       90,       10,       70,       10,       90} /* GC,CG,E,A,G */
02666    , {      130,      130,      100,      100,      110} /* GC,CG,E,A,U */
02667  }
02668  ,{{{      220,      220,      190,      150,      150} /* GC,CG,E,C,E */
02669    , {      150,      150,      150,      150,      150} /* GC,CG,E,C,A */
02670    , {      220,      220,      190,      130,      140} /* GC,CG,E,C,C */
02671    , {      170,      170,      150,      150,      150} /* GC,CG,E,C,G */
02672    , {      140,      140,      120,      120,      120} /* GC,CG,E,C,U */
02673  }

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02674 ,{{ 140, 130, 100, 100, 140} /* GC,CG,E,G,E */
02675 ,{ 90, 10, 70, 10, 90} /* GC,CG,E,G,A */
02676 ,{ 130, 130, 100, 100, 110} /* GC,CG,E,G,C */
02677 ,{ 140, -10, 20, 80, 140} /* GC,CG,E,G,G */
02678 ,{ 130, 130, 100, 100, 110} /* GC,CG,E,G,U */
02679 }
02680 ,{{ 170, 170, 170, 150, 150} /* GC,CG,E,U,E */
02681 ,{ 170, 170, 150, 150, 150} /* GC,CG,E,U,A */
02682 ,{ 170, 140, 170, 120, 120} /* GC,CG,E,U,C */
02683 ,{ 170, 170, 150, 150, 150} /* GC,CG,E,U,G */
02684 ,{ 140, 140, 30, 140, 30} /* GC,CG,E,U,U */
02685 }
02686 }
02687 ,{{{ 220, 220, 190, 140, 140} /* GC,CG,A,E,E */
02688 ,{ 170, 170, 140, 40, 140} /* GC,CG,A,E,A */
02689 ,{ 220, 220, 190, 70, 130} /* GC,CG,A,E,C */
02690 ,{ 170, 170, 140, 30, 140} /* GC,CG,A,E,G */
02691 ,{ 140, 140, 110, 140, 110} /* GC,CG,A,E,U */
02692 }
02693 ,{{ 130, 130, 110, 70, 100} /* GC,CG,A,A,E */
02694 ,{ 130, 130, 100, 40, 100} /* GC,CG,A,A,A */
02695 ,{ 130, 130, 110, 70, 100} /* GC,CG,A,A,C */
02696 ,{ 70, -20, 70, -50, 10} /* GC,CG,A,A,G */
02697 ,{ 130, 130, 100, -10, 100} /* GC,CG,A,A,U */
02698 }
02699 ,{{ 220, 220, 190, 70, 140} /* GC,CG,A,C,E */
02700 ,{ 140, 60, 50, 30, 140} /* GC,CG,A,C,A */
02701 ,{ 220, 220, 190, 70, 130} /* GC,CG,A,C,C */
02702 ,{ 170, 170, 140, 30, 140} /* GC,CG,A,C,G */
02703 ,{ 140, 140, 110, 50, 110} /* GC,CG,A,C,U */
02704 }
02705 ,{{ 130, 130, 100, -10, 100} /* GC,CG,A,G,E */
02706 ,{ 10, 0, -100, -70, 10} /* GC,CG,A,G,A */
02707 ,{ 130, 130, 100, -10, 100} /* GC,CG,A,G,C */
02708 ,{ -10, -10, -50, -30, -50} /* GC,CG,A,G,G */
02709 ,{ 130, 130, 100, -10, 100} /* GC,CG,A,G,U */
02710 }
02711 ,{{ 170, 170, 140, 140, 140} /* GC,CG,A,U,E */
02712 ,{ 170, 170, 140, 30, 140} /* GC,CG,A,U,A */
02713 ,{ 140, 140, 110, 60, 110} /* GC,CG,A,U,C */
02714 ,{ 170, 170, 140, 30, 140} /* GC,CG,A,U,G */
02715 ,{ 140, 140, 30, 140, 20} /* GC,CG,A,U,U */
02716 }
02717 }
02718 ,{{{ 150, 150, 150, 150, 150} /* GC,CG,C,E,E */
02719 ,{ 150, 150, 150, 150, 150} /* GC,CG,C,E,A */
02720 ,{ 140, 130, 130, 130, 140} /* GC,CG,C,E,C */
02721 ,{ 150, 150, 150, 150, 150} /* GC,CG,C,E,G */
02722 ,{ 120, 120, 120, 120, 120} /* GC,CG,C,E,U */
02723 }
02724 ,{{ 110, 110, 110, 110, 110} /* GC,CG,C,A,E */
02725 ,{ 110, 110, 110, 110, 110} /* GC,CG,C,A,A */
02726 ,{ 110, 100, 100, 100, 110} /* GC,CG,C,A,C */
02727 ,{ 80, -40, 70, 10, 80} /* GC,CG,C,A,G */
02728 ,{ 110, 100, 100, 100, 110} /* GC,CG,C,A,U */
02729 }
02730 ,{{{ 150, 150, 150, 150, 150} /* GC,CG,C,C,E */
02731 ,{ 150, 150, 150, 150, 150} /* GC,CG,C,C,A */
02732 ,{ 140, 130, 130, 130, 140} /* GC,CG,C,C,C */
02733 ,{ 150, 150, 150, 150, 150} /* GC,CG,C,C,G */
02734 ,{ 120, 120, 120, 120, 120} /* GC,CG,C,C,U */
02735 }
02736 ,{{ 110, 100, 100, 100, 110} /* GC,CG,C,G,E */
02737 ,{ 80, -70, -60, 10, 80} /* GC,CG,C,G,A */
02738 ,{ 110, 100, 100, 100, 110} /* GC,CG,C,G,C */
02739 ,{ -40, -40, -40, -40, -50} /* GC,CG,C,G,G */
02740 ,{ 110, 100, 100, 100, 110} /* GC,CG,C,G,U */
02741 }
02742 ,{{{ 150, 150, 150, 150, 150} /* GC,CG,C,U,E */
02743 ,{ 150, 150, 150, 150, 150} /* GC,CG,C,U,A */
02744 ,{ 120, 120, 120, 120, 120} /* GC,CG,C,U,C */
02745 ,{ 150, 150, 150, 150, 150} /* GC,CG,C,U,G */
02746 ,{ 30, 30, 30, 30, 30} /* GC,CG,C,U,U */
02747 }
02748 }
02749 ,{{{ 140, 70, 140, 80, 140} /* GC,CG,G,E,E */
02750 ,{ 140, 10, 140, 10, 140} /* GC,CG,G,E,A */
02751 ,{ 130, 70, 130, 20, 130} /* GC,CG,G,E,C */
02752 ,{ 140, -30, 140, 80, 140} /* GC,CG,G,E,G */
02753 ,{ 110, 50, 110, 70, 110} /* GC,CG,G,E,U */
02754 }
02755 ,{{ 100, -30, 100, -30, 100} /* GC,CG,G,A,E */
02756 ,{ 100, -30, 100, -30, 100} /* GC,CG,G,A,A */
02757 ,{ 100, -70, 100, -40, 100} /* GC,CG,G,A,C */
02758 ,{ 10, -170, 10, -30, 10} /* GC,CG,G,A,G */
02759 ,{ 100, -70, 100, -40, 100} /* GC,CG,G,A,U */
02760 }
```

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02761 ,{{ 140, 70, 140, 10, 140} /* GC,CG,G,C,E */
02762 ,{ 140, 10, 140, -30, 140} /* GC,CG,G,C,A */
02763 ,{ 130, 70, 130, -10, 130} /* GC,CG,G,C,C */
02764 ,{ 140, -30, 140, 10, 140} /* GC,CG,G,C,G */
02765 ,{ 110, 0, 110, -60, 110} /* GC,CG,G,C,U */
02766 }
02767 ,{{ 100, -70, 100, 80, 100} /* GC,CG,G,G,E */
02768 ,{ 10, -160, 10, 0, 10} /* GC,CG,G,G,A */
02769 ,{ 100, -70, 100, -40, 100} /* GC,CG,G,G,C */
02770 ,{ 80, -90, -50, 80, -50} /* GC,CG,G,G,G */
02771 ,{ 100, -70, 100, -40, 100} /* GC,CG,G,G,U */
02772 }
02773 ,{{ 140, 50, 140, 70, 140} /* GC,CG,G,U,E */
02774 ,{ 140, -30, 140, 10, 140} /* GC,CG,G,U,A */
02775 ,{ 110, 0, 110, 20, 110} /* GC,CG,G,U,C */
02776 ,{ 140, -30, 140, 10, 140} /* GC,CG,G,U,G */
02777 ,{ 70, 50, 20, 70, 20} /* GC,CG,G,U,U */
02778 }
02779 }
02780 ,{{{ 170, 150, 170, 150, 150} /* GC,CG,U,E,E */
02781 ,{ 150, 150, 150, 150, 150} /* GC,CG,U,E,A */
02782 ,{ 170, 130, 170, 130, 30} /* GC,CG,U,E,C */
02783 ,{ 150, 150, 150, 150, 140} /* GC,CG,U,E,G */
02784 ,{ 120, 120, 120, 120, 40} /* GC,CG,U,E,U */
02785 }
02786 ,{{ 150, 110, 110, 110, 150} /* GC,CG,U,A,E */
02787 ,{ 150, 110, 110, 110, 150} /* GC,CG,U,A,A */
02788 ,{ 100, 100, 100, 100, -20} /* GC,CG,U,A,C */
02789 ,{ 90, 10, 70, 10, 90} /* GC,CG,U,A,G */
02790 ,{ 100, 100, 100, 100, 30} /* GC,CG,U,A,U */
02791 }
02792 ,{{ 150, 150, 150, 150, 70} /* GC,CG,U,C,E */
02793 ,{ 150, 150, 150, 150, 0} /* GC,CG,U,C,A */
02794 ,{ 130, 130, 130, 130, -10} /* GC,CG,U,C,C */
02795 ,{ 150, 150, 150, 150, 70} /* GC,CG,U,C,G */
02796 ,{ 120, 120, 120, 120, 40} /* GC,CG,U,C,U */
02797 }
02798 ,{{ 140, 100, 100, 100, 140} /* GC,CG,U,G,E */
02799 ,{ 90, 10, 70, 10, 90} /* GC,CG,U,G,A */
02800 ,{ 100, 100, 100, 100, 30} /* GC,CG,U,G,C */
02801 ,{ 140, -40, 20, -40, 140} /* GC,CG,U,G,G */
02802 ,{ 100, 100, 100, 100, 30} /* GC,CG,U,G,U */
02803 }
02804 ,{{ 170, 150, 170, 150, 70} /* GC,CG,U,U,E */
02805 ,{ 150, 150, 150, 150, 70} /* GC,CG,U,U,A */
02806 ,{ 170, 120, 170, 120, 20} /* GC,CG,U,U,C */
02807 ,{ 150, 150, 150, 150, 70} /* GC,CG,U,U,G */
02808 ,{ 30, 30, 30, 30, -60} /* GC,CG,U,U,U */
02809 }
02810 }
02811 }
02812 ,{{{ 150, 150, 120, 120, 130} /* GC,GC,E,E,E */
02813 ,{ 150, 150, 120, 120, 130} /* GC,GC,E,E,A */
02814 ,{ 130, 130, 100, 100, 110} /* GC,GC,E,E,C */
02815 ,{ 120, 120, 90, 90, 100} /* GC,GC,E,E,G */
02816 ,{ 120, 120, 100, 100, 100} /* GC,GC,E,E,U */
02817 }
02818 ,{{ 150, 150, 120, 120, 130} /* GC,GC,E,A,E */
02819 ,{ 150, 150, 120, 120, 130} /* GC,GC,E,A,A */
02820 ,{ 120, 120, 100, 100, 100} /* GC,GC,E,A,C */
02821 ,{ -10, -50, -20, -80, -10} /* GC,GC,E,A,G */
02822 ,{ 120, 120, 100, 100, 100} /* GC,GC,E,A,U */
02823 }
02824 ,{{ 120, 120, 100, 100, 100} /* GC,GC,E,C,E */
02825 ,{ 120, 120, 90, 90, 100} /* GC,GC,E,C,A */
02826 ,{ 120, 120, 100, 100, 100} /* GC,GC,E,C,C */
02827 ,{ 120, 120, 90, 90, 100} /* GC,GC,E,C,G */
02828 ,{ 120, 120, 100, 100, 100} /* GC,GC,E,C,U */
02829 }
02830 ,{{ 120, 120, 100, 100, 100} /* GC,GC,E,G,E */
02831 ,{ 50, 10, 50, -10, 50} /* GC,GC,E,G,A */
02832 ,{ 120, 120, 100, 100, 100} /* GC,GC,E,G,C */
02833 ,{ 80, -20, -40, 80, 10} /* GC,GC,E,G,G */
02834 ,{ 120, 120, 100, 100, 100} /* GC,GC,E,G,U */
02835 }
02836 ,{{ 130, 130, 100, 100, 110} /* GC,GC,E,U,E */
02837 ,{ 120, 120, 90, 90, 100} /* GC,GC,E,U,A */
02838 ,{ 130, 130, 100, 100, 110} /* GC,GC,E,U,C */
02839 ,{ 120, 120, 90, 90, 100} /* GC,GC,E,U,G */
02840 ,{ 110, 110, 20, 20, 30} /* GC,GC,E,U,U */
02841 }
02842 }
02843 ,{{{ 150, 150, 120, 50, 120} /* GC,GC,A,E,E */
02844 ,{ 150, 150, 120, 10, 120} /* GC,GC,A,E,A */
02845 ,{ 130, 130, 100, 50, 100} /* GC,GC,A,E,C */
02846 ,{ 120, 120, 90, -20, 90} /* GC,GC,A,E,G */
02847 ,{ 120, 120, 90, 50, 90} /* GC,GC,A,E,U */

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```

02848     }
02849     , {{ 150, 150, 120, 10, 120} /* GC,GC,A,A,E */
02850     , { 150, 150, 120, 10, 120} /* GC,GC,A,A,A */
02851     , { 120, 120, 90, -10, 90} /* GC,GC,A,A,C */
02852     , { -50, -50, -80, -190, -80} /* GC,GC,A,A,G */
02853     , { 120, 120, 90, -10, 90} /* GC,GC,A,A,U */
02854     }
02855     , {{ 120, 120, 90, 50, 90} /* GC,GC,A,C,E */
02856     , { 120, 120, 90, -20, 90} /* GC,GC,A,C,A */
02857     , { 120, 120, 90, 50, 90} /* GC,GC,A,C,C */
02858     , { 120, 120, 90, -20, 90} /* GC,GC,A,C,G */
02859     , { 120, 120, 90, 50, 90} /* GC,GC,A,C,U */
02860     }
02861     , {{ 120, 120, 90, -10, 90} /* GC,GC,A,G,E */
02862     , { 10, 10, -20, -130, -20} /* GC,GC,A,G,A */
02863     , { 120, 120, 90, -10, 90} /* GC,GC,A,G,C */
02864     , { -20, -20, -50, -20, -50} /* GC,GC,A,G,G */
02865     , { 120, 120, 90, -10, 90} /* GC,GC,A,G,U */
02866     }
02867     , {{ 130, 130, 100, 50, 100} /* GC,GC,A,U,E */
02868     , { 120, 120, 90, -20, 90} /* GC,GC,A,U,A */
02869     , { 130, 130, 100, 50, 100} /* GC,GC,A,U,C */
02870     , { 120, 120, 90, -20, 90} /* GC,GC,A,U,G */
02871     , { 110, 110, 20, -90, 20} /* GC,GC,A,U,U */
02872     }
02873     }
02874     , {{{ 130, 120, 120, 120, 130} /* GC,GC,C,E,E */
02875     , { 130, 120, 120, 120, 130} /* GC,GC,C,E,A */
02876     , { 110, 100, 100, 100, 110} /* GC,GC,C,E,C */
02877     , { 100, 90, 90, 90, 100} /* GC,GC,C,E,G */
02878     , { 100, 100, 100, 100, 100} /* GC,GC,C,E,U */
02879     }
02880     , {{ 130, 120, 120, 120, 130} /* GC,GC,C,A,E */
02881     , { 130, 120, 120, 120, 130} /* GC,GC,C,A,A */
02882     , { 100, 100, 100, 100, 100} /* GC,GC,C,A,C */
02883     , { -10, -80, -20, -80, -10} /* GC,GC,C,A,G */
02884     , { 100, 100, 100, 100, 100} /* GC,GC,C,A,U */
02885     }
02886     , {{ 100, 100, 100, 100, 100} /* GC,GC,C,C,E */
02887     , { 100, 90, 90, 90, 100} /* GC,GC,C,C,A */
02888     , { 100, 100, 100, 100, 100} /* GC,GC,C,C,C */
02889     , { 100, 90, 90, 90, 100} /* GC,GC,C,C,G */
02890     , { 100, 100, 100, 100, 100} /* GC,GC,C,C,U */
02891     }
02892     , {{ 100, 100, 100, 100, 100} /* GC,GC,C,G,E */
02893     , { 50, -10, 50, -10, 50} /* GC,GC,C,G,A */
02894     , { 100, 100, 100, 100, 100} /* GC,GC,C,G,C */
02895     , { -40, -40, -40, -40, -40} /* GC,GC,C,G,G */
02896     , { 100, 100, 100, 100, 100} /* GC,GC,C,G,U */
02897     }
02898     , {{{ 110, 100, 100, 100, 110} /* GC,GC,C,U,E */
02899     , { 100, 90, 90, 90, 100} /* GC,GC,C,U,A */
02900     , { 110, 100, 100, 100, 110} /* GC,GC,C,U,C */
02901     , { 100, 90, 90, 90, 100} /* GC,GC,C,U,G */
02902     , { 30, 20, 20, 20, 30} /* GC,GC,C,U,U */
02903     }
02904     }
02905     , {{{ 120, -10, 120, 80, 120} /* GC,GC,G,E,E */
02906     , { 120, -50, 120, -20, 120} /* GC,GC,G,E,A */
02907     , { 100, -10, 100, -40, 100} /* GC,GC,G,E,C */
02908     , { 90, -80, 90, 80, 90} /* GC,GC,G,E,G */
02909     , { 90, -20, 90, 10, 90} /* GC,GC,G,E,U */
02910     }
02911     , {{ 120, -50, 120, -20, 120} /* GC,GC,G,A,E */
02912     , { 120, -50, 120, -20, 120} /* GC,GC,G,A,A */
02913     , { 90, -80, 90, -40, 90} /* GC,GC,G,A,C */
02914     , { -80, -260, -80, -90, -80} /* GC,GC,G,A,G */
02915     , { 90, -80, 90, -40, 90} /* GC,GC,G,A,U */
02916     }
02917     , {{ 90, -20, 90, -40, 90} /* GC,GC,G,C,E */
02918     , { 90, -80, 90, -50, 90} /* GC,GC,G,C,A */
02919     , { 90, -20, 90, -40, 90} /* GC,GC,G,C,C */
02920     , { 90, -80, 90, -50, 90} /* GC,GC,G,C,G */
02921     , { 90, -20, 90, -40, 90} /* GC,GC,G,C,U */
02922     }
02923     , {{ 90, -80, 90, 80, 90} /* GC,GC,G,G,E */
02924     , { -20, -190, -20, -20, -20} /* GC,GC,G,G,A */
02925     , { 90, -80, 90, -40, 90} /* GC,GC,G,G,C */
02926     , { 80, -90, -50, 80, -50} /* GC,GC,G,G,G */
02927     , { 90, -80, 90, -40, 90} /* GC,GC,G,G,U */
02928     }
02929     , {{ 100, -10, 100, 10, 100} /* GC,GC,G,U,E */
02930     , { 90, -80, 90, -50, 90} /* GC,GC,G,U,A */
02931     , { 100, -10, 100, -40, 100} /* GC,GC,G,U,C */
02932     , { 90, -80, 90, -50, 90} /* GC,GC,G,U,G */
02933     , { 20, -150, 20, 10, 20} /* GC,GC,G,U,U */
02934     }

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02935     }
02936     ,{{{ 120, 120, 120, 120, 110} /* GC,GC,U,E,E */
02937     ,{ 120, 120, 120, 120, 110} /* GC,GC,U,E,A */
02938     ,{ 100, 100, 100, 100, 30} /* GC,GC,U,E,C */
02939     ,{ 90, 90, 90, 90, 20} /* GC,GC,U,E,G */
02940     ,{ 100, 100, 100, 100, 20} /* GC,GC,U,E,U */
02941     }
02942     ,{{{ 120, 120, 120, 120, 110} /* GC,GC,U,A,E */
02943     ,{ 120, 120, 120, 120, 110} /* GC,GC,U,A,A */
02944     ,{ 100, 100, 100, 100, 20} /* GC,GC,U,A,C */
02945     ,{ -20, -80, -20, -80, -150} /* GC,GC,U,A,G */
02946     ,{ 100, 100, 100, 100, 20} /* GC,GC,U,A,U */
02947     }
02948     ,{{{ 100, 100, 100, 100, 20} /* GC,GC,U,C,E */
02949     ,{ 90, 90, 90, 90, 20} /* GC,GC,U,C,A */
02950     ,{ 100, 100, 100, 100, 20} /* GC,GC,U,C,C */
02951     ,{ 90, 90, 90, 90, 20} /* GC,GC,U,C,G */
02952     ,{ 100, 100, 100, 100, 20} /* GC,GC,U,C,U */
02953     }
02954     ,{{{ 100, 100, 100, 100, 20} /* GC,GC,U,G,E */
02955     ,{ 50, -10, 50, -90} /* GC,GC,U,G,A */
02956     ,{ 100, 100, 100, 100, 20} /* GC,GC,U,G,C */
02957     ,{ 10, -40, -40, -40, 10} /* GC,GC,U,G,G */
02958     ,{ 100, 100, 100, 100, 20} /* GC,GC,U,G,U */
02959     }
02960     ,{{{ 100, 100, 100, 100, 30} /* GC,GC,U,U,E */
02961     ,{ 90, 90, 90, 90, 20} /* GC,GC,U,U,A */
02962     ,{ 100, 100, 100, 100, 30} /* GC,GC,U,U,C */
02963     ,{ 90, 90, 90, 90, 20} /* GC,GC,U,U,G */
02964     ,{ 20, 20, 20, 20, -50} /* GC,GC,U,U,U */
02965     }
02966     }
02967     }
02968     ,{{{ 300, 300, 250, 250, 260} /* GC,GU,E,E,E */
02969     ,{ 280, 280, 250, 250, 260} /* GC,GU,E,E,A */
02970     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,E,C */
02971     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,E,G */
02972     ,{ 300, 300, 220, 220, 220} /* GC,GU,E,E,U */
02973     }
02974     ,{{{ 280, 280, 250, 250, 260} /* GC,GU,E,A,E */
02975     ,{ 280, 280, 250, 250, 260} /* GC,GU,E,A,A */
02976     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,A,C */
02977     ,{ 200, 160, 200, 140, 200} /* GC,GU,E,A,G */
02978     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,A,U */
02979     }
02980     ,{{{ 240, 240, 220, 220, 220} /* GC,GU,E,C,E */
02981     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,C,A */
02982     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,C,C */
02983     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,C,G */
02984     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,C,U */
02985     }
02986     ,{{{ 240, 240, 240, 220, 240} /* GC,GU,E,G,E */
02987     ,{ 240, 200, 240, 180, 240} /* GC,GU,E,G,A */
02988     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,G,C */
02989     ,{ 210, 110, 90, 210, 140} /* GC,GU,E,G,G */
02990     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,G,U */
02991     }
02992     ,{{{ 300, 300, 220, 220, 220} /* GC,GU,E,U,E */
02993     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,U,A */
02994     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,U,C */
02995     ,{ 240, 240, 220, 220, 220} /* GC,GU,E,U,G */
02996     ,{ 300, 300, 220, 220, 220} /* GC,GU,E,U,U */
02997     }
02998     }
02999     ,{{{ 300, 300, 250, 160, 250} /* GC,GU,A,E,E */
03000     ,{ 280, 280, 250, 140, 250} /* GC,GU,A,E,A */
03001     ,{ 240, 240, 210, 160, 210} /* GC,GU,A,E,C */
03002     ,{ 240, 240, 210, 100, 210} /* GC,GU,A,E,G */
03003     ,{ 300, 300, 210, 160, 210} /* GC,GU,A,E,U */
03004     }
03005     ,{{{ 280, 280, 250, 140, 250} /* GC,GU,A,A,E */
03006     ,{ 280, 280, 250, 140, 250} /* GC,GU,A,A,A */
03007     ,{ 240, 240, 210, 100, 210} /* GC,GU,A,A,C */
03008     ,{ 160, 160, 130, 20, 130} /* GC,GU,A,A,G */
03009     ,{ 240, 240, 210, 100, 210} /* GC,GU,A,A,U */
03010     }
03011     ,{{{ 240, 240, 210, 160, 210} /* GC,GU,A,C,E */
03012     ,{ 240, 240, 210, 100, 210} /* GC,GU,A,C,A */
03013     ,{ 240, 240, 210, 160, 210} /* GC,GU,A,C,C */
03014     ,{ 240, 240, 210, 100, 210} /* GC,GU,A,C,G */
03015     ,{ 240, 240, 210, 160, 210} /* GC,GU,A,C,U */
03016     }
03017     ,{{{ 240, 240, 210, 100, 210} /* GC,GU,A,G,E */
03018     ,{ 200, 200, 170, 60, 170} /* GC,GU,A,G,A */
03019     ,{ 240, 240, 210, 100, 210} /* GC,GU,A,G,C */
03020     ,{ 110, 110, 80, 100, 80} /* GC,GU,A,G,G */
03021     ,{ 240, 240, 210, 100, 210} /* GC,GU,A,G,U */

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03022     }
03023     ,{{ 300, 300, 210, 160, 210} /* GC, GU, A, U, E */
03024     ,{ 240, 240, 210, 100, 210} /* GC, GU, A, U, A */
03025     ,{ 240, 240, 210, 160, 210} /* GC, GU, A, U, C */
03026     ,{ 240, 240, 210, 100, 210} /* GC, GU, A, U, G */
03027     ,{ 300, 300, 210, 100, 210} /* GC, GU, A, U, U */
03028     }
03029     }
03030     ,{{{ 260, 250, 250, 250, 260} /* GC, GU, C, E, E */
03031     ,{ 260, 250, 250, 250, 260} /* GC, GU, C, E, A */
03032     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, E, C */
03033     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, E, G */
03034     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, E, U */
03035     }
03036     ,{{ 260, 250, 250, 250, 260} /* GC, GU, C, A, E */
03037     ,{ 260, 250, 250, 250, 260} /* GC, GU, C, A, A */
03038     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, A, C */
03039     ,{ 200, 140, 200, 200, 200} /* GC, GU, C, A, G */
03040     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, A, U */
03041     }
03042     ,{{{ 220, 220, 220, 220, 220} /* GC, GU, C, C, E */
03043     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, C, A */
03044     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, C, C */
03045     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, C, G */
03046     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, C, U */
03047     }
03048     ,{{{ 240, 220, 240, 220, 240} /* GC, GU, C, G, E */
03049     ,{ 240, 180, 240, 180, 240} /* GC, GU, C, G, A */
03050     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, G, C */
03051     ,{ 90, 90, 90, 90, 90} /* GC, GU, C, G, G */
03052     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, G, U */
03053     }
03054     ,{{{ 220, 220, 220, 220, 220} /* GC, GU, C, U, E */
03055     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, U, A */
03056     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, U, C */
03057     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, U, G */
03058     ,{ 220, 220, 220, 220, 220} /* GC, GU, C, U, U */
03059     }
03060     }
03061     ,{{{ 250, 100, 250, 210, 250} /* GC, GU, G, E, E */
03062     ,{ 250, 70, 250, 170, 250} /* GC, GU, G, E, A */
03063     ,{ 210, 100, 210, 80, 210} /* GC, GU, G, E, C */
03064     ,{ 210, 40, 210, 210, 210} /* GC, GU, G, E, G */
03065     ,{ 210, 100, 210, 210, 210} /* GC, GU, G, E, U */
03066     }
03067     ,{{{ 250, 70, 250, 130, 250} /* GC, GU, G, A, E */
03068     ,{ 250, 70, 250, 110, 250} /* GC, GU, G, A, A */
03069     ,{ 210, 40, 210, 80, 210} /* GC, GU, G, A, C */
03070     ,{ 130, -40, 130, 130, 130} /* GC, GU, G, A, G */
03071     ,{ 210, 40, 210, 80, 210} /* GC, GU, G, A, U */
03072     }
03073     ,{{{ 210, 100, 210, 80, 210} /* GC, GU, G, C, E */
03074     ,{ 210, 40, 210, 80, 210} /* GC, GU, G, C, A */
03075     ,{ 210, 100, 210, 80, 210} /* GC, GU, G, C, C */
03076     ,{ 210, 40, 210, 80, 210} /* GC, GU, G, C, G */
03077     ,{ 210, 100, 210, 80, 210} /* GC, GU, G, C, U */
03078     }
03079     ,{{{ 210, 40, 210, 210, 210} /* GC, GU, G, G, E */
03080     ,{ 170, 0, 170, 170, 170} /* GC, GU, G, G, A */
03081     ,{ 210, 40, 210, 80, 210} /* GC, GU, G, G, C */
03082     ,{ 210, 40, 80, 210, 80} /* GC, GU, G, G, G */
03083     ,{ 210, 40, 210, 80, 210} /* GC, GU, G, G, U */
03084     }
03085     ,{{{ 210, 100, 210, 210, 210} /* GC, GU, G, U, E */
03086     ,{ 210, 40, 210, 80, 210} /* GC, GU, G, U, A */
03087     ,{ 210, 100, 210, 80, 210} /* GC, GU, G, U, C */
03088     ,{ 210, 40, 210, 80, 210} /* GC, GU, G, U, G */
03089     ,{ 210, 40, 210, 210, 210} /* GC, GU, G, U, U */
03090     }
03091     }
03092     ,{{{ 250, 250, 250, 250, 240} /* GC, GU, U, E, E */
03093     ,{ 250, 250, 250, 250, 240} /* GC, GU, U, E, A */
03094     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, E, C */
03095     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, E, G */
03096     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, E, U */
03097     }
03098     ,{{{ 250, 250, 250, 250, 240} /* GC, GU, U, A, E */
03099     ,{ 250, 250, 250, 250, 240} /* GC, GU, U, A, A */
03100     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, A, C */
03101     ,{ 200, 140, 200, 140, 60} /* GC, GU, U, A, G */
03102     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, A, U */
03103     }
03104     ,{{{ 220, 220, 220, 220, 140} /* GC, GU, U, C, E */
03105     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, C, A */
03106     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, C, C */
03107     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, C, G */
03108     ,{ 220, 220, 220, 220, 140} /* GC, GU, U, C, U */
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03109      }
03110      ,{{      240,      220,      240,      220,      140} /* GC, GU, U, G, E */
03111      ,{      240,      180,      240,      180,      100} /* GC, GU, U, G, A */
03112      ,{      220,      220,      220,      220,      140} /* GC, GU, U, G, C */
03113      ,{      140,       90,       90,       90,      140} /* GC, GU, U, G, G */
03114      ,{      220,      220,      220,      220,      140} /* GC, GU, U, G, U */
03115      }
03116      ,{{      220,      220,      220,      220,      140} /* GC, GU, U, U, E */
03117      ,{      220,      220,      220,      220,      140} /* GC, GU, U, U, A */
03118      ,{      220,      220,      220,      220,      140} /* GC, GU, U, U, C */
03119      ,{      220,      220,      220,      220,      140} /* GC, GU, U, U, G */
03120      ,{      220,      220,      220,      220,      140} /* GC, GU, U, U, U */
03121      }
03122      }
03123      }
03124      ,{{{      280,      270,      280,      220,      280} /* GC, UG, E, E, E */
03125      ,{      280,      240,      280,      220,      280} /* GC, UG, E, E, A */
03126      ,{      210,      210,      190,      190,      190} /* GC, UG, E, E, C */
03127      ,{      210,      210,      190,      190,      190} /* GC, UG, E, E, G */
03128      ,{      270,      270,      190,      190,      190} /* GC, UG, E, E, U */
03129      }
03130      ,{{      210,      210,      190,      190,      190} /* GC, UG, E, A, E */
03131      ,{      190,      190,      150,      150,      160} /* GC, UG, E, A, A */
03132      ,{      210,      210,      190,      190,      190} /* GC, UG, E, A, C */
03133      ,{      120,       80,      110,       50,      120} /* GC, UG, E, A, G */
03134      ,{      210,      210,      190,      190,      190} /* GC, UG, E, A, U */
03135      }
03136      ,{{      210,      210,      190,      190,      190} /* GC, UG, E, C, E */
03137      ,{      210,      210,      190,      190,      190} /* GC, UG, E, C, A */
03138      ,{      210,      210,      190,      190,      190} /* GC, UG, E, C, C */
03139      ,{      210,      210,      190,      190,      190} /* GC, UG, E, C, G */
03140      ,{      210,      210,      190,      190,      190} /* GC, UG, E, C, U */
03141      }
03142      ,{{      280,      240,      280,      220,      280} /* GC, UG, E, G, E */
03143      ,{      280,      240,      280,      220,      280} /* GC, UG, E, G, A */
03144      ,{      210,      210,      190,      190,      190} /* GC, UG, E, G, C */
03145      ,{      180,       80,       60,      180,      110} /* GC, UG, E, G, G */
03146      ,{      210,      210,      190,      190,      190} /* GC, UG, E, G, U */
03147      }
03148      ,{{      270,      270,      190,      190,      190} /* GC, UG, E, U, E */
03149      ,{      210,      210,      190,      190,      190} /* GC, UG, E, U, A */
03150      ,{      210,      210,      190,      190,      190} /* GC, UG, E, U, C */
03151      ,{      210,      210,      190,      190,      190} /* GC, UG, E, U, G */
03152      ,{      270,      270,      190,      190,      190} /* GC, UG, E, U, U */
03153      }
03154      }
03155      ,{{{      270,      270,      210,      130,      210} /* GC, UG, A, E, E */
03156      ,{      240,      240,      210,      100,      210} /* GC, UG, A, E, A */
03157      ,{      210,      210,      180,      130,      180} /* GC, UG, A, E, C */
03158      ,{      210,      210,      180,       70,      180} /* GC, UG, A, E, G */
03159      ,{      270,      270,      180,      130,      180} /* GC, UG, A, E, U */
03160      }
03161      ,{{      210,      210,      180,       70,      180} /* GC, UG, A, A, E */
03162      ,{      190,      190,      150,       40,      150} /* GC, UG, A, A, A */
03163      ,{      210,      210,      180,       70,      180} /* GC, UG, A, A, C */
03164      ,{       80,       80,       50,      -60,      50} /* GC, UG, A, A, G */
03165      ,{      210,      210,      180,       70,      180} /* GC, UG, A, A, U */
03166      }
03167      ,{{      210,      210,      180,      130,      180} /* GC, UG, A, C, E */
03168      ,{      210,      210,      180,       70,      180} /* GC, UG, A, C, A */
03169      ,{      210,      210,      180,      130,      180} /* GC, UG, A, C, C */
03170      ,{      210,      210,      180,       70,      180} /* GC, UG, A, C, G */
03171      ,{      210,      210,      180,      130,      180} /* GC, UG, A, C, U */
03172      }
03173      ,{{{      240,      240,      210,      100,      210} /* GC, UG, A, G, E */
03174      ,{      240,      240,      210,      100,      210} /* GC, UG, A, G, A */
03175      ,{      210,      210,      180,       70,      180} /* GC, UG, A, G, C */
03176      ,{       80,       80,       50,       70,      50} /* GC, UG, A, G, G */
03177      ,{      210,      210,      180,       70,      180} /* GC, UG, A, G, U */
03178      }
03179      ,{{      270,      270,      180,      130,      180} /* GC, UG, A, U, E */
03180      ,{      210,      210,      180,       70,      180} /* GC, UG, A, U, A */
03181      ,{      210,      210,      180,      130,      180} /* GC, UG, A, U, C */
03182      ,{      210,      210,      180,       70,      180} /* GC, UG, A, U, G */
03183      ,{      270,      270,      180,       70,      180} /* GC, UG, A, U, U */
03184      }
03185      }
03186      ,{{{      280,      220,      280,      220,      280} /* GC, UG, C, E, E */
03187      ,{      280,      220,      280,      220,      280} /* GC, UG, C, E, A */
03188      ,{      190,      190,      190,      190,      190} /* GC, UG, C, E, C */
03189      ,{      190,      190,      190,      190,      190} /* GC, UG, C, E, G */
03190      ,{      190,      190,      190,      190,      190} /* GC, UG, C, E, U */
03191      }
03192      ,{{      190,      190,      190,      190,      190} /* GC, UG, C, A, E */
03193      ,{      160,      150,      150,      150,      160} /* GC, UG, C, A, A */
03194      ,{      190,      190,      190,      190,      190} /* GC, UG, C, A, C */
03195      ,{      120,       50,      110,       50,      120} /* GC, UG, C, A, G */

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03196     , { 190, 190, 190, 190, 190} /* GC,UG,C,A,U */
03197     }
03198     , { { 190, 190, 190, 190, 190} /* GC,UG,C,C,E */
03199     , { 190, 190, 190, 190, 190} /* GC,UG,C,C,A */
03200     , { 190, 190, 190, 190, 190} /* GC,UG,C,C,C */
03201     , { 190, 190, 190, 190, 190} /* GC,UG,C,C,G */
03202     , { 190, 190, 190, 190, 190} /* GC,UG,C,C,U */
03203     }
03204     , { { 280, 220, 280, 220, 280} /* GC,UG,C,G,E */
03205     , { 280, 220, 280, 220, 280} /* GC,UG,C,G,A */
03206     , { 190, 190, 190, 190, 190} /* GC,UG,C,G,C */
03207     , { 60, 60, 60, 60, 60} /* GC,UG,C,G,G */
03208     , { 190, 190, 190, 190, 190} /* GC,UG,C,G,U */
03209     }
03210     , { { 190, 190, 190, 190, 190} /* GC,UG,C,U,E */
03211     , { 190, 190, 190, 190, 190} /* GC,UG,C,U,A */
03212     , { 190, 190, 190, 190, 190} /* GC,UG,C,U,C */
03213     , { 190, 190, 190, 190, 190} /* GC,UG,C,U,G */
03214     , { 190, 190, 190, 190, 190} /* GC,UG,C,U,U */
03215     }
03216     }
03217     , { { { 210, 70, 210, 210, 210} /* GC,UG,G,E,E */
03218     , { 210, 40, 210, 210, 210} /* GC,UG,G,E,A */
03219     , { 180, 70, 180, 50, 180} /* GC,UG,G,E,C */
03220     , { 180, 10, 180, 180, 180} /* GC,UG,G,E,G */
03221     , { 180, 70, 180, 180, 180} /* GC,UG,G,E,U */
03222     }
03223     , { { 180, 10, 180, 50, 180} /* GC,UG,G,A,E */
03224     , { 150, -20, 150, 10, 150} /* GC,UG,G,A,A */
03225     , { 180, 10, 180, 50, 180} /* GC,UG,G,A,C */
03226     , { 50, -120, 50, 40, 50} /* GC,UG,G,A,G */
03227     , { 180, 10, 180, 50, 180} /* GC,UG,G,A,U */
03228     }
03229     , { { 180, 70, 180, 50, 180} /* GC,UG,G,C,E */
03230     , { 180, 10, 180, 50, 180} /* GC,UG,G,C,A */
03231     , { 180, 70, 180, 50, 180} /* GC,UG,G,C,C */
03232     , { 180, 10, 180, 50, 180} /* GC,UG,G,C,G */
03233     , { 180, 70, 180, 50, 180} /* GC,UG,G,C,U */
03234     }
03235     , { { 210, 40, 210, 210, 210} /* GC,UG,G,G,E */
03236     , { 210, 40, 210, 210, 210} /* GC,UG,G,G,A */
03237     , { 180, 10, 180, 50, 180} /* GC,UG,G,G,C */
03238     , { 180, 10, 50, 180, 50} /* GC,UG,G,G,G */
03239     , { 180, 10, 180, 50, 180} /* GC,UG,G,G,U */
03240     }
03241     , { { 180, 70, 180, 180, 180} /* GC,UG,G,U,E */
03242     , { 180, 10, 180, 50, 180} /* GC,UG,G,U,A */
03243     , { 180, 70, 180, 50, 180} /* GC,UG,G,U,C */
03244     , { 180, 10, 180, 50, 180} /* GC,UG,G,U,G */
03245     , { 180, 10, 180, 180, 180} /* GC,UG,G,U,U */
03246     }
03247     }
03248     , { { { 280, 220, 280, 220, 140} /* GC,UG,U,E,E */
03249     , { 280, 220, 280, 220, 140} /* GC,UG,U,E,A */
03250     , { 190, 190, 190, 190, 110} /* GC,UG,U,E,C */
03251     , { 190, 190, 190, 190, 110} /* GC,UG,U,E,G */
03252     , { 190, 190, 190, 190, 110} /* GC,UG,U,E,U */
03253     }
03254     , { { 190, 190, 190, 190, 140} /* GC,UG,U,A,E */
03255     , { 150, 150, 150, 150, 140} /* GC,UG,U,A,A */
03256     , { 190, 190, 190, 190, 110} /* GC,UG,U,A,C */
03257     , { 110, 50, 110, 50, -20} /* GC,UG,U,A,G */
03258     , { 190, 190, 190, 190, 110} /* GC,UG,U,A,U */
03259     }
03260     , { { 190, 190, 190, 190, 110} /* GC,UG,U,C,E */
03261     , { 190, 190, 190, 190, 110} /* GC,UG,U,C,A */
03262     , { 190, 190, 190, 190, 110} /* GC,UG,U,C,C */
03263     , { 190, 190, 190, 190, 110} /* GC,UG,U,C,G */
03264     , { 190, 190, 190, 190, 110} /* GC,UG,U,C,U */
03265     }
03266     , { { 280, 220, 280, 220, 140} /* GC,UG,U,G,E */
03267     , { 280, 220, 280, 220, 140} /* GC,UG,U,G,A */
03268     , { 190, 190, 190, 190, 110} /* GC,UG,U,G,C */
03269     , { 110, 60, 60, 60, 110} /* GC,UG,U,G,G */
03270     , { 190, 190, 190, 190, 110} /* GC,UG,U,G,U */
03271     }
03272     , { { 190, 190, 190, 190, 110} /* GC,UG,U,U,E */
03273     , { 190, 190, 190, 190, 110} /* GC,UG,U,U,A */
03274     , { 190, 190, 190, 190, 110} /* GC,UG,U,U,C */
03275     , { 190, 190, 190, 190, 110} /* GC,UG,U,U,G */
03276     , { 190, 190, 190, 190, 110} /* GC,UG,U,U,U */
03277     }
03278     }
03279     }
03280     , { { { { 210, 210, 190, 190, 200} /* GC,AU,E,E,E */
03281     , { 210, 210, 190, 190, 200} /* GC,AU,E,E,A */
03282     , { 190, 190, 170, 170, 170} /* GC,AU,E,E,C */

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03283      , {      200,      200,      170,      170,      180} /* GC,AU,E,E,G */
03284      , {      190,      190,      170,      170,      170} /* GC,AU,E,E,U */
03285      }
03286      , {{      210,      210,      190,      190,      190} /* GC,AU,E,A,E */
03287      , {      210,      210,      190,      190,      190} /* GC,AU,E,A,A */
03288      , {      190,      190,      160,      160,      170} /* GC,AU,E,A,C */
03289      , {      130,      90,      120,      60,      130} /* GC,AU,E,A,G */
03290      , {      190,      190,      160,      160,      170} /* GC,AU,E,A,U */
03291      }
03292      , {{      200,      200,      170,      170,      180} /* GC,AU,E,C,E */
03293      , {      200,      200,      170,      170,      180} /* GC,AU,E,C,A */
03294      , {      190,      190,      170,      170,      170} /* GC,AU,E,C,C */
03295      , {      200,      200,      170,      170,      180} /* GC,AU,E,C,G */
03296      , {      190,      190,      170,      170,      170} /* GC,AU,E,C,U */
03297      }
03298      , {{      200,      190,      190,      160,      200} /* GC,AU,E,G,E */
03299      , {      200,      160,      190,      130,      200} /* GC,AU,E,G,A */
03300      , {      190,      190,      160,      160,      170} /* GC,AU,E,G,C */
03301      , {      130,      40,      10,      130,      70} /* GC,AU,E,G,G */
03302      , {      190,      190,      160,      160,      170} /* GC,AU,E,G,U */
03303      }
03304      , {{      200,      200,      170,      170,      180} /* GC,AU,E,U,E */
03305      , {      200,      200,      170,      170,      180} /* GC,AU,E,U,A */
03306      , {      190,      190,      170,      170,      170} /* GC,AU,E,U,C */
03307      , {      200,      200,      170,      170,      180} /* GC,AU,E,U,G */
03308      , {      160,      160,      80,      80,      80} /* GC,AU,E,U,U */
03309      }
03310      }
03311      , {{{      210,      210,      180,      110,      180} /* GC,AU,A,E,E */
03312      , {      210,      210,      180,      70,      180} /* GC,AU,A,E,A */
03313      , {      190,      190,      160,      110,      160} /* GC,AU,A,E,C */
03314      , {      200,      200,      170,      60,      170} /* GC,AU,A,E,G */
03315      , {      190,      190,      160,      110,      160} /* GC,AU,A,E,U */
03316      }
03317      , {{      210,      210,      180,      70,      180} /* GC,AU,A,A,E */
03318      , {      210,      210,      180,      70,      180} /* GC,AU,A,A,A */
03319      , {      190,      190,      160,      50,      160} /* GC,AU,A,A,C */
03320      , {      90,      90,      60,      -50,      60} /* GC,AU,A,A,G */
03321      , {      190,      190,      160,      50,      160} /* GC,AU,A,A,U */
03322      }
03323      , {{      200,      200,      170,      110,      170} /* GC,AU,A,C,E */
03324      , {      200,      200,      170,      60,      170} /* GC,AU,A,C,A */
03325      , {      190,      190,      160,      110,      160} /* GC,AU,A,C,C */
03326      , {      200,      200,      170,      60,      170} /* GC,AU,A,C,G */
03327      , {      190,      190,      160,      110,      160} /* GC,AU,A,C,U */
03328      }
03329      , {{      190,      190,      160,      50,      160} /* GC,AU,A,G,E */
03330      , {      160,      160,      130,      20,      130} /* GC,AU,A,G,A */
03331      , {      190,      190,      160,      50,      160} /* GC,AU,A,G,C */
03332      , {      40,      40,      10,      30,      10} /* GC,AU,A,G,G */
03333      , {      190,      190,      160,      50,      160} /* GC,AU,A,G,U */
03334      }
03335      , {{      200,      200,      170,      110,      170} /* GC,AU,A,U,E */
03336      , {      200,      200,      170,      60,      170} /* GC,AU,A,U,A */
03337      , {      190,      190,      160,      110,      160} /* GC,AU,A,U,C */
03338      , {      200,      200,      170,      60,      170} /* GC,AU,A,U,G */
03339      , {      160,      160,      70,      -30,      70} /* GC,AU,A,U,U */
03340      }
03341      }
03342      , {{{      200,      190,      190,      190,      200} /* GC,AU,C,E,E */
03343      , {      200,      190,      190,      190,      200} /* GC,AU,C,E,A */
03344      , {      170,      170,      170,      170,      170} /* GC,AU,C,E,C */
03345      , {      180,      170,      170,      170,      180} /* GC,AU,C,E,G */
03346      , {      170,      170,      170,      170,      170} /* GC,AU,C,E,U */
03347      }
03348      , {{      190,      190,      190,      190,      190} /* GC,AU,C,A,E */
03349      , {      190,      190,      190,      190,      190} /* GC,AU,C,A,A */
03350      , {      170,      160,      160,      160,      170} /* GC,AU,C,A,C */
03351      , {      130,      60,      120,      60,      130} /* GC,AU,C,A,G */
03352      , {      170,      160,      160,      160,      170} /* GC,AU,C,A,U */
03353      }
03354      , {{      180,      170,      170,      170,      180} /* GC,AU,C,C,E */
03355      , {      180,      170,      170,      170,      180} /* GC,AU,C,C,A */
03356      , {      170,      170,      170,      170,      170} /* GC,AU,C,C,C */
03357      , {      180,      170,      170,      170,      180} /* GC,AU,C,C,G */
03358      , {      170,      170,      170,      170,      170} /* GC,AU,C,C,U */
03359      }
03360      , {{      200,      160,      190,      160,      200} /* GC,AU,C,G,E */
03361      , {      200,      130,      190,      130,      200} /* GC,AU,C,G,A */
03362      , {      170,      160,      160,      160,      170} /* GC,AU,C,G,C */
03363      , {      20,      10,      10,      10,      20} /* GC,AU,C,G,G */
03364      , {      170,      160,      160,      160,      170} /* GC,AU,C,G,U */
03365      }
03366      , {{      180,      170,      170,      170,      180} /* GC,AU,C,U,E */
03367      , {      180,      170,      170,      170,      180} /* GC,AU,C,U,A */
03368      , {      170,      170,      170,      170,      170} /* GC,AU,C,U,C */
03369      , {      180,      170,      170,      170,      180} /* GC,AU,C,U,G */

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03370      , {      80,      80,      80,      80,      80} /* GC,AU,C,U,U */
03371      }
03372      }
03373      ,{{{      180,      50,      180,      130,      180} /* GC,AU,G,E,E */
03374      , {      180,      10,      180,      120,      180} /* GC,AU,G,E,A */
03375      , {      160,      50,      160,      30,      160} /* GC,AU,G,E,C */
03376      , {      170,      0,      170,      130,      170} /* GC,AU,G,E,G */
03377      , {      160,      50,      160,      70,      160} /* GC,AU,G,E,U */
03378      }
03379      ,{{{      180,      10,      180,      50,      180} /* GC,AU,G,A,E */
03380      , {      180,      10,      180,      50,      180} /* GC,AU,G,A,A */
03381      , {      160,      -10,      160,      20,      160} /* GC,AU,G,A,C */
03382      , {      60,      -110,      60,      50,      60} /* GC,AU,G,A,G */
03383      , {      160,      -10,      160,      20,      160} /* GC,AU,G,A,U */
03384      }
03385      ,{{{      170,      50,      170,      30,      170} /* GC,AU,G,C,E */
03386      , {      170,      0,      170,      30,      170} /* GC,AU,G,C,A */
03387      , {      160,      50,      160,      30,      160} /* GC,AU,G,C,C */
03388      , {      170,      0,      170,      30,      170} /* GC,AU,G,C,G */
03389      , {      160,      50,      160,      30,      160} /* GC,AU,G,C,U */
03390      }
03391      ,{{{      160,      -10,      160,      130,      160} /* GC,AU,G,G,E */
03392      , {      130,      -40,      130,      120,      130} /* GC,AU,G,G,A */
03393      , {      160,      -10,      160,      20,      160} /* GC,AU,G,G,C */
03394      , {      130,      -30,      10,      130,      10} /* GC,AU,G,G,G */
03395      , {      160,      -10,      160,      20,      160} /* GC,AU,G,G,U */
03396      }
03397      ,{{{      170,      50,      170,      70,      170} /* GC,AU,G,U,E */
03398      , {      170,      0,      170,      30,      170} /* GC,AU,G,U,A */
03399      , {      160,      50,      160,      30,      160} /* GC,AU,G,U,C */
03400      , {      170,      0,      170,      30,      170} /* GC,AU,G,U,G */
03401      , {      70,      -100,      70,      70,      70} /* GC,AU,G,U,U */
03402      }
03403      }
03404      ,{{{      190,      190,      190,      190,      170} /* GC,AU,U,E,E */
03405      , {      190,      190,      190,      190,      170} /* GC,AU,U,E,A */
03406      , {      170,      170,      170,      170,      90} /* GC,AU,U,E,C */
03407      , {      170,      170,      170,      170,      100} /* GC,AU,U,E,G */
03408      , {      170,      170,      170,      170,      90} /* GC,AU,U,E,U */
03409      }
03410      ,{{{      190,      190,      190,      190,      170} /* GC,AU,U,A,E */
03411      , {      190,      190,      190,      190,      170} /* GC,AU,U,A,A */
03412      , {      160,      160,      160,      160,      90} /* GC,AU,U,A,C */
03413      , {      120,      60,      120,      60,      -10} /* GC,AU,U,A,G */
03414      , {      160,      160,      160,      160,      90} /* GC,AU,U,A,U */
03415      }
03416      ,{{{      170,      170,      170,      170,      100} /* GC,AU,U,C,E */
03417      , {      170,      170,      170,      170,      100} /* GC,AU,U,C,A */
03418      , {      170,      170,      170,      170,      90} /* GC,AU,U,C,C */
03419      , {      170,      170,      170,      170,      100} /* GC,AU,U,C,G */
03420      , {      170,      170,      170,      170,      90} /* GC,AU,U,C,U */
03421      }
03422      ,{{{      190,      160,      190,      160,      90} /* GC,AU,U,G,E */
03423      , {      190,      130,      190,      130,      60} /* GC,AU,U,G,A */
03424      , {      160,      160,      160,      160,      90} /* GC,AU,U,G,C */
03425      , {      70,      10,      10,      10,      70} /* GC,AU,U,G,G */
03426      , {      160,      160,      160,      160,      90} /* GC,AU,U,G,U */
03427      }
03428      ,{{{      170,      170,      170,      170,      100} /* GC,AU,U,U,E */
03429      , {      170,      170,      170,      170,      100} /* GC,AU,U,U,A */
03430      , {      170,      170,      170,      170,      90} /* GC,AU,U,U,C */
03431      , {      170,      170,      170,      170,      100} /* GC,AU,U,U,G */
03432      , {      80,      80,      80,      80,      0} /* GC,AU,U,U,U */
03433      }
03434      }
03435      }
03436      ,{{{      210,      210,      190,      190,      190} /* GC,UA,E,E,E */
03437      , {      210,      210,      190,      190,      190} /* GC,UA,E,E,A */
03438      , {      210,      210,      190,      190,      190} /* GC,UA,E,E,C */
03439      , {      210,      210,      190,      190,      190} /* GC,UA,E,E,G */
03440      , {      210,      210,      190,      190,      190} /* GC,UA,E,E,U */
03441      }
03442      ,{{{      210,      210,      190,      190,      190} /* GC,UA,E,A,E */
03443      , {      210,      210,      190,      190,      190} /* GC,UA,E,A,A */
03444      , {      170,      170,      140,      140,      150} /* GC,UA,E,A,C */
03445      , {      150,      110,      140,      80,      150} /* GC,UA,E,A,G */
03446      , {      170,      170,      140,      140,      150} /* GC,UA,E,A,U */
03447      }
03448      ,{{{      210,      210,      190,      190,      190} /* GC,UA,E,C,E */
03449      , {      210,      210,      190,      190,      190} /* GC,UA,E,C,A */
03450      , {      210,      210,      190,      190,      190} /* GC,UA,E,C,C */
03451      , {      210,      210,      190,      190,      190} /* GC,UA,E,C,G */
03452      , {      210,      210,      190,      190,      190} /* GC,UA,E,C,U */
03453      }
03454      ,{{{      170,      170,      150,      150,      160} /* GC,UA,E,G,E */
03455      , {      160,      120,      150,      90,      160} /* GC,UA,E,G,A */
03456      , {      170,      170,      140,      140,      150} /* GC,UA,E,G,C */
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03457 , { 150, 60, 30, 150, 90} /* GC,UA,E,G,G */
03458 , { 170, 170, 140, 140, 150} /* GC,UA,E,G,U */
03459 }
03460 , {{ 210, 210, 190, 190, 190} /* GC,UA,E,U,E */
03461 , { 210, 210, 190, 190, 190} /* GC,UA,E,U,A */
03462 , { 180, 180, 160, 160, 160} /* GC,UA,E,U,C */
03463 , { 210, 210, 190, 190, 190} /* GC,UA,E,U,G */
03464 , { 190, 190, 100, 100, 110} /* GC,UA,E,U,U */
03465 }
03466 }
03467 , {{{ 210, 210, 180, 130, 180} /* GC,UA,A,E,E */
03468 , { 210, 210, 180, 70, 180} /* GC,UA,A,E,A */
03469 , { 210, 210, 180, 130, 180} /* GC,UA,A,E,C */
03470 , { 210, 210, 180, 70, 180} /* GC,UA,A,E,G */
03471 , { 210, 210, 180, 130, 180} /* GC,UA,A,E,U */
03472 }
03473 , {{ 210, 210, 180, 70, 180} /* GC,UA,A,A,E */
03474 , { 210, 210, 180, 70, 180} /* GC,UA,A,A,A */
03475 , { 170, 170, 140, 30, 140} /* GC,UA,A,A,C */
03476 , { 110, 110, 80, -30, 80} /* GC,UA,A,A,G */
03477 , { 170, 170, 140, 30, 140} /* GC,UA,A,A,U */
03478 }
03479 , {{ 210, 210, 180, 130, 180} /* GC,UA,A,C,E */
03480 , { 210, 210, 180, 70, 180} /* GC,UA,A,C,A */
03481 , { 210, 210, 180, 130, 180} /* GC,UA,A,C,C */
03482 , { 210, 210, 180, 70, 180} /* GC,UA,A,C,G */
03483 , { 210, 210, 180, 130, 180} /* GC,UA,A,C,U */
03484 }
03485 , {{ 170, 170, 140, 50, 140} /* GC,UA,A,G,E */
03486 , { 120, 120, 90, -20, 90} /* GC,UA,A,G,A */
03487 , { 170, 170, 140, 30, 140} /* GC,UA,A,G,C */
03488 , { 60, 60, 30, 50, 30} /* GC,UA,A,G,G */
03489 , { 170, 170, 140, 30, 140} /* GC,UA,A,G,U */
03490 }
03491 , {{ 210, 210, 180, 100, 180} /* GC,UA,A,U,E */
03492 , { 210, 210, 180, 70, 180} /* GC,UA,A,U,A */
03493 , { 180, 180, 150, 100, 150} /* GC,UA,A,U,C */
03494 , { 210, 210, 180, 70, 180} /* GC,UA,A,U,G */
03495 , { 190, 190, 100, -10, 100} /* GC,UA,A,U,U */
03496 }
03497 }
03498 , {{{ 190, 190, 190, 190, 190} /* GC,UA,C,E,E */
03499 , { 190, 190, 190, 190, 190} /* GC,UA,C,E,A */
03500 , { 190, 190, 190, 190, 190} /* GC,UA,C,E,C */
03501 , { 190, 190, 190, 190, 190} /* GC,UA,C,E,G */
03502 , { 190, 190, 190, 190, 190} /* GC,UA,C,E,U */
03503 }
03504 , {{ 190, 190, 190, 190, 190} /* GC,UA,C,A,E */
03505 , { 190, 190, 190, 190, 190} /* GC,UA,C,A,A */
03506 , { 150, 140, 140, 140, 150} /* GC,UA,C,A,C */
03507 , { 150, 80, 140, 80, 150} /* GC,UA,C,A,G */
03508 , { 150, 140, 140, 140, 150} /* GC,UA,C,A,U */
03509 }
03510 , {{{ 190, 190, 190, 190, 190} /* GC,UA,C,C,E */
03511 , { 190, 190, 190, 190, 190} /* GC,UA,C,C,A */
03512 , { 190, 190, 190, 190, 190} /* GC,UA,C,C,C */
03513 , { 190, 190, 190, 190, 190} /* GC,UA,C,C,G */
03514 , { 190, 190, 190, 190, 190} /* GC,UA,C,C,U */
03515 }
03516 , {{ 160, 140, 150, 140, 160} /* GC,UA,C,G,E */
03517 , { 160, 90, 150, 90, 160} /* GC,UA,C,G,A */
03518 , { 150, 140, 140, 140, 150} /* GC,UA,C,G,C */
03519 , { 40, 30, 30, 30, 40} /* GC,UA,C,G,G */
03520 , { 150, 140, 140, 140, 150} /* GC,UA,C,G,U */
03521 }
03522 , {{ 190, 190, 190, 190, 190} /* GC,UA,C,U,E */
03523 , { 190, 190, 190, 190, 190} /* GC,UA,C,U,A */
03524 , { 160, 160, 160, 160, 160} /* GC,UA,C,U,C */
03525 , { 190, 190, 190, 190, 190} /* GC,UA,C,U,G */
03526 , { 110, 100, 100, 100, 110} /* GC,UA,C,U,U */
03527 }
03528 }
03529 , {{{ 180, 70, 180, 150, 180} /* GC,UA,G,E,E */
03530 , { 180, 10, 180, 80, 180} /* GC,UA,G,E,A */
03531 , { 180, 70, 180, 50, 180} /* GC,UA,G,E,C */
03532 , { 180, 10, 180, 150, 180} /* GC,UA,G,E,G */
03533 , { 180, 70, 180, 90, 180} /* GC,UA,G,E,U */
03534 }
03535 , {{ 180, 10, 180, 70, 180} /* GC,UA,G,A,E */
03536 , { 180, 10, 180, 50, 180} /* GC,UA,G,A,A */
03537 , { 140, -30, 140, 0, 140} /* GC,UA,G,A,C */
03538 , { 80, -90, 80, 70, 80} /* GC,UA,G,A,G */
03539 , { 140, -30, 140, 0, 140} /* GC,UA,G,A,U */
03540 }
03541 , {{ 180, 70, 180, 50, 180} /* GC,UA,G,C,E */
03542 , { 180, 10, 180, 50, 180} /* GC,UA,G,C,A */
03543 , { 180, 70, 180, 50, 180} /* GC,UA,G,C,C */

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03544      , {      180,      10,      180,      50,      180} /* GC,UA,G,C,G */
03545      , {      180,      70,      180,      50,      180} /* GC,UA,G,C,U */
03546      }
03547      , {{      150,     -10,      140,      150,      140} /* GC,UA,G,G,E */
03548      , {          90,     -80,       90,       80,       90} /* GC,UA,G,G,A */
03549      , {      140,     -30,      140,       0,      140} /* GC,UA,G,G,C */
03550      , {      150,     -10,       30,      150,       30} /* GC,UA,G,G,G */
03551      , {      140,     -30,      140,       0,      140} /* GC,UA,G,G,U */
03552      }
03553      , {{      180,       40,      180,       90,      180} /* GC,UA,G,U,E */
03554      , {      180,       10,      180,       50,      180} /* GC,UA,G,U,A */
03555      , {      150,       40,      150,       20,      150} /* GC,UA,G,U,C */
03556      , {      180,       10,      180,       50,      180} /* GC,UA,G,U,G */
03557      , {      100,     -70,      100,       90,      100} /* GC,UA,G,U,U */
03558      }
03559      }
03560      , {{{      190,      190,      190,      190,      170} /* GC,UA,U,E,E */
03561      , {      190,      190,      190,      190,      170} /* GC,UA,U,E,A */
03562      , {      190,      190,      190,      190,      110} /* GC,UA,U,E,C */
03563      , {      190,      190,      190,      190,      110} /* GC,UA,U,E,G */
03564      , {      190,      190,      190,      190,      110} /* GC,UA,U,E,U */
03565      }
03566      , {{{      190,      190,      190,      190,      170} /* GC,UA,U,A,E */
03567      , {      190,      190,      190,      190,      170} /* GC,UA,U,A,A */
03568      , {      140,      140,      140,      140,       70} /* GC,UA,U,A,C */
03569      , {      140,       80,      140,       80,       10} /* GC,UA,U,A,G */
03570      , {      140,      140,      140,      140,       70} /* GC,UA,U,A,U */
03571      }
03572      , {{{      190,      190,      190,      190,      110} /* GC,UA,U,C,E */
03573      , {      190,      190,      190,      190,      110} /* GC,UA,U,C,A */
03574      , {      190,      190,      190,      190,      110} /* GC,UA,U,C,C */
03575      , {      190,      190,      190,      190,      110} /* GC,UA,U,C,G */
03576      , {      190,      190,      190,      190,      110} /* GC,UA,U,C,U */
03577      }
03578      , {{{      150,      140,      150,      140,       90} /* GC,UA,U,G,E */
03579      , {      150,       90,      150,       90,       20} /* GC,UA,U,G,A */
03580      , {      140,      140,      140,      140,       70} /* GC,UA,U,G,C */
03581      , {          90,       30,       30,       30,       90} /* GC,UA,U,G,G */
03582      , {      140,      140,      140,      140,       70} /* GC,UA,U,G,U */
03583      }
03584      , {{{      190,      190,      190,      190,      110} /* GC,UA,U,U,E */
03585      , {      190,      190,      190,      190,      110} /* GC,UA,U,U,A */
03586      , {      160,      160,      160,      160,       80} /* GC,UA,U,U,C */
03587      , {      190,      190,      190,      190,      110} /* GC,UA,U,U,G */
03588      , {      100,      100,      100,      100,       30} /* GC,UA,U,U,U */
03589      }
03590      }
03591      }
03592      , {{{      300,      300,      280,      250,      280} /* GC,NN,E,E,E */
03593      , {      280,      280,      280,      250,      280} /* GC,NN,E,E,A */
03594      , {      240,      240,      220,      220,      220} /* GC,NN,E,E,C */
03595      , {      240,      240,      220,      220,      220} /* GC,NN,E,E,G */
03596      , {      300,      300,      220,      220,      220} /* GC,NN,E,E,U */
03597      }
03598      , {{      280,      280,      250,      250,      260} /* GC,NN,E,A,E */
03599      , {      280,      280,      250,      250,      260} /* GC,NN,E,A,A */
03600      , {      240,      240,      220,      220,      220} /* GC,NN,E,A,C */
03601      , {      200,      160,      200,      140,      200} /* GC,NN,E,A,G */
03602      , {      240,      240,      220,      220,      220} /* GC,NN,E,A,U */
03603      }
03604      , {{      240,      240,      220,      220,      220} /* GC,NN,E,C,E */
03605      , {      240,      240,      220,      220,      220} /* GC,NN,E,C,A */
03606      , {      240,      240,      220,      220,      220} /* GC,NN,E,C,C */
03607      , {      240,      240,      220,      220,      220} /* GC,NN,E,C,G */
03608      , {      240,      240,      220,      220,      220} /* GC,NN,E,C,U */
03609      }
03610      , {{      280,      240,      280,      220,      280} /* GC,NN,E,G,E */
03611      , {      280,      240,      280,      220,      280} /* GC,NN,E,G,A */
03612      , {      240,      240,      220,      220,      220} /* GC,NN,E,G,C */
03613      , {      210,      110,       90,      210,      140} /* GC,NN,E,G,G */
03614      , {      240,      240,      220,      220,      220} /* GC,NN,E,G,U */
03615      }
03616      , {{      300,      300,      220,      220,      220} /* GC,NN,E,U,E */
03617      , {      240,      240,      220,      220,      220} /* GC,NN,E,U,A */
03618      , {      240,      240,      220,      220,      220} /* GC,NN,E,U,C */
03619      , {      240,      240,      220,      220,      220} /* GC,NN,E,U,G */
03620      , {      300,      300,      220,      220,      220} /* GC,NN,E,U,U */
03621      }
03622      }
03623      , {{{      300,      300,      250,      160,      250} /* GC,NN,A,E,E */
03624      , {      280,      280,      250,      140,      250} /* GC,NN,A,E,A */
03625      , {      240,      240,      210,      160,      210} /* GC,NN,A,E,C */
03626      , {      240,      240,      210,      100,      210} /* GC,NN,A,E,G */
03627      , {      300,      300,      210,      160,      210} /* GC,NN,A,E,U */
03628      }
03629      , {{      280,      280,      250,      140,      250} /* GC,NN,A,A,E */
03630      , {      280,      280,      250,      140,      250} /* GC,NN,A,A,A */

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03631      , {      240,      240,      210,      100,      210} /* GC, NN, A, A, C */
03632      , {      160,      160,      130,        20,      130} /* GC, NN, A, A, G */
03633      , {      240,      240,      210,      100,      210} /* GC, NN, A, A, U */
03634      }
03635      , { {      240,      240,      210,      160,      210} /* GC, NN, A, C, E */
03636      , {      240,      240,      210,      100,      210} /* GC, NN, A, C, A */
03637      , {      240,      240,      210,      160,      210} /* GC, NN, A, C, C */
03638      , {      240,      240,      210,      100,      210} /* GC, NN, A, C, G */
03639      , {      240,      240,      210,      160,      210} /* GC, NN, A, C, U */
03640      }
03641      , { {      240,      240,      210,      100,      210} /* GC, NN, A, G, E */
03642      , {      240,      240,      210,      100,      210} /* GC, NN, A, G, A */
03643      , {      240,      240,      210,      100,      210} /* GC, NN, A, G, C */
03644      , {      110,      110,        80,      100,        80} /* GC, NN, A, G, G */
03645      , {      240,      240,      210,      100,      210} /* GC, NN, A, G, U */
03646      }
03647      , { {      300,      300,      210,      160,      210} /* GC, NN, A, U, E */
03648      , {      240,      240,      210,      100,      210} /* GC, NN, A, U, A */
03649      , {      240,      240,      210,      160,      210} /* GC, NN, A, U, C */
03650      , {      240,      240,      210,      100,      210} /* GC, NN, A, U, G */
03651      , {      300,      300,      210,      140,      210} /* GC, NN, A, U, U */
03652      }
03653      }
03654      , { { {      280,      250,      280,      250,      280} /* GC, NN, C, E, E */
03655      , {      280,      250,      280,      250,      280} /* GC, NN, C, E, A */
03656      , {      220,      220,      220,      220,      220} /* GC, NN, C, E, C */
03657      , {      220,      220,      220,      220,      220} /* GC, NN, C, E, G */
03658      , {      220,      220,      220,      220,      220} /* GC, NN, C, E, U */
03659      }
03660      , { {      260,      250,      250,      250,      260} /* GC, NN, C, A, E */
03661      , {      260,      250,      250,      250,      260} /* GC, NN, C, A, A */
03662      , {      220,      220,      220,      220,      220} /* GC, NN, C, A, C */
03663      , {      200,      140,      200,      140,      200} /* GC, NN, C, A, G */
03664      , {      220,      220,      220,      220,      220} /* GC, NN, C, A, U */
03665      }
03666      , { {      220,      220,      220,      220,      220} /* GC, NN, C, C, E */
03667      , {      220,      220,      220,      220,      220} /* GC, NN, C, C, A */
03668      , {      220,      220,      220,      220,      220} /* GC, NN, C, C, C */
03669      , {      220,      220,      220,      220,      220} /* GC, NN, C, C, G */
03670      , {      220,      220,      220,      220,      220} /* GC, NN, C, C, U */
03671      }
03672      , { {      280,      220,      280,      220,      280} /* GC, NN, C, G, E */
03673      , {      280,      220,      280,      220,      280} /* GC, NN, C, G, A */
03674      , {      220,      220,      220,      220,      220} /* GC, NN, C, G, C */
03675      , {        90,        90,        90,        90,        90} /* GC, NN, C, G, G */
03676      , {      220,      220,      220,      220,      220} /* GC, NN, C, G, U */
03677      }
03678      , { {      220,      220,      220,      220,      220} /* GC, NN, C, U, E */
03679      , {      220,      220,      220,      220,      220} /* GC, NN, C, U, A */
03680      , {      220,      220,      220,      220,      220} /* GC, NN, C, U, C */
03681      , {      220,      220,      220,      220,      220} /* GC, NN, C, U, G */
03682      , {      220,      220,      220,      220,      220} /* GC, NN, C, U, U */
03683      }
03684      }
03685      , { { {      250,      100,      250,      210,      250} /* GC, NN, G, E, E */
03686      , {      250,        70,      250,      210,      250} /* GC, NN, G, E, A */
03687      , {      210,      100,      210,        80,      210} /* GC, NN, G, E, C */
03688      , {      210,        40,      210,      210,      210} /* GC, NN, G, E, G */
03689      , {      210,      100,      210,      210,      210} /* GC, NN, G, E, U */
03690      }
03691      , { {      250,        70,      250,      130,      250} /* GC, NN, G, A, E */
03692      , {      250,        70,      250,      110,      250} /* GC, NN, G, A, A */
03693      , {      210,        40,      210,        80,      210} /* GC, NN, G, A, C */
03694      , {      130,      -40,      130,      130,      130} /* GC, NN, G, A, G */
03695      , {      210,        40,      210,        80,      210} /* GC, NN, G, A, U */
03696      }
03697      , { {      210,      100,      210,        80,      210} /* GC, NN, G, C, E */
03698      , {      210,        40,      210,        80,      210} /* GC, NN, G, C, A */
03699      , {      210,      100,      210,        80,      210} /* GC, NN, G, C, C */
03700      , {      210,        40,      210,        80,      210} /* GC, NN, G, C, G */
03701      , {      210,      100,      210,        80,      210} /* GC, NN, G, C, U */
03702      }
03703      , { {      210,        40,      210,      210,      210} /* GC, NN, G, G, E */
03704      , {      210,        40,      210,      210,      210} /* GC, NN, G, G, A */
03705      , {      210,        40,      210,        80,      210} /* GC, NN, G, G, C */
03706      , {      210,        40,        80,      210,        80} /* GC, NN, G, G, G */
03707      , {      210,        40,      210,        80,      210} /* GC, NN, G, G, U */
03708      }
03709      , { {      210,      100,      210,      210,      210} /* GC, NN, G, U, E */
03710      , {      210,        40,      210,        80,      210} /* GC, NN, G, U, A */
03711      , {      210,      100,      210,        80,      210} /* GC, NN, G, U, C */
03712      , {      210,        40,      210,        80,      210} /* GC, NN, G, U, G */
03713      , {      210,        50,      210,      210,      210} /* GC, NN, G, U, U */
03714      }
03715      }
03716      , { { {      280,      250,      280,      250,      240} /* GC, NN, U, E, E */
03717      , {      280,      250,      280,      250,      240} /* GC, NN, U, E, A */

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03718 , { 220, 220, 220, 220, 140} /* GC,NN,U,E,C */
03719 , { 220, 220, 220, 220, 140} /* GC,NN,U,E,G */
03720 , { 220, 220, 220, 220, 140} /* GC,NN,U,E,U */
03721 }
03722 , { { 250, 250, 250, 250, 240} /* GC,NN,U,A,E */
03723 , { 250, 250, 250, 250, 240} /* GC,NN,U,A,A */
03724 , { 220, 220, 220, 220, 140} /* GC,NN,U,A,C */
03725 , { 200, 140, 200, 140, 90} /* GC,NN,U,A,G */
03726 , { 220, 220, 220, 220, 140} /* GC,NN,U,A,U */
03727 }
03728 , { { 220, 220, 220, 220, 140} /* GC,NN,U,C,E */
03729 , { 220, 220, 220, 220, 140} /* GC,NN,U,C,A */
03730 , { 220, 220, 220, 220, 140} /* GC,NN,U,C,C */
03731 , { 220, 220, 220, 220, 140} /* GC,NN,U,C,G */
03732 , { 220, 220, 220, 220, 140} /* GC,NN,U,C,U */
03733 }
03734 , { { 280, 220, 280, 220, 140} /* GC,NN,U,G,E */
03735 , { 280, 220, 280, 220, 140} /* GC,NN,U,G,A */
03736 , { 220, 220, 220, 220, 140} /* GC,NN,U,G,C */
03737 , { 140, 90, 90, 90, 140} /* GC,NN,U,G,G */
03738 , { 220, 220, 220, 220, 140} /* GC,NN,U,G,U */
03739 }
03740 , { { 220, 220, 220, 220, 140} /* GC,NN,U,U,E */
03741 , { 220, 220, 220, 220, 140} /* GC,NN,U,U,A */
03742 , { 220, 220, 220, 220, 140} /* GC,NN,U,U,C */
03743 , { 220, 220, 220, 220, 140} /* GC,NN,U,U,G */
03744 , { 220, 220, 220, 220, 140} /* GC,NN,U,U,U */
03745 }
03746 }
03747 }
03748 }
03749 , { { { INF, INF, INF, INF, INF} /* GU,NP,E,E,E */
03750 , { INF, INF, INF, INF, INF} /* GU,NP,E,E,A */
03751 , { INF, INF, INF, INF, INF} /* GU,NP,E,E,C */
03752 , { INF, INF, INF, INF, INF} /* GU,NP,E,E,G */
03753 , { INF, INF, INF, INF, INF} /* GU,NP,E,E,U */
03754 }
03755 , { { INF, INF, INF, INF, INF} /* GU,NP,E,A,E */
03756 , { INF, INF, INF, INF, INF} /* GU,NP,E,A,A */
03757 , { INF, INF, INF, INF, INF} /* GU,NP,E,A,C */
03758 , { INF, INF, INF, INF, INF} /* GU,NP,E,A,G */
03759 , { INF, INF, INF, INF, INF} /* GU,NP,E,A,U */
03760 }
03761 , { { INF, INF, INF, INF, INF} /* GU,NP,E,C,E */
03762 , { INF, INF, INF, INF, INF} /* GU,NP,E,C,A */
03763 , { INF, INF, INF, INF, INF} /* GU,NP,E,C,C */
03764 , { INF, INF, INF, INF, INF} /* GU,NP,E,C,G */
03765 , { INF, INF, INF, INF, INF} /* GU,NP,E,C,U */
03766 }
03767 , { { INF, INF, INF, INF, INF} /* GU,NP,E,G,E */
03768 , { INF, INF, INF, INF, INF} /* GU,NP,E,G,A */
03769 , { INF, INF, INF, INF, INF} /* GU,NP,E,G,C */
03770 , { INF, INF, INF, INF, INF} /* GU,NP,E,G,G */
03771 , { INF, INF, INF, INF, INF} /* GU,NP,E,G,U */
03772 }
03773 , { { INF, INF, INF, INF, INF} /* GU,NP,E,U,E */
03774 , { INF, INF, INF, INF, INF} /* GU,NP,E,U,A */
03775 , { INF, INF, INF, INF, INF} /* GU,NP,E,U,C */
03776 , { INF, INF, INF, INF, INF} /* GU,NP,E,U,G */
03777 , { INF, INF, INF, INF, INF} /* GU,NP,E,U,U */
03778 }
03779 }
03780 , { { { INF, INF, INF, INF, INF} /* GU,NP,A,E,E */
03781 , { INF, INF, INF, INF, INF} /* GU,NP,A,E,A */
03782 , { INF, INF, INF, INF, INF} /* GU,NP,A,E,C */
03783 , { INF, INF, INF, INF, INF} /* GU,NP,A,E,G */
03784 , { INF, INF, INF, INF, INF} /* GU,NP,A,E,U */
03785 }
03786 , { { INF, INF, INF, INF, INF} /* GU,NP,A,A,E */
03787 , { INF, INF, INF, INF, INF} /* GU,NP,A,A,A */
03788 , { INF, INF, INF, INF, INF} /* GU,NP,A,A,C */
03789 , { INF, INF, INF, INF, INF} /* GU,NP,A,A,G */
03790 , { INF, INF, INF, INF, INF} /* GU,NP,A,A,U */
03791 }
03792 , { { INF, INF, INF, INF, INF} /* GU,NP,A,C,E */
03793 , { INF, INF, INF, INF, INF} /* GU,NP,A,C,A */
03794 , { INF, INF, INF, INF, INF} /* GU,NP,A,C,C */
03795 , { INF, INF, INF, INF, INF} /* GU,NP,A,C,G */
03796 , { INF, INF, INF, INF, INF} /* GU,NP,A,C,U */
03797 }
03798 , { { INF, INF, INF, INF, INF} /* GU,NP,A,G,E */
03799 , { INF, INF, INF, INF, INF} /* GU,NP,A,G,A */
03800 , { INF, INF, INF, INF, INF} /* GU,NP,A,G,C */
03801 , { INF, INF, INF, INF, INF} /* GU,NP,A,G,G */
03802 , { INF, INF, INF, INF, INF} /* GU,NP,A,G,U */
03803 }
03804 , { { INF, INF, INF, INF, INF} /* GU,NP,A,U,E */
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03805      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,A */
03806      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,C */
03807      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,G */
03808      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,U */
03809      }
03810    }
03811  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,E */
03812      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,A */
03813      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,C */
03814      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,G */
03815      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,U */
03816      }
03817  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,E */
03818      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,A */
03819      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,C */
03820      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,G */
03821      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,U */
03822      }
03823  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,E */
03824      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,A */
03825      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,C */
03826      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,G */
03827      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,U */
03828      }
03829  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,E */
03830      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,A */
03831      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,C */
03832      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,G */
03833      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,U */
03834      }
03835  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,E */
03836      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,A */
03837      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,C */
03838      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,G */
03839      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,U */
03840      }
03841    }
03842  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,E */
03843      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,A */
03844      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,C */
03845      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,G */
03846      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,U */
03847      }
03848  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,E */
03849      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,A */
03850      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,C */
03851      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,G */
03852      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,U */
03853      }
03854  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,E */
03855      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,A */
03856      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,C */
03857      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,G */
03858      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,U */
03859      }
03860  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,E */
03861      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,A */
03862      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,C */
03863      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,G */
03864      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,U */
03865      }
03866  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,E */
03867      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,A */
03868      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,C */
03869      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,G */
03870      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,U */
03871      }
03872    }
03873  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,E */
03874      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,A */
03875      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,C */
03876      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,G */
03877      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,U */
03878      }
03879  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,E */
03880      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,A */
03881      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,C */
03882      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,G */
03883      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,U */
03884      }
03885  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,E */
03886      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,A */
03887      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,C */
03888      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,G */
03889      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,U */
03890      }
03891  ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,E */

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03892     , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,A */
03893     , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,C */
03894     , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,G */
03895     , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,U */
03896     }
03897     , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,E */
03898     , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,A */
03899     , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,C */
03900     , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,G */
03901     , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,U */
03902     }
03903     }
03904     }
03905     , {{{      300,      300,      270,      270,      290} /* GU,CG,E,E,E */
03906     , {      300,      300,      270,      270,      290} /* GU,CG,E,E,A */
03907     , {      290,      290,      250,      270,      250} /* GU,CG,E,E,C */
03908     , {      300,      300,      270,      270,      270} /* GU,CG,E,E,G */
03909     , {      270,      270,      240,      260,      240} /* GU,CG,E,E,U */
03910     }
03911     , {{      290,      270,      230,      230,      290} /* GU,CG,E,A,E */
03912     , {      290,      270,      230,      230,      290} /* GU,CG,E,A,A */
03913     , {      260,      260,      220,      220,      220} /* GU,CG,E,A,C */
03914     , {      190,      170,      190,      130,      190} /* GU,CG,E,A,G */
03915     , {      260,      260,      220,      220,      220} /* GU,CG,E,A,U */
03916     }
03917     , {{      300,      300,      270,      270,      270} /* GU,CG,E,C,E */
03918     , {      300,      300,      270,      270,      270} /* GU,CG,E,C,A */
03919     , {      290,      290,      250,      270,      250} /* GU,CG,E,C,C */
03920     , {      300,      300,      270,      270,      270} /* GU,CG,E,C,G */
03921     , {      270,      270,      240,      260,      240} /* GU,CG,E,C,U */
03922     }
03923     , {{      260,      260,      220,      220,      220} /* GU,CG,E,G,E */
03924     , {      190,      170,      190,      130,      190} /* GU,CG,E,G,A */
03925     , {      260,      260,      220,      220,      220} /* GU,CG,E,G,C */
03926     , {      210,      130,      80,      210,      210} /* GU,CG,E,G,G */
03927     , {      260,      260,      220,      220,      220} /* GU,CG,E,G,U */
03928     }
03929     , {{      300,      300,      270,      270,      270} /* GU,CG,E,U,E */
03930     , {      300,      300,      270,      270,      270} /* GU,CG,E,U,A */
03931     , {      270,      270,      240,      260,      240} /* GU,CG,E,U,C */
03932     , {      300,      300,      270,      270,      270} /* GU,CG,E,U,G */
03933     , {      240,      240,      150,      150,      150} /* GU,CG,E,U,U */
03934     }
03935     }
03936     , {{{      300,      300,      270,      270,      270} /* GU,CG,A,E,E */
03937     , {      300,      300,      270,      230,      270} /* GU,CG,A,E,A */
03938     , {      290,      290,      250,      270,      250} /* GU,CG,A,E,C */
03939     , {      300,      300,      270,      230,      270} /* GU,CG,A,E,G */
03940     , {      270,      270,      240,      260,      240} /* GU,CG,A,E,U */
03941     }
03942     , {{      270,      270,      230,      190,      230} /* GU,CG,A,A,E */
03943     , {      270,      270,      230,      190,      230} /* GU,CG,A,A,A */
03944     , {      260,      260,      220,      180,      220} /* GU,CG,A,A,C */
03945     , {      170,      170,      130,      90,      130} /* GU,CG,A,A,G */
03946     , {      260,      260,      220,      180,      220} /* GU,CG,A,A,U */
03947     }
03948     , {{      300,      300,      270,      270,      270} /* GU,CG,A,C,E */
03949     , {      300,      300,      270,      230,      270} /* GU,CG,A,C,A */
03950     , {      290,      290,      250,      270,      250} /* GU,CG,A,C,C */
03951     , {      300,      300,      270,      230,      270} /* GU,CG,A,C,G */
03952     , {      270,      270,      240,      260,      240} /* GU,CG,A,C,U */
03953     }
03954     , {{      260,      260,      220,      180,      220} /* GU,CG,A,G,E */
03955     , {      170,      170,      130,      90,      130} /* GU,CG,A,G,A */
03956     , {      260,      260,      220,      180,      220} /* GU,CG,A,G,C */
03957     , {      170,      110,      80,      170,      80} /* GU,CG,A,G,G */
03958     , {      260,      260,      220,      180,      220} /* GU,CG,A,G,U */
03959     }
03960     , {{      300,      300,      270,      260,      270} /* GU,CG,A,U,E */
03961     , {      300,      300,      270,      230,      270} /* GU,CG,A,U,A */
03962     , {      270,      270,      240,      260,      240} /* GU,CG,A,U,C */
03963     , {      300,      300,      270,      230,      270} /* GU,CG,A,U,G */
03964     , {      240,      240,      150,      110,      150} /* GU,CG,A,U,U */
03965     }
03966     }
03967     , {{{      270,      270,      270,      270,      270} /* GU,CG,C,E,E */
03968     , {      270,      270,      270,      270,      270} /* GU,CG,C,E,A */
03969     , {      250,      250,      250,      250,      250} /* GU,CG,C,E,C */
03970     , {      270,      270,      270,      270,      270} /* GU,CG,C,E,G */
03971     , {      240,      240,      240,      240,      240} /* GU,CG,C,E,U */
03972     }
03973     , {{      230,      230,      230,      230,      230} /* GU,CG,C,A,E */
03974     , {      230,      230,      230,      230,      230} /* GU,CG,C,A,A */
03975     , {      220,      220,      220,      220,      220} /* GU,CG,C,A,C */
03976     , {      190,      130,      190,      130,      190} /* GU,CG,C,A,G */
03977     , {      220,      220,      220,      220,      220} /* GU,CG,C,A,U */
03978     }

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03979 ,{{ 270, 270, 270, 270, 270} /* GU,CG,C,C,E */
03980 ,{ 270, 270, 270, 270, 270} /* GU,CG,C,C,A */
03981 ,{ 250, 250, 250, 250, 250} /* GU,CG,C,C,C */
03982 ,{ 270, 270, 270, 270, 270} /* GU,CG,C,C,G */
03983 ,{ 240, 240, 240, 240, 240} /* GU,CG,C,C,U */
03984 }
03985 ,{{ 220, 220, 220, 220, 220} /* GU,CG,C,G,E */
03986 ,{ 190, 130, 190, 130, 190} /* GU,CG,C,G,A */
03987 ,{ 220, 220, 220, 220, 220} /* GU,CG,C,G,C */
03988 ,{ 80, 80, 80, 80, 80} /* GU,CG,C,G,G */
03989 ,{ 220, 220, 220, 220, 220} /* GU,CG,C,G,U */
03990 }
03991 ,{{ 270, 270, 270, 270, 270} /* GU,CG,C,U,E */
03992 ,{ 270, 270, 270, 270, 270} /* GU,CG,C,U,A */
03993 ,{ 240, 240, 240, 240, 240} /* GU,CG,C,U,C */
03994 ,{ 270, 270, 270, 270, 270} /* GU,CG,C,U,G */
03995 ,{ 150, 150, 150, 150, 150} /* GU,CG,C,U,U */
03996 }
03997 }
03998 ,{{{ 270, 230, 270, 210, 270} /* GU,CG,G,E,E */
03999 ,{ 270, 190, 270, 140, 270} /* GU,CG,G,E,A */
04000 ,{ 250, 230, 250, 120, 250} /* GU,CG,G,E,C */
04001 ,{ 270, 190, 270, 150, 270} /* GU,CG,G,E,G */
04002 ,{ 240, 220, 240, 150, 240} /* GU,CG,G,E,U */
04003 }
04004 ,{{ 230, 150, 230, 130, 230} /* GU,CG,G,A,E */
04005 ,{ 230, 150, 230, 100, 230} /* GU,CG,G,A,A */
04006 ,{ 220, 140, 220, 90, 220} /* GU,CG,G,A,C */
04007 ,{ 130, 50, 130, 130, 130} /* GU,CG,G,A,G */
04008 ,{ 220, 140, 220, 90, 220} /* GU,CG,G,A,U */
04009 }
04010 ,{{ 270, 230, 270, 140, 270} /* GU,CG,G,C,E */
04011 ,{ 270, 190, 270, 140, 270} /* GU,CG,G,C,A */
04012 ,{ 250, 230, 250, 120, 250} /* GU,CG,G,C,C */
04013 ,{ 270, 190, 270, 140, 270} /* GU,CG,G,C,G */
04014 ,{ 240, 220, 240, 110, 240} /* GU,CG,G,C,U */
04015 }
04016 ,{{ 220, 140, 220, 210, 220} /* GU,CG,G,G,E */
04017 ,{ 130, 50, 130, 130, 130} /* GU,CG,G,G,A */
04018 ,{ 220, 140, 220, 90, 220} /* GU,CG,G,G,C */
04019 ,{ 210, 130, 80, 210, 80} /* GU,CG,G,G,G */
04020 ,{ 220, 140, 220, 90, 220} /* GU,CG,G,G,U */
04021 }
04022 ,{{ 270, 220, 270, 150, 270} /* GU,CG,G,U,E */
04023 ,{ 270, 190, 270, 140, 270} /* GU,CG,G,U,A */
04024 ,{ 240, 220, 240, 110, 240} /* GU,CG,G,U,C */
04025 ,{ 270, 190, 270, 140, 270} /* GU,CG,G,U,G */
04026 ,{ 150, 70, 150, 150, 150} /* GU,CG,G,U,U */
04027 }
04028 }
04029 ,{{{ 290, 270, 270, 270, 290} /* GU,CG,U,E,E */
04030 ,{ 290, 270, 270, 270, 290} /* GU,CG,U,E,A */
04031 ,{ 250, 250, 250, 250, 250} /* GU,CG,U,E,C */
04032 ,{ 270, 270, 270, 270, 270} /* GU,CG,U,E,G */
04033 ,{ 240, 240, 240, 240, 240} /* GU,CG,U,E,U */
04034 }
04035 ,{{ 290, 230, 230, 230, 290} /* GU,CG,U,A,E */
04036 ,{ 290, 230, 230, 230, 290} /* GU,CG,U,A,A */
04037 ,{ 220, 220, 220, 220, 220} /* GU,CG,U,A,C */
04038 ,{ 190, 130, 190, 130, 130} /* GU,CG,U,A,G */
04039 ,{ 220, 220, 220, 220, 220} /* GU,CG,U,A,U */
04040 }
04041 ,{{ 270, 270, 270, 270, 270} /* GU,CG,U,C,E */
04042 ,{ 270, 270, 270, 270, 270} /* GU,CG,U,C,A */
04043 ,{ 250, 250, 250, 250, 250} /* GU,CG,U,C,C */
04044 ,{ 270, 270, 270, 270, 270} /* GU,CG,U,C,G */
04045 ,{ 240, 240, 240, 240, 240} /* GU,CG,U,C,U */
04046 }
04047 ,{{ 220, 220, 220, 220, 220} /* GU,CG,U,G,E */
04048 ,{ 190, 130, 190, 130, 130} /* GU,CG,U,G,A */
04049 ,{ 220, 220, 220, 220, 220} /* GU,CG,U,G,C */
04050 ,{ 210, 80, 80, 80, 210} /* GU,CG,U,G,G */
04051 ,{ 220, 220, 220, 220, 220} /* GU,CG,U,G,U */
04052 }
04053 ,{{ 270, 270, 270, 270, 270} /* GU,CG,U,U,E */
04054 ,{ 270, 270, 270, 270, 270} /* GU,CG,U,U,A */
04055 ,{ 240, 240, 240, 240, 240} /* GU,CG,U,U,C */
04056 ,{ 270, 270, 270, 270, 270} /* GU,CG,U,U,G */
04057 ,{ 150, 150, 150, 150, 150} /* GU,CG,U,U,U */
04058 }
04059 }
04060 }
04061 ,{{{ 300, 280, 240, 240, 300} /* GU,GC,E,E,E */
04062 ,{ 300, 280, 240, 240, 300} /* GU,GC,E,E,A */
04063 ,{ 260, 260, 220, 240, 220} /* GU,GC,E,E,C */
04064 ,{ 250, 250, 210, 210, 210} /* GU,GC,E,E,G */
04065 ,{ 250, 250, 220, 240, 220} /* GU,GC,E,E,U */

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04066     }
04067     ,{{    300,    280,    240,    240,    300} /* GU,GC,E,A,E */
04068     ,{{    300,    280,    240,    240,    300} /* GU,GC,E,A,A */
04069     ,{{    250,    250,    220,    220,    220} /* GU,GC,E,A,C */
04070     ,{{    100,     70,    100,     40,    100} /* GU,GC,E,A,G */
04071     ,{{    250,    250,    220,    220,    220} /* GU,GC,E,A,U */
04072     }
04073     ,{{    250,    250,    220,    240,    220} /* GU,GC,E,C,E */
04074     ,{{    250,    250,    210,    210,    210} /* GU,GC,E,C,A */
04075     ,{{    250,    250,    220,    240,    220} /* GU,GC,E,C,C */
04076     ,{{    250,    250,    210,    210,    210} /* GU,GC,E,C,G */
04077     ,{{    250,    250,    220,    240,    220} /* GU,GC,E,C,U */
04078     }
04079     ,{{    250,    250,    220,    220,    220} /* GU,GC,E,G,E */
04080     ,{{    160,    140,    160,    100,    160} /* GU,GC,E,G,A */
04081     ,{{    250,    250,    220,    220,    220} /* GU,GC,E,G,C */
04082     ,{{    210,    130,     80,    210,    210} /* GU,GC,E,G,G */
04083     ,{{    250,    250,    220,    220,    220} /* GU,GC,E,G,U */
04084     }
04085     ,{{    260,    260,    220,    240,    220} /* GU,GC,E,U,E */
04086     ,{{    250,    250,    210,    210,    210} /* GU,GC,E,U,A */
04087     ,{{    260,    260,    220,    240,    220} /* GU,GC,E,U,C */
04088     ,{{    250,    250,    210,    210,    210} /* GU,GC,E,U,G */
04089     ,{{    240,    240,    140,    140,    140} /* GU,GC,E,U,U */
04090     }
04091     }
04092     ,{{{    280,    280,    240,    240,    240} /* GU,GC,A,E,E */
04093     ,{{    280,    280,    240,    200,    240} /* GU,GC,A,E,A */
04094     ,{{    260,    260,    220,    240,    220} /* GU,GC,A,E,C */
04095     ,{{    250,    250,    210,    170,    210} /* GU,GC,A,E,G */
04096     ,{{    250,    250,    220,    240,    220} /* GU,GC,A,E,U */
04097     }
04098     ,{{{    280,    280,    240,    200,    240} /* GU,GC,A,A,E */
04099     ,{{    280,    280,    240,    200,    240} /* GU,GC,A,A,A */
04100     ,{{    250,    250,    220,    180,    220} /* GU,GC,A,A,C */
04101     ,{{     70,     70,     40,     0,     40} /* GU,GC,A,A,G */
04102     ,{{    250,    250,    220,    180,    220} /* GU,GC,A,A,U */
04103     }
04104     ,{{{    250,    250,    220,    240,    220} /* GU,GC,A,C,E */
04105     ,{{    250,    250,    210,    170,    210} /* GU,GC,A,C,A */
04106     ,{{    250,    250,    220,    240,    220} /* GU,GC,A,C,C */
04107     ,{{    250,    250,    210,    170,    210} /* GU,GC,A,C,G */
04108     ,{{    250,    250,    220,    240,    220} /* GU,GC,A,C,U */
04109     }
04110     ,{{{    250,    250,    220,    180,    220} /* GU,GC,A,G,E */
04111     ,{{    140,    140,    100,     60,    100} /* GU,GC,A,G,A */
04112     ,{{    250,    250,    220,    180,    220} /* GU,GC,A,G,C */
04113     ,{{    170,    110,     80,    170,     80} /* GU,GC,A,G,G */
04114     ,{{    250,    250,    220,    180,    220} /* GU,GC,A,G,U */
04115     }
04116     ,{{{    260,    260,    220,    240,    220} /* GU,GC,A,U,E */
04117     ,{{    250,    250,    210,    170,    210} /* GU,GC,A,U,A */
04118     ,{{    260,    260,    220,    240,    220} /* GU,GC,A,U,C */
04119     ,{{    250,    250,    210,    170,    210} /* GU,GC,A,U,G */
04120     ,{{    240,    240,    140,    100,    140} /* GU,GC,A,U,U */
04121     }
04122     }
04123     ,{{{    240,    240,    240,    240,    240} /* GU,GC,C,E,E */
04124     ,{{    240,    240,    240,    240,    240} /* GU,GC,C,E,A */
04125     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,E,C */
04126     ,{{    210,    210,    210,    210,    210} /* GU,GC,C,E,G */
04127     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,E,U */
04128     }
04129     ,{{{    240,    240,    240,    240,    240} /* GU,GC,C,A,E */
04130     ,{{    240,    240,    240,    240,    240} /* GU,GC,C,A,A */
04131     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,A,C */
04132     ,{{    100,     40,    100,     40,    100} /* GU,GC,C,A,G */
04133     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,A,U */
04134     }
04135     ,{{{    220,    220,    220,    220,    220} /* GU,GC,C,C,E */
04136     ,{{    210,    210,    210,    210,    210} /* GU,GC,C,C,A */
04137     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,C,C */
04138     ,{{    210,    210,    210,    210,    210} /* GU,GC,C,C,G */
04139     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,C,U */
04140     }
04141     ,{{{    220,    220,    220,    220,    220} /* GU,GC,C,G,E */
04142     ,{{    160,    100,    160,    100,    160} /* GU,GC,C,G,A */
04143     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,G,C */
04144     ,{{     80,     80,     80,     80,     80} /* GU,GC,C,G,G */
04145     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,G,U */
04146     }
04147     ,{{{    220,    220,    220,    220,    220} /* GU,GC,C,U,E */
04148     ,{{    210,    210,    210,    210,    210} /* GU,GC,C,U,A */
04149     ,{{    220,    220,    220,    220,    220} /* GU,GC,C,U,C */
04150     ,{{    210,    210,    210,    210,    210} /* GU,GC,C,U,G */
04151     ,{{    140,    140,    140,    140,    140} /* GU,GC,C,U,U */
04152     }
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04153     }
04154     ,{{{ 240, 200, 240, 210, 240} /* GU,GC,G,E,E */
04155     ,{ 240, 160, 240, 110, 240} /* GU,GC,G,E,A */
04156     ,{ 220, 200, 220, 90, 220} /* GU,GC,G,E,C */
04157     ,{ 210, 130, 210, 210, 210} /* GU,GC,G,E,G */
04158     ,{ 220, 200, 220, 140, 220} /* GU,GC,G,E,U */
04159     }
04160     ,{{{ 240, 160, 240, 110, 240} /* GU,GC,G,A,E */
04161     ,{ 240, 160, 240, 110, 240} /* GU,GC,G,A,A */
04162     ,{ 220, 140, 220, 90, 220} /* GU,GC,G,A,C */
04163     ,{ 40, -40, 40, 40, 40} /* GU,GC,G,A,G */
04164     ,{ 220, 140, 220, 90, 220} /* GU,GC,G,A,U */
04165     }
04166     ,{{{ 220, 200, 220, 90, 220} /* GU,GC,G,C,E */
04167     ,{ 210, 130, 210, 80, 210} /* GU,GC,G,C,A */
04168     ,{ 220, 200, 220, 90, 220} /* GU,GC,G,C,C */
04169     ,{ 210, 130, 210, 80, 210} /* GU,GC,G,C,G */
04170     ,{ 220, 200, 220, 90, 220} /* GU,GC,G,C,U */
04171     }
04172     ,{{{ 220, 140, 220, 210, 220} /* GU,GC,G,G,E */
04173     ,{ 100, 20, 100, 100, 100} /* GU,GC,G,G,A */
04174     ,{ 220, 140, 220, 90, 220} /* GU,GC,G,G,C */
04175     ,{ 210, 130, 80, 210, 80} /* GU,GC,G,G,G */
04176     ,{ 220, 140, 220, 90, 220} /* GU,GC,G,G,U */
04177     }
04178     ,{{{ 220, 200, 220, 140, 220} /* GU,GC,G,U,E */
04179     ,{ 210, 130, 210, 80, 210} /* GU,GC,G,U,A */
04180     ,{ 220, 200, 220, 90, 220} /* GU,GC,G,U,C */
04181     ,{ 210, 130, 210, 80, 210} /* GU,GC,G,U,G */
04182     ,{ 140, 60, 140, 140, 140} /* GU,GC,G,U,U */
04183     }
04184     }
04185     ,{{{ 300, 240, 240, 240, 300} /* GU,GC,U,E,E */
04186     ,{ 300, 240, 240, 240, 300} /* GU,GC,U,E,A */
04187     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,E,C */
04188     ,{ 210, 210, 210, 210, 210} /* GU,GC,U,E,G */
04189     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,E,U */
04190     }
04191     ,{{{ 300, 240, 240, 240, 300} /* GU,GC,U,A,E */
04192     ,{ 300, 240, 240, 240, 300} /* GU,GC,U,A,A */
04193     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,A,C */
04194     ,{ 100, 40, 100, 40, 40} /* GU,GC,U,A,G */
04195     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,A,U */
04196     }
04197     ,{{{ 220, 220, 220, 220, 220} /* GU,GC,U,C,E */
04198     ,{ 210, 210, 210, 210, 210} /* GU,GC,U,C,A */
04199     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,C,C */
04200     ,{ 210, 210, 210, 210, 210} /* GU,GC,U,C,G */
04201     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,C,U */
04202     }
04203     ,{{{ 220, 220, 220, 220, 220} /* GU,GC,U,G,E */
04204     ,{ 160, 100, 160, 100, 100} /* GU,GC,U,G,A */
04205     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,G,C */
04206     ,{ 210, 80, 80, 80, 210} /* GU,GC,U,G,G */
04207     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,G,U */
04208     }
04209     ,{{{ 220, 220, 220, 220, 220} /* GU,GC,U,U,E */
04210     ,{ 210, 210, 210, 210, 210} /* GU,GC,U,U,A */
04211     ,{ 220, 220, 220, 220, 220} /* GU,GC,U,U,C */
04212     ,{ 210, 210, 210, 210, 210} /* GU,GC,U,U,G */
04213     ,{ 140, 140, 140, 140, 140} /* GU,GC,U,U,U */
04214     }
04215     }
04216     }
04217     ,{{{ 430, 430, 370, 370, 430} /* GU,GU,E,E,E */
04218     ,{ 430, 410, 370, 370, 430} /* GU,GU,E,E,A */
04219     ,{ 370, 370, 340, 360, 340} /* GU,GU,E,E,C */
04220     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,E,G */
04221     ,{ 430, 430, 340, 360, 340} /* GU,GU,E,E,U */
04222     }
04223     ,{{{ 430, 410, 370, 370, 430} /* GU,GU,E,A,E */
04224     ,{ 430, 410, 370, 370, 430} /* GU,GU,E,A,A */
04225     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,A,C */
04226     ,{ 320, 290, 320, 260, 320} /* GU,GU,E,A,G */
04227     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,A,U */
04228     }
04229     ,{{{ 370, 370, 340, 360, 340} /* GU,GU,E,C,E */
04230     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,C,A */
04231     ,{ 370, 370, 340, 360, 340} /* GU,GU,E,C,C */
04232     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,C,G */
04233     ,{ 370, 370, 340, 360, 340} /* GU,GU,E,C,U */
04234     }
04235     ,{{{ 370, 370, 360, 340, 360} /* GU,GU,E,G,E */
04236     ,{ 360, 330, 360, 300, 360} /* GU,GU,E,G,A */
04237     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,G,C */
04238     ,{ 340, 260, 210, 340, 340} /* GU,GU,E,G,G */
04239     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,G,U */

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04240     }
04241     ,{{ 430, 430, 340, 360, 340} /* GU,GU,E,U,E */
04242     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,U,A */
04243     ,{ 370, 370, 340, 360, 340} /* GU,GU,E,U,C */
04244     ,{ 370, 370, 340, 340, 340} /* GU,GU,E,U,G */
04245     ,{ 430, 430, 340, 340, 340} /* GU,GU,E,U,U */
04246     }
04247     }
04248     ,{{{ 430, 430, 370, 360, 370} /* GU,GU,A,E,E */
04249     ,{ 410, 410, 370, 330, 370} /* GU,GU,A,E,A */
04250     ,{ 370, 370, 340, 360, 340} /* GU,GU,A,E,C */
04251     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,E,G */
04252     ,{ 430, 430, 340, 360, 340} /* GU,GU,A,E,U */
04253     }
04254     ,{{{ 410, 410, 370, 330, 370} /* GU,GU,A,A,E */
04255     ,{ 410, 410, 370, 330, 370} /* GU,GU,A,A,A */
04256     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,A,C */
04257     ,{ 290, 290, 260, 220, 260} /* GU,GU,A,A,G */
04258     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,A,U */
04259     }
04260     ,{{{ 370, 370, 340, 360, 340} /* GU,GU,A,C,E */
04261     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,C,A */
04262     ,{ 370, 370, 340, 360, 340} /* GU,GU,A,C,C */
04263     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,C,G */
04264     ,{ 370, 370, 340, 360, 340} /* GU,GU,A,C,U */
04265     }
04266     ,{{{ 370, 370, 340, 300, 340} /* GU,GU,A,G,E */
04267     ,{ 330, 330, 300, 260, 300} /* GU,GU,A,G,A */
04268     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,G,C */
04269     ,{ 300, 240, 210, 300, 210} /* GU,GU,A,G,G */
04270     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,G,U */
04271     }
04272     ,{{{ 430, 430, 340, 360, 340} /* GU,GU,A,U,E */
04273     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,U,A */
04274     ,{ 370, 370, 340, 360, 340} /* GU,GU,A,U,C */
04275     ,{ 370, 370, 340, 300, 340} /* GU,GU,A,U,G */
04276     ,{ 430, 430, 340, 300, 340} /* GU,GU,A,U,U */
04277     }
04278     }
04279     ,{{{ 370, 370, 370, 370, 370} /* GU,GU,C,E,E */
04280     ,{ 370, 370, 370, 370, 370} /* GU,GU,C,E,A */
04281     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,E,C */
04282     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,E,G */
04283     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,E,U */
04284     }
04285     ,{{{ 370, 370, 370, 370, 370} /* GU,GU,C,A,E */
04286     ,{ 370, 370, 370, 370, 370} /* GU,GU,C,A,A */
04287     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,A,C */
04288     ,{ 320, 260, 320, 260, 320} /* GU,GU,C,A,G */
04289     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,A,U */
04290     }
04291     ,{{{ 340, 340, 340, 340, 340} /* GU,GU,C,C,E */
04292     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,C,A */
04293     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,C,C */
04294     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,C,G */
04295     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,C,U */
04296     }
04297     ,{{{ 360, 340, 360, 340, 360} /* GU,GU,C,G,E */
04298     ,{ 360, 300, 360, 300, 360} /* GU,GU,C,G,A */
04299     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,G,C */
04300     ,{ 210, 210, 210, 210, 210} /* GU,GU,C,G,G */
04301     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,G,U */
04302     }
04303     ,{{{ 340, 340, 340, 340, 340} /* GU,GU,C,U,E */
04304     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,U,A */
04305     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,U,C */
04306     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,U,G */
04307     ,{ 340, 340, 340, 340, 340} /* GU,GU,C,U,U */
04308     }
04309     }
04310     ,{{{ 370, 320, 370, 340, 370} /* GU,GU,G,E,E */
04311     ,{ 370, 290, 370, 300, 370} /* GU,GU,G,E,A */
04312     ,{ 340, 320, 340, 210, 340} /* GU,GU,G,E,C */
04313     ,{ 340, 260, 340, 340, 340} /* GU,GU,G,E,G */
04314     ,{ 340, 320, 340, 340, 340} /* GU,GU,G,E,U */
04315     }
04316     ,{{{ 370, 290, 370, 260, 370} /* GU,GU,G,A,E */
04317     ,{ 370, 290, 370, 240, 370} /* GU,GU,G,A,A */
04318     ,{ 340, 260, 340, 210, 340} /* GU,GU,G,A,C */
04319     ,{ 260, 180, 260, 260, 260} /* GU,GU,G,A,G */
04320     ,{ 340, 260, 340, 210, 340} /* GU,GU,G,A,U */
04321     }
04322     ,{{{ 340, 320, 340, 210, 340} /* GU,GU,G,C,E */
04323     ,{ 340, 260, 340, 210, 340} /* GU,GU,G,C,A */
04324     ,{ 340, 320, 340, 210, 340} /* GU,GU,G,C,C */
04325     ,{ 340, 260, 340, 210, 340} /* GU,GU,G,C,G */
04326     ,{ 340, 320, 340, 210, 340} /* GU,GU,G,C,U */
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04327     }
04328     ,{{    340,    260,    340,    340,    340} /* GU,GU,G,G,E */
04329     ,{     300,    220,    300,    300,    300} /* GU,GU,G,G,A */
04330     ,{     340,    260,    340,    210,    340} /* GU,GU,G,G,C */
04331     ,{     340,    260,    210,    340,    210} /* GU,GU,G,G,G */
04332     ,{     340,    260,    340,    210,    340} /* GU,GU,G,G,U */
04333     }
04334     ,{{    340,    320,    340,    340,    340} /* GU,GU,G,U,E */
04335     ,{     340,    260,    340,    210,    340} /* GU,GU,G,U,A */
04336     ,{     340,    320,    340,    210,    340} /* GU,GU,G,U,C */
04337     ,{     340,    260,    340,    210,    340} /* GU,GU,G,U,G */
04338     ,{     340,    260,    340,    340,    340} /* GU,GU,G,U,U */
04339     }
04340     }
04341     ,{{{    430,    370,    370,    370,    430} /* GU,GU,U,E,E */
04342     ,{     430,    370,    370,    370,    430} /* GU,GU,U,E,A */
04343     ,{     340,    340,    340,    340,    340} /* GU,GU,U,E,C */
04344     ,{     340,    340,    340,    340,    340} /* GU,GU,U,E,G */
04345     ,{     340,    340,    340,    340,    340} /* GU,GU,U,E,U */
04346     }
04347     ,{{    430,    370,    370,    370,    430} /* GU,GU,U,A,E */
04348     ,{     430,    370,    370,    370,    430} /* GU,GU,U,A,A */
04349     ,{     340,    340,    340,    340,    340} /* GU,GU,U,A,C */
04350     ,{     320,    260,    320,    260,    260} /* GU,GU,U,A,G */
04351     ,{     340,    340,    340,    340,    340} /* GU,GU,U,A,U */
04352     }
04353     ,{{{    340,    340,    340,    340,    340} /* GU,GU,U,C,E */
04354     ,{     340,    340,    340,    340,    340} /* GU,GU,U,C,A */
04355     ,{     340,    340,    340,    340,    340} /* GU,GU,U,C,C */
04356     ,{     340,    340,    340,    340,    340} /* GU,GU,U,C,G */
04357     ,{     340,    340,    340,    340,    340} /* GU,GU,U,C,U */
04358     }
04359     ,{{{    360,    340,    360,    340,    340} /* GU,GU,U,G,E */
04360     ,{     360,    300,    360,    300,    300} /* GU,GU,U,G,A */
04361     ,{     340,    340,    340,    340,    340} /* GU,GU,U,G,C */
04362     ,{     340,    210,    210,    210,    340} /* GU,GU,U,G,G */
04363     ,{     340,    340,    340,    340,    340} /* GU,GU,U,G,U */
04364     }
04365     ,{{{    340,    340,    340,    340,    340} /* GU,GU,U,U,E */
04366     ,{     340,    340,    340,    340,    340} /* GU,GU,U,U,A */
04367     ,{     340,    340,    340,    340,    340} /* GU,GU,U,U,C */
04368     ,{     340,    340,    340,    340,    340} /* GU,GU,U,U,G */
04369     ,{     340,    340,    340,    340,    340} /* GU,GU,U,U,U */
04370     }
04371     }
04372     }
04373     ,{{{    400,    400,    400,    360,    400} /* GU,UG,E,E,E */
04374     ,{     400,    370,    400,    360,    400} /* GU,UG,E,E,A */
04375     ,{     340,    340,    310,    330,    310} /* GU,UG,E,E,C */
04376     ,{     340,    340,    310,    310,    310} /* GU,UG,E,E,G */
04377     ,{     400,    400,    310,    330,    310} /* GU,UG,E,E,U */
04378     }
04379     ,{{{    360,    360,    310,    360,    330} /* GU,UG,E,A,E */
04380     ,{     360,    360,    270,    360,    330} /* GU,UG,E,A,A */
04381     ,{     340,    340,    310,    310,    310} /* GU,UG,E,A,C */
04382     ,{     230,    220,    230,    170,    230} /* GU,UG,E,A,G */
04383     ,{     340,    340,    310,    310,    310} /* GU,UG,E,A,U */
04384     }
04385     ,{{{    340,    340,    310,    330,    310} /* GU,UG,E,C,E */
04386     ,{     340,    340,    310,    310,    310} /* GU,UG,E,C,A */
04387     ,{     340,    340,    310,    330,    310} /* GU,UG,E,C,C */
04388     ,{     340,    340,    310,    310,    310} /* GU,UG,E,C,G */
04389     ,{     340,    340,    310,    330,    310} /* GU,UG,E,C,U */
04390     }
04391     ,{{{    400,    370,    400,    340,    400} /* GU,UG,E,G,E */
04392     ,{     400,    370,    400,    340,    400} /* GU,UG,E,G,A */
04393     ,{     340,    340,    310,    310,    310} /* GU,UG,E,G,C */
04394     ,{     310,    230,    180,    310,    310} /* GU,UG,E,G,G */
04395     ,{     340,    340,    310,    310,    310} /* GU,UG,E,G,U */
04396     }
04397     ,{{{    400,    400,    310,    330,    310} /* GU,UG,E,U,E */
04398     ,{     340,    340,    310,    310,    310} /* GU,UG,E,U,A */
04399     ,{     340,    340,    310,    330,    310} /* GU,UG,E,U,C */
04400     ,{     340,    340,    310,    310,    310} /* GU,UG,E,U,G */
04401     ,{     400,    400,    310,    310,    310} /* GU,UG,E,U,U */
04402     }
04403     }
04404     ,{{{    400,    400,    340,    360,    340} /* GU,UG,A,E,E */
04405     ,{     370,    370,    340,    360,    340} /* GU,UG,A,E,A */
04406     ,{     340,    340,    310,    330,    310} /* GU,UG,A,E,C */
04407     ,{     340,    340,    310,    270,    310} /* GU,UG,A,E,G */
04408     ,{     400,    400,    310,    330,    310} /* GU,UG,A,E,U */
04409     }
04410     ,{{{    360,    360,    310,    360,    310} /* GU,UG,A,A,E */
04411     ,{     360,    360,    270,    360,    270} /* GU,UG,A,A,A */
04412     ,{     340,    340,    310,    270,    310} /* GU,UG,A,A,C */
04413     ,{     220,    220,    170,    130,    170} /* GU,UG,A,A,G */

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04414      , {      340,      340,      310,      270,      310} /* GU,UG,A,A,U */
04415      }
04416      , { {      340,      340,      310,      330,      310} /* GU,UG,A,C,E */
04417      , {      340,      340,      310,      270,      310} /* GU,UG,A,C,A */
04418      , {      340,      340,      310,      330,      310} /* GU,UG,A,C,C */
04419      , {      340,      340,      310,      270,      310} /* GU,UG,A,C,G */
04420      , {      340,      340,      310,      330,      310} /* GU,UG,A,C,U */
04421      }
04422      , { {      370,      370,      340,      300,      340} /* GU,UG,A,G,E */
04423      , {      370,      370,      340,      300,      340} /* GU,UG,A,G,A */
04424      , {      340,      340,      310,      270,      310} /* GU,UG,A,G,C */
04425      , {      270,      210,      180,      270,      180} /* GU,UG,A,G,G */
04426      , {      340,      340,      310,      270,      310} /* GU,UG,A,G,U */
04427      }
04428      , { {      400,      400,      310,      330,      310} /* GU,UG,A,U,E */
04429      , {      340,      340,      310,      270,      310} /* GU,UG,A,U,A */
04430      , {      340,      340,      310,      330,      310} /* GU,UG,A,U,C */
04431      , {      340,      340,      310,      270,      310} /* GU,UG,A,U,G */
04432      , {      400,      400,      310,      270,      310} /* GU,UG,A,U,U */
04433      }
04434      }
04435      , { { {      400,      340,      400,      340,      400} /* GU,UG,C,E,E */
04436      , {      400,      340,      400,      340,      400} /* GU,UG,C,E,A */
04437      , {      310,      310,      310,      310,      310} /* GU,UG,C,E,C */
04438      , {      310,      310,      310,      310,      310} /* GU,UG,C,E,G */
04439      , {      310,      310,      310,      310,      310} /* GU,UG,C,E,U */
04440      }
04441      , { {      310,      310,      310,      310,      310} /* GU,UG,C,A,E */
04442      , {      270,      270,      270,      270,      270} /* GU,UG,C,A,A */
04443      , {      310,      310,      310,      310,      310} /* GU,UG,C,A,C */
04444      , {      230,      170,      230,      170,      230} /* GU,UG,C,A,G */
04445      , {      310,      310,      310,      310,      310} /* GU,UG,C,A,U */
04446      }
04447      , { {      310,      310,      310,      310,      310} /* GU,UG,C,C,E */
04448      , {      310,      310,      310,      310,      310} /* GU,UG,C,C,A */
04449      , {      310,      310,      310,      310,      310} /* GU,UG,C,C,C */
04450      , {      310,      310,      310,      310,      310} /* GU,UG,C,C,G */
04451      , {      310,      310,      310,      310,      310} /* GU,UG,C,C,U */
04452      }
04453      , { {      400,      340,      400,      340,      400} /* GU,UG,C,G,E */
04454      , {      400,      340,      400,      340,      400} /* GU,UG,C,G,A */
04455      , {      310,      310,      310,      310,      310} /* GU,UG,C,G,C */
04456      , {      180,      180,      180,      180,      180} /* GU,UG,C,G,G */
04457      , {      310,      310,      310,      310,      310} /* GU,UG,C,G,U */
04458      }
04459      , { {      310,      310,      310,      310,      310} /* GU,UG,C,U,E */
04460      , {      310,      310,      310,      310,      310} /* GU,UG,C,U,A */
04461      , {      310,      310,      310,      310,      310} /* GU,UG,C,U,C */
04462      , {      310,      310,      310,      310,      310} /* GU,UG,C,U,G */
04463      , {      310,      310,      310,      310,      310} /* GU,UG,C,U,U */
04464      }
04465      }
04466      , { { {      340,      290,      340,      340,      340} /* GU,UG,G,E,E */
04467      , {      340,      260,      340,      340,      340} /* GU,UG,G,E,A */
04468      , {      310,      290,      310,      180,      310} /* GU,UG,G,E,C */
04469      , {      310,      230,      310,      310,      310} /* GU,UG,G,E,G */
04470      , {      310,      290,      310,      310,      310} /* GU,UG,G,E,U */
04471      }
04472      , { {      310,      230,      310,      180,      310} /* GU,UG,G,A,E */
04473      , {      270,      190,      270,      140,      270} /* GU,UG,G,A,A */
04474      , {      310,      230,      310,      180,      310} /* GU,UG,G,A,C */
04475      , {      170,      20,      170,      170,      170} /* GU,UG,G,A,G */
04476      , {      310,      230,      310,      180,      310} /* GU,UG,G,A,U */
04477      }
04478      , { {      310,      290,      310,      180,      310} /* GU,UG,G,C,E */
04479      , {      310,      230,      310,      180,      310} /* GU,UG,G,C,A */
04480      , {      310,      290,      310,      180,      310} /* GU,UG,G,C,C */
04481      , {      310,      230,      310,      180,      310} /* GU,UG,G,C,G */
04482      , {      310,      290,      310,      180,      310} /* GU,UG,G,C,U */
04483      }
04484      , { {      340,      260,      340,      340,      340} /* GU,UG,G,G,E */
04485      , {      340,      260,      340,      340,      340} /* GU,UG,G,G,A */
04486      , {      310,      230,      310,      180,      310} /* GU,UG,G,G,C */
04487      , {      310,      230,      180,      310,      180} /* GU,UG,G,G,G */
04488      , {      310,      230,      310,      180,      310} /* GU,UG,G,G,U */
04489      }
04490      , { {      310,      290,      310,      310,      310} /* GU,UG,G,U,E */
04491      , {      310,      230,      310,      180,      310} /* GU,UG,G,U,A */
04492      , {      310,      290,      310,      180,      310} /* GU,UG,G,U,C */
04493      , {      310,      230,      310,      180,      310} /* GU,UG,G,U,G */
04494      , {      310,      230,      310,      310,      310} /* GU,UG,G,U,U */
04495      }
04496      }
04497      , { { {      400,      340,      400,      340,      340} /* GU,UG,U,E,E */
04498      , {      400,      340,      400,      340,      340} /* GU,UG,U,E,A */
04499      , {      310,      310,      310,      310,      310} /* GU,UG,U,E,C */
04500      , {      310,      310,      310,      310,      310} /* GU,UG,U,E,G */

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04501      , {      310,      310,      310,      310,      310} /* GU,UG,U,E,U */
04502      }
04503      , {{      330,      310,      310,      310,      330} /* GU,UG,U,A,E */
04504      , {      330,      270,      270,      270,      330} /* GU,UG,U,A,A */
04505      , {      310,      310,      310,      310,      310} /* GU,UG,U,A,C */
04506      , {      230,      170,      230,      170,      170} /* GU,UG,U,A,G */
04507      , {      310,      310,      310,      310,      310} /* GU,UG,U,A,U */
04508      }
04509      , {{      310,      310,      310,      310,      310} /* GU,UG,U,C,E */
04510      , {      310,      310,      310,      310,      310} /* GU,UG,U,C,A */
04511      , {      310,      310,      310,      310,      310} /* GU,UG,U,C,C */
04512      , {      310,      310,      310,      310,      310} /* GU,UG,U,C,G */
04513      , {      310,      310,      310,      310,      310} /* GU,UG,U,C,U */
04514      }
04515      , {{      400,      340,      400,      340,      340} /* GU,UG,U,G,E */
04516      , {      400,      340,      400,      340,      340} /* GU,UG,U,G,A */
04517      , {      310,      310,      310,      310,      310} /* GU,UG,U,G,C */
04518      , {      310,      180,      180,      180,      310} /* GU,UG,U,G,G */
04519      , {      310,      310,      310,      310,      310} /* GU,UG,U,G,U */
04520      }
04521      , {{      310,      310,      310,      310,      310} /* GU,UG,U,U,E */
04522      , {      310,      310,      310,      310,      310} /* GU,UG,U,U,A */
04523      , {      310,      310,      310,      310,      310} /* GU,UG,U,U,C */
04524      , {      310,      310,      310,      310,      310} /* GU,UG,U,U,G */
04525      , {      310,      310,      310,      310,      310} /* GU,UG,U,U,U */
04526      }
04527      }
04528      }
04529      , {{{      370,      340,      310,      310,      370} /* GU,AU,E,E,E */
04530      , {      370,      340,      310,      310,      370} /* GU,AU,E,E,A */
04531      , {      320,      320,      290,      310,      290} /* GU,AU,E,E,C */
04532      , {      330,      330,      290,      290,      290} /* GU,AU,E,E,G */
04533      , {      320,      320,      290,      310,      290} /* GU,AU,E,E,U */
04534      }
04535      , {{      370,      340,      310,      310,      370} /* GU,AU,E,A,E */
04536      , {      370,      340,      310,      310,      370} /* GU,AU,E,A,A */
04537      , {      320,      320,      280,      280,      280} /* GU,AU,E,A,C */
04538      , {      240,      220,      240,      180,      240} /* GU,AU,E,A,G */
04539      , {      320,      320,      280,      280,      280} /* GU,AU,E,A,U */
04540      }
04541      , {{      330,      330,      290,      310,      290} /* GU,AU,E,C,E */
04542      , {      330,      330,      290,      290,      290} /* GU,AU,E,C,A */
04543      , {      320,      320,      290,      310,      290} /* GU,AU,E,C,C */
04544      , {      330,      330,      290,      290,      290} /* GU,AU,E,C,G */
04545      , {      320,      320,      290,      310,      290} /* GU,AU,E,C,U */
04546      }
04547      , {{      320,      320,      310,      280,      310} /* GU,AU,E,G,E */
04548      , {      310,      290,      310,      250,      310} /* GU,AU,E,G,A */
04549      , {      320,      320,      280,      280,      280} /* GU,AU,E,G,C */
04550      , {      260,      180,      130,      260,      260} /* GU,AU,E,G,G */
04551      , {      320,      320,      280,      280,      280} /* GU,AU,E,G,U */
04552      }
04553      , {{      330,      330,      290,      310,      290} /* GU,AU,E,U,E */
04554      , {      330,      330,      290,      290,      290} /* GU,AU,E,U,A */
04555      , {      320,      320,      290,      310,      290} /* GU,AU,E,U,C */
04556      , {      330,      330,      290,      290,      290} /* GU,AU,E,U,G */
04557      , {      290,      290,      200,      200,      200} /* GU,AU,E,U,U */
04558      }
04559      }
04560      , {{{      340,      340,      310,      310,      310} /* GU,AU,A,E,E */
04561      , {      340,      340,      310,      270,      310} /* GU,AU,A,E,A */
04562      , {      320,      320,      290,      310,      290} /* GU,AU,A,E,C */
04563      , {      330,      330,      290,      250,      290} /* GU,AU,A,E,G */
04564      , {      320,      320,      290,      310,      290} /* GU,AU,A,E,U */
04565      }
04566      , {{      340,      340,      310,      270,      310} /* GU,AU,A,A,E */
04567      , {      340,      340,      310,      270,      310} /* GU,AU,A,A,A */
04568      , {      320,      320,      280,      240,      280} /* GU,AU,A,A,C */
04569      , {      220,      220,      180,      140,      180} /* GU,AU,A,A,G */
04570      , {      320,      320,      280,      240,      280} /* GU,AU,A,A,U */
04571      }
04572      , {{      330,      330,      290,      310,      290} /* GU,AU,A,C,E */
04573      , {      330,      330,      290,      250,      290} /* GU,AU,A,C,A */
04574      , {      320,      320,      290,      310,      290} /* GU,AU,A,C,C */
04575      , {      330,      330,      290,      250,      290} /* GU,AU,A,C,G */
04576      , {      320,      320,      290,      310,      290} /* GU,AU,A,C,U */
04577      }
04578      , {{      320,      320,      280,      240,      280} /* GU,AU,A,G,E */
04579      , {      290,      290,      250,      210,      250} /* GU,AU,A,G,A */
04580      , {      320,      320,      280,      240,      280} /* GU,AU,A,G,C */
04581      , {      220,      170,      130,      220,      130} /* GU,AU,A,G,G */
04582      , {      320,      320,      280,      240,      280} /* GU,AU,A,G,U */
04583      }
04584      , {{      330,      330,      290,      310,      290} /* GU,AU,A,U,E */
04585      , {      330,      330,      290,      250,      290} /* GU,AU,A,U,A */
04586      , {      320,      320,      290,      310,      290} /* GU,AU,A,U,C */
04587      , {      330,      330,      290,      250,      290} /* GU,AU,A,U,G */

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04588 , { 290, 290, 200, 160, 200} /* GU,AU,A,U,U */
04589 }
04590 }
04591 ,{{{ 310, 310, 310, 310, 310} /* GU,AU,C,E,E */
04592 , { 310, 310, 310, 310, 310} /* GU,AU,C,E,A */
04593 , { 290, 290, 290, 290, 290} /* GU,AU,C,E,C */
04594 , { 290, 290, 290, 290, 290} /* GU,AU,C,E,G */
04595 , { 290, 290, 290, 290, 290} /* GU,AU,C,E,U */
04596 }
04597 ,{{{ 310, 310, 310, 310, 310} /* GU,AU,C,A,E */
04598 , { 310, 310, 310, 310, 310} /* GU,AU,C,A,A */
04599 , { 280, 280, 280, 280, 280} /* GU,AU,C,A,C */
04600 , { 240, 180, 240, 180, 240} /* GU,AU,C,A,G */
04601 , { 280, 280, 280, 280, 280} /* GU,AU,C,A,U */
04602 }
04603 ,{{{ 290, 290, 290, 290, 290} /* GU,AU,C,C,E */
04604 , { 290, 290, 290, 290, 290} /* GU,AU,C,C,A */
04605 , { 290, 290, 290, 290, 290} /* GU,AU,C,C,C */
04606 , { 290, 290, 290, 290, 290} /* GU,AU,C,C,G */
04607 , { 290, 290, 290, 290, 290} /* GU,AU,C,C,U */
04608 }
04609 ,{{{ 310, 280, 310, 280, 310} /* GU,AU,C,G,E */
04610 , { 310, 250, 310, 250, 310} /* GU,AU,C,G,A */
04611 , { 280, 280, 280, 280, 280} /* GU,AU,C,G,C */
04612 , { 130, 130, 130, 130, 130} /* GU,AU,C,G,G */
04613 , { 280, 280, 280, 280, 280} /* GU,AU,C,G,U */
04614 }
04615 ,{{{ 290, 290, 290, 290, 290} /* GU,AU,C,U,E */
04616 , { 290, 290, 290, 290, 290} /* GU,AU,C,U,A */
04617 , { 290, 290, 290, 290, 290} /* GU,AU,C,U,C */
04618 , { 290, 290, 290, 290, 290} /* GU,AU,C,U,G */
04619 , { 200, 200, 200, 200, 200} /* GU,AU,C,U,U */
04620 }
04621 }
04622 ,{{{ 310, 270, 310, 260, 310} /* GU,AU,G,E,E */
04623 , { 310, 230, 310, 250, 310} /* GU,AU,G,E,A */
04624 , { 290, 270, 290, 160, 290} /* GU,AU,G,E,C */
04625 , { 290, 210, 290, 260, 290} /* GU,AU,G,E,G */
04626 , { 290, 270, 290, 200, 290} /* GU,AU,G,E,U */
04627 }
04628 ,{{{ 310, 230, 310, 180, 310} /* GU,AU,G,A,E */
04629 , { 310, 230, 310, 180, 310} /* GU,AU,G,A,A */
04630 , { 280, 200, 280, 150, 280} /* GU,AU,G,A,C */
04631 , { 180, 100, 180, 180, 180} /* GU,AU,G,A,G */
04632 , { 280, 200, 280, 150, 280} /* GU,AU,G,A,U */
04633 }
04634 ,{{{ 290, 270, 290, 160, 290} /* GU,AU,G,C,E */
04635 , { 290, 210, 290, 160, 290} /* GU,AU,G,C,A */
04636 , { 290, 270, 290, 160, 290} /* GU,AU,G,C,C */
04637 , { 290, 210, 290, 160, 290} /* GU,AU,G,C,G */
04638 , { 290, 270, 290, 160, 290} /* GU,AU,G,C,U */
04639 }
04640 ,{{{ 280, 200, 280, 260, 280} /* GU,AU,G,G,E */
04641 , { 250, 170, 250, 250, 250} /* GU,AU,G,G,A */
04642 , { 280, 200, 280, 150, 280} /* GU,AU,G,G,C */
04643 , { 260, 180, 130, 260, 130} /* GU,AU,G,G,G */
04644 , { 280, 200, 280, 150, 280} /* GU,AU,G,G,U */
04645 }
04646 ,{{{ 290, 270, 290, 200, 290} /* GU,AU,G,U,E */
04647 , { 290, 210, 290, 160, 290} /* GU,AU,G,U,A */
04648 , { 290, 270, 290, 160, 290} /* GU,AU,G,U,C */
04649 , { 290, 210, 290, 160, 290} /* GU,AU,G,U,G */
04650 , { 200, 120, 200, 200, 200} /* GU,AU,G,U,U */
04651 }
04652 }
04653 ,{{{ 370, 310, 310, 310, 370} /* GU,AU,U,E,E */
04654 , { 370, 310, 310, 310, 370} /* GU,AU,U,E,A */
04655 , { 290, 290, 290, 290, 290} /* GU,AU,U,E,C */
04656 , { 290, 290, 290, 290, 290} /* GU,AU,U,E,G */
04657 , { 290, 290, 290, 290, 290} /* GU,AU,U,E,U */
04658 }
04659 ,{{{ 370, 310, 310, 310, 370} /* GU,AU,U,A,E */
04660 , { 370, 310, 310, 310, 370} /* GU,AU,U,A,A */
04661 , { 280, 280, 280, 280, 280} /* GU,AU,U,A,C */
04662 , { 240, 180, 240, 180, 180} /* GU,AU,U,A,G */
04663 , { 280, 280, 280, 280, 280} /* GU,AU,U,A,U */
04664 }
04665 ,{{{ 290, 290, 290, 290, 290} /* GU,AU,U,C,E */
04666 , { 290, 290, 290, 290, 290} /* GU,AU,U,C,A */
04667 , { 290, 290, 290, 290, 290} /* GU,AU,U,C,C */
04668 , { 290, 290, 290, 290, 290} /* GU,AU,U,C,G */
04669 , { 290, 290, 290, 290, 290} /* GU,AU,U,C,U */
04670 }
04671 ,{{{ 310, 280, 310, 280, 280} /* GU,AU,U,G,E */
04672 , { 310, 250, 310, 250, 250} /* GU,AU,U,G,A */
04673 , { 280, 280, 280, 280, 280} /* GU,AU,U,G,C */
04674 , { 260, 130, 130, 130, 260} /* GU,AU,U,G,G */
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04675      , {      280,      280,      280,      280,      280} /* GU,AU,U,G,U */
04676      }
04677      , {{      290,      290,      290,      290,      290} /* GU,AU,U,U,E */
04678      , {      290,      290,      290,      290,      290} /* GU,AU,U,U,A */
04679      , {      290,      290,      290,      290,      290} /* GU,AU,U,U,C */
04680      , {      290,      290,      290,      290,      290} /* GU,AU,U,U,G */
04681      , {      200,      200,      200,      200,      200} /* GU,AU,U,U,U */
04682      }
04683      }
04684      }
04685      , {{{      370,      340,      310,      330,      370} /* GU,UA,E,E,E */
04686      , {      370,      340,      310,      310,      370} /* GU,UA,E,E,A */
04687      , {      340,      340,      310,      330,      310} /* GU,UA,E,E,C */
04688      , {      340,      340,      310,      310,      310} /* GU,UA,E,E,G */
04689      , {      340,      340,      310,      330,      310} /* GU,UA,E,E,U */
04690      }
04691      , {{      370,      340,      310,      310,      370} /* GU,UA,E,A,E */
04692      , {      370,      340,      310,      310,      370} /* GU,UA,E,A,A */
04693      , {      300,      300,      260,      260,      260} /* GU,UA,E,A,C */
04694      , {      260,      240,      260,      200,      260} /* GU,UA,E,A,G */
04695      , {      300,      300,      260,      260,      260} /* GU,UA,E,A,U */
04696      }
04697      , {{      340,      340,      310,      330,      310} /* GU,UA,E,C,E */
04698      , {      340,      340,      310,      310,      310} /* GU,UA,E,C,A */
04699      , {      340,      340,      310,      330,      310} /* GU,UA,E,C,C */
04700      , {      340,      340,      310,      310,      310} /* GU,UA,E,C,G */
04701      , {      340,      340,      310,      330,      310} /* GU,UA,E,C,U */
04702      }
04703      , {{      300,      300,      270,      280,      280} /* GU,UA,E,G,E */
04704      , {      270,      250,      270,      210,      270} /* GU,UA,E,G,A */
04705      , {      300,      300,      260,      260,      260} /* GU,UA,E,G,C */
04706      , {      280,      200,      150,      280,      280} /* GU,UA,E,G,G */
04707      , {      300,      300,      260,      260,      260} /* GU,UA,E,G,U */
04708      }
04709      , {{      340,      340,      310,      310,      310} /* GU,UA,E,U,E */
04710      , {      340,      340,      310,      310,      310} /* GU,UA,E,U,A */
04711      , {      310,      310,      280,      300,      280} /* GU,UA,E,U,C */
04712      , {      340,      340,      310,      310,      310} /* GU,UA,E,U,G */
04713      , {      320,      320,      220,      220,      220} /* GU,UA,E,U,U */
04714      }
04715      }
04716      , {{{      340,      340,      310,      330,      310} /* GU,UA,A,E,E */
04717      , {      340,      340,      310,      270,      310} /* GU,UA,A,E,A */
04718      , {      340,      340,      310,      330,      310} /* GU,UA,A,E,C */
04719      , {      340,      340,      310,      270,      310} /* GU,UA,A,E,G */
04720      , {      340,      340,      310,      330,      310} /* GU,UA,A,E,U */
04721      }
04722      , {{      340,      340,      310,      270,      310} /* GU,UA,A,A,E */
04723      , {      340,      340,      310,      270,      310} /* GU,UA,A,A,A */
04724      , {      300,      300,      260,      220,      260} /* GU,UA,A,A,C */
04725      , {      240,      240,      200,      160,      200} /* GU,UA,A,A,G */
04726      , {      300,      300,      260,      220,      260} /* GU,UA,A,A,U */
04727      }
04728      , {{{      340,      340,      310,      330,      310} /* GU,UA,A,C,E */
04729      , {      340,      340,      310,      270,      310} /* GU,UA,A,C,A */
04730      , {      340,      340,      310,      330,      310} /* GU,UA,A,C,C */
04731      , {      340,      340,      310,      270,      310} /* GU,UA,A,C,G */
04732      , {      340,      340,      310,      330,      310} /* GU,UA,A,C,U */
04733      }
04734      , {{{      300,      300,      260,      240,      260} /* GU,UA,A,G,E */
04735      , {      250,      250,      210,      170,      210} /* GU,UA,A,G,A */
04736      , {      300,      300,      260,      220,      260} /* GU,UA,A,G,C */
04737      , {      240,      190,      150,      240,      150} /* GU,UA,A,G,G */
04738      , {      300,      300,      260,      220,      260} /* GU,UA,A,G,U */
04739      }
04740      , {{      340,      340,      310,      300,      310} /* GU,UA,A,U,E */
04741      , {      340,      340,      310,      270,      310} /* GU,UA,A,U,A */
04742      , {      310,      310,      280,      300,      280} /* GU,UA,A,U,C */
04743      , {      340,      340,      310,      270,      310} /* GU,UA,A,U,G */
04744      , {      320,      320,      220,      180,      220} /* GU,UA,A,U,U */
04745      }
04746      }
04747      , {{{      310,      310,      310,      310,      310} /* GU,UA,C,E,E */
04748      , {      310,      310,      310,      310,      310} /* GU,UA,C,E,A */
04749      , {      310,      310,      310,      310,      310} /* GU,UA,C,E,C */
04750      , {      310,      310,      310,      310,      310} /* GU,UA,C,E,G */
04751      , {      310,      310,      310,      310,      310} /* GU,UA,C,E,U */
04752      }
04753      , {{      310,      310,      310,      310,      310} /* GU,UA,C,A,E */
04754      , {      310,      310,      310,      310,      310} /* GU,UA,C,A,A */
04755      , {      260,      260,      260,      260,      260} /* GU,UA,C,A,C */
04756      , {      260,      200,      260,      200,      260} /* GU,UA,C,A,G */
04757      , {      260,      260,      260,      260,      260} /* GU,UA,C,A,U */
04758      }
04759      , {{      310,      310,      310,      310,      310} /* GU,UA,C,C,E */
04760      , {      310,      310,      310,      310,      310} /* GU,UA,C,C,A */
04761      , {      310,      310,      310,      310,      310} /* GU,UA,C,C,C */

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04762     , {      310,      310,      310,      310,      310} /* GU,UA,C,C,G */
04763     , {      310,      310,      310,      310,      310} /* GU,UA,C,C,U */
04764     }
04765     , {{      270,      260,      270,      260,      270} /* GU,UA,C,G,E */
04766     , {      270,      210,      270,      210,      270} /* GU,UA,C,G,A */
04767     , {      260,      260,      260,      260,      260} /* GU,UA,C,G,C */
04768     , {      150,      150,      150,      150,      150} /* GU,UA,C,G,G */
04769     , {      260,      260,      260,      260,      260} /* GU,UA,C,G,U */
04770     }
04771     , {{      310,      310,      310,      310,      310} /* GU,UA,C,U,E */
04772     , {      310,      310,      310,      310,      310} /* GU,UA,C,U,A */
04773     , {      280,      280,      280,      280,      280} /* GU,UA,C,U,C */
04774     , {      310,      310,      310,      310,      310} /* GU,UA,C,U,G */
04775     , {      220,      220,      220,      220,      220} /* GU,UA,C,U,U */
04776     }
04777     }
04778     , {{{      310,      290,      310,      280,      310} /* GU,UA,G,E,E */
04779     , {      310,      230,      310,      210,      310} /* GU,UA,G,E,A */
04780     , {      310,      290,      310,      180,      310} /* GU,UA,G,E,C */
04781     , {      310,      230,      310,      280,      310} /* GU,UA,G,E,G */
04782     , {      310,      290,      310,      220,      310} /* GU,UA,G,E,U */
04783     }
04784     , {{      310,      230,      310,      200,      310} /* GU,UA,G,A,E */
04785     , {      310,      230,      310,      180,      310} /* GU,UA,G,A,A */
04786     , {      260,      180,      260,      130,      260} /* GU,UA,G,A,C */
04787     , {      200,      120,      200,      200,      200} /* GU,UA,G,A,G */
04788     , {      260,      180,      260,      130,      260} /* GU,UA,G,A,U */
04789     }
04790     , {{      310,      290,      310,      180,      310} /* GU,UA,G,C,E */
04791     , {      310,      230,      310,      180,      310} /* GU,UA,G,C,A */
04792     , {      310,      290,      310,      180,      310} /* GU,UA,G,C,C */
04793     , {      310,      230,      310,      180,      310} /* GU,UA,G,C,G */
04794     , {      310,      290,      310,      180,      310} /* GU,UA,G,C,U */
04795     }
04796     , {{      280,      200,      260,      280,      260} /* GU,UA,G,G,E */
04797     , {      210,      130,      210,      210,      210} /* GU,UA,G,G,A */
04798     , {      260,      180,      260,      130,      260} /* GU,UA,G,G,C */
04799     , {      280,      200,      150,      280,      150} /* GU,UA,G,G,G */
04800     , {      260,      180,      260,      130,      260} /* GU,UA,G,G,U */
04801     }
04802     , {{{      310,      260,      310,      220,      310} /* GU,UA,G,U,E */
04803     , {      310,      230,      310,      180,      310} /* GU,UA,G,U,A */
04804     , {      280,      260,      280,      150,      280} /* GU,UA,G,U,C */
04805     , {      310,      230,      310,      180,      310} /* GU,UA,G,U,G */
04806     , {      220,      140,      220,      220,      220} /* GU,UA,G,U,U */
04807     }
04808     }
04809     , {{{      370,      310,      310,      310,      370} /* GU,UA,U,E,E */
04810     , {      370,      310,      310,      310,      370} /* GU,UA,U,E,A */
04811     , {      310,      310,      310,      310,      310} /* GU,UA,U,E,C */
04812     , {      310,      310,      310,      310,      310} /* GU,UA,U,E,G */
04813     , {      310,      310,      310,      310,      310} /* GU,UA,U,E,U */
04814     }
04815     , {{{      370,      310,      310,      310,      370} /* GU,UA,U,A,E */
04816     , {      370,      310,      310,      310,      370} /* GU,UA,U,A,A */
04817     , {      260,      260,      260,      260,      260} /* GU,UA,U,A,C */
04818     , {      260,      200,      260,      200,      200} /* GU,UA,U,A,G */
04819     , {      260,      260,      260,      260,      260} /* GU,UA,U,A,U */
04820     }
04821     , {{{      310,      310,      310,      310,      310} /* GU,UA,U,C,E */
04822     , {      310,      310,      310,      310,      310} /* GU,UA,U,C,A */
04823     , {      310,      310,      310,      310,      310} /* GU,UA,U,C,C */
04824     , {      310,      310,      310,      310,      310} /* GU,UA,U,C,G */
04825     , {      310,      310,      310,      310,      310} /* GU,UA,U,C,U */
04826     }
04827     , {{      280,      260,      270,      260,      280} /* GU,UA,U,G,E */
04828     , {      270,      210,      270,      210,      210} /* GU,UA,U,G,A */
04829     , {      260,      260,      260,      260,      260} /* GU,UA,U,G,C */
04830     , {      280,      150,      150,      150,      280} /* GU,UA,U,G,G */
04831     , {      260,      260,      260,      260,      260} /* GU,UA,U,G,U */
04832     }
04833     , {{{      310,      310,      310,      310,      310} /* GU,UA,U,U,E */
04834     , {      310,      310,      310,      310,      310} /* GU,UA,U,U,A */
04835     , {      280,      280,      280,      280,      280} /* GU,UA,U,U,C */
04836     , {      310,      310,      310,      310,      310} /* GU,UA,U,U,G */
04837     , {      220,      220,      220,      220,      220} /* GU,UA,U,U,U */
04838     }
04839     }
04840     }
04841     , {{{      430,      430,      400,      370,      430} /* GU,NN,E,E,E */
04842     , {      430,      410,      400,      370,      430} /* GU,NN,E,E,A */
04843     , {      370,      370,      340,      360,      340} /* GU,NN,E,E,C */
04844     , {      370,      370,      340,      340,      340} /* GU,NN,E,E,G */
04845     , {      430,      430,      340,      360,      340} /* GU,NN,E,E,U */
04846     }
04847     , {{      430,      410,      370,      370,      430} /* GU,NN,E,A,E */
04848     , {      430,      410,      370,      370,      430} /* GU,NN,E,A,A */

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04849      , {      370,      370,      340,      340,      340} /* GU,NN,E,A,C */
04850      , {      320,      290,      320,      260,      320} /* GU,NN,E,A,G */
04851      , {      370,      370,      340,      340,      340} /* GU,NN,E,A,U */
04852      }
04853      , { {      370,      370,      340,      360,      340} /* GU,NN,E,C,E */
04854      , {      370,      370,      340,      340,      340} /* GU,NN,E,C,A */
04855      , {      370,      370,      340,      360,      340} /* GU,NN,E,C,C */
04856      , {      370,      370,      340,      340,      340} /* GU,NN,E,C,G */
04857      , {      370,      370,      340,      360,      340} /* GU,NN,E,C,U */
04858      }
04859      , { {      400,      370,      400,      340,      400} /* GU,NN,E,G,E */
04860      , {      400,      370,      400,      340,      400} /* GU,NN,E,G,A */
04861      , {      370,      370,      340,      340,      340} /* GU,NN,E,G,C */
04862      , {      340,      260,      210,      340,      340} /* GU,NN,E,G,G */
04863      , {      370,      370,      340,      340,      340} /* GU,NN,E,G,U */
04864      }
04865      , { {      430,      430,      340,      360,      340} /* GU,NN,E,U,E */
04866      , {      370,      370,      340,      340,      340} /* GU,NN,E,U,A */
04867      , {      370,      370,      340,      360,      340} /* GU,NN,E,U,C */
04868      , {      370,      370,      340,      340,      340} /* GU,NN,E,U,G */
04869      , {      430,      430,      340,      340,      340} /* GU,NN,E,U,U */
04870      }
04871      }
04872      , { { {      430,      430,      370,      360,      370} /* GU,NN,A,E,E */
04873      , {      410,      410,      370,      360,      370} /* GU,NN,A,E,A */
04874      , {      370,      370,      340,      360,      340} /* GU,NN,A,E,C */
04875      , {      370,      370,      340,      300,      340} /* GU,NN,A,E,G */
04876      , {      430,      430,      340,      360,      340} /* GU,NN,A,E,U */
04877      }
04878      , { {      410,      410,      370,      360,      370} /* GU,NN,A,A,E */
04879      , {      410,      410,      370,      360,      370} /* GU,NN,A,A,A */
04880      , {      370,      370,      340,      300,      340} /* GU,NN,A,A,C */
04881      , {      290,      290,      260,      220,      260} /* GU,NN,A,A,G */
04882      , {      370,      370,      340,      300,      340} /* GU,NN,A,A,U */
04883      }
04884      , { {      370,      370,      340,      360,      340} /* GU,NN,A,C,E */
04885      , {      370,      370,      340,      300,      340} /* GU,NN,A,C,A */
04886      , {      370,      370,      340,      360,      340} /* GU,NN,A,C,C */
04887      , {      370,      370,      340,      300,      340} /* GU,NN,A,C,G */
04888      , {      370,      370,      340,      360,      340} /* GU,NN,A,C,U */
04889      }
04890      , { {      370,      370,      340,      300,      340} /* GU,NN,A,G,E */
04891      , {      370,      370,      340,      300,      340} /* GU,NN,A,G,A */
04892      , {      370,      370,      340,      300,      340} /* GU,NN,A,G,C */
04893      , {      300,      240,      210,      300,      210} /* GU,NN,A,G,G */
04894      , {      370,      370,      340,      300,      340} /* GU,NN,A,G,U */
04895      }
04896      , { {      430,      430,      340,      360,      340} /* GU,NN,A,U,E */
04897      , {      370,      370,      340,      300,      340} /* GU,NN,A,U,A */
04898      , {      370,      370,      340,      360,      340} /* GU,NN,A,U,C */
04899      , {      370,      370,      340,      300,      340} /* GU,NN,A,U,G */
04900      , {      430,      430,      340,      300,      340} /* GU,NN,A,U,U */
04901      }
04902      }
04903      , { { {      400,      370,      400,      370,      400} /* GU,NN,C,E,E */
04904      , {      400,      370,      400,      370,      400} /* GU,NN,C,E,A */
04905      , {      340,      340,      340,      340,      340} /* GU,NN,C,E,C */
04906      , {      340,      340,      340,      340,      340} /* GU,NN,C,E,G */
04907      , {      340,      340,      340,      340,      340} /* GU,NN,C,E,U */
04908      }
04909      , { {      370,      370,      370,      370,      370} /* GU,NN,C,A,E */
04910      , {      370,      370,      370,      370,      370} /* GU,NN,C,A,A */
04911      , {      340,      340,      340,      340,      340} /* GU,NN,C,A,C */
04912      , {      320,      260,      320,      260,      320} /* GU,NN,C,A,G */
04913      , {      340,      340,      340,      340,      340} /* GU,NN,C,A,U */
04914      }
04915      , { {      340,      340,      340,      340,      340} /* GU,NN,C,C,E */
04916      , {      340,      340,      340,      340,      340} /* GU,NN,C,C,A */
04917      , {      340,      340,      340,      340,      340} /* GU,NN,C,C,C */
04918      , {      340,      340,      340,      340,      340} /* GU,NN,C,C,G */
04919      , {      340,      340,      340,      340,      340} /* GU,NN,C,C,U */
04920      }
04921      , { {      400,      340,      400,      340,      400} /* GU,NN,C,G,E */
04922      , {      400,      340,      400,      340,      400} /* GU,NN,C,G,A */
04923      , {      340,      340,      340,      340,      340} /* GU,NN,C,G,C */
04924      , {      210,      210,      210,      210,      210} /* GU,NN,C,G,G */
04925      , {      340,      340,      340,      340,      340} /* GU,NN,C,G,U */
04926      }
04927      , { {      340,      340,      340,      340,      340} /* GU,NN,C,U,E */
04928      , {      340,      340,      340,      340,      340} /* GU,NN,C,U,A */
04929      , {      340,      340,      340,      340,      340} /* GU,NN,C,U,C */
04930      , {      340,      340,      340,      340,      340} /* GU,NN,C,U,G */
04931      , {      340,      340,      340,      340,      340} /* GU,NN,C,U,U */
04932      }
04933      }
04934      , { { {      370,      320,      370,      340,      370} /* GU,NN,G,E,E */
04935      , {      370,      290,      370,      340,      370} /* GU,NN,G,E,A */

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04936 , { 340, 320, 340, 210, 340} /* GU,NN,G,E,C */
04937 , { 340, 260, 340, 340, 340} /* GU,NN,G,E,G */
04938 , { 340, 320, 340, 340, 340} /* GU,NN,G,E,U */
04939 }
04940 , { { 370, 290, 370, 260, 370} /* GU,NN,G,A,E */
04941 , { 370, 290, 370, 240, 370} /* GU,NN,G,A,A */
04942 , { 340, 260, 340, 210, 340} /* GU,NN,G,A,C */
04943 , { 260, 180, 260, 260, 260} /* GU,NN,G,A,G */
04944 , { 340, 260, 340, 210, 340} /* GU,NN,G,A,U */
04945 }
04946 , { { 340, 320, 340, 210, 340} /* GU,NN,G,C,E */
04947 , { 340, 260, 340, 210, 340} /* GU,NN,G,C,A */
04948 , { 340, 320, 340, 210, 340} /* GU,NN,G,C,C */
04949 , { 340, 260, 340, 210, 340} /* GU,NN,G,C,G */
04950 , { 340, 320, 340, 210, 340} /* GU,NN,G,C,U */
04951 }
04952 , { { 340, 260, 340, 340, 340} /* GU,NN,G,G,E */
04953 , { 340, 260, 340, 340, 340} /* GU,NN,G,G,A */
04954 , { 340, 260, 340, 210, 340} /* GU,NN,G,G,C */
04955 , { 340, 260, 210, 340, 210} /* GU,NN,G,G,G */
04956 , { 340, 260, 340, 210, 340} /* GU,NN,G,G,U */
04957 }
04958 , { { 340, 320, 340, 340, 340} /* GU,NN,G,U,E */
04959 , { 340, 260, 340, 210, 340} /* GU,NN,G,U,A */
04960 , { 340, 320, 340, 210, 340} /* GU,NN,G,U,C */
04961 , { 340, 260, 340, 210, 340} /* GU,NN,G,U,G */
04962 , { 340, 260, 340, 340, 340} /* GU,NN,G,U,U */
04963 }
04964 }
04965 , { { { 430, 370, 400, 370, 430} /* GU,NN,U,E,E */
04966 , { 430, 370, 400, 370, 430} /* GU,NN,U,E,A */
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04968 , { 340, 340, 340, 340, 340} /* GU,NN,U,E,G */
04969 , { 340, 340, 340, 340, 340} /* GU,NN,U,E,U */
04970 }
04971 , { { 430, 370, 370, 370, 430} /* GU,NN,U,A,E */
04972 , { 430, 370, 370, 370, 430} /* GU,NN,U,A,A */
04973 , { 340, 340, 340, 340, 340} /* GU,NN,U,A,C */
04974 , { 320, 260, 320, 260, 260} /* GU,NN,U,A,G */
04975 , { 340, 340, 340, 340, 340} /* GU,NN,U,A,U */
04976 }
04977 , { { 340, 340, 340, 340, 340} /* GU,NN,U,C,E */
04978 , { 340, 340, 340, 340, 340} /* GU,NN,U,C,A */
04979 , { 340, 340, 340, 340, 340} /* GU,NN,U,C,C */
04980 , { 340, 340, 340, 340, 340} /* GU,NN,U,C,G */
04981 , { 340, 340, 340, 340, 340} /* GU,NN,U,C,U */
04982 }
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04984 , { 400, 340, 400, 340, 340} /* GU,NN,U,G,A */
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04988 }
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04992 , { 340, 340, 340, 340, 340} /* GU,NN,U,U,G */
04993 , { 340, 340, 340, 340, 340} /* GU,NN,U,U,U */
04994 }
04995 }
04996 }
04997 }
04998 , { { { { INF, INF, INF, INF, INF} /* UG,NP,E,E,E */
04999 , { INF, INF, INF, INF, INF} /* UG,NP,E,E,A */
05000 , { INF, INF, INF, INF, INF} /* UG,NP,E,E,C */
05001 , { INF, INF, INF, INF, INF} /* UG,NP,E,E,G */
05002 , { INF, INF, INF, INF, INF} /* UG,NP,E,E,U */
05003 }
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05006 , { INF, INF, INF, INF, INF} /* UG,NP,E,A,C */
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05008 , { INF, INF, INF, INF, INF} /* UG,NP,E,A,U */
05009 }
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05014 , { INF, INF, INF, INF, INF} /* UG,NP,E,C,U */
05015 }
05016 , { { INF, INF, INF, INF, INF} /* UG,NP,E,G,E */
05017 , { INF, INF, INF, INF, INF} /* UG,NP,E,G,A */
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05019 , { INF, INF, INF, INF, INF} /* UG,NP,E,G,G */
05020 , { INF, INF, INF, INF, INF} /* UG,NP,E,G,U */
05021 }
05022 , { { INF, INF, INF, INF, INF} /* UG,NP,E,U,E */
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05026 , { INF, INF, INF, INF, INF} /* UG,NP,E,U,U */
05027 }
05028 }
05029 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,E,E */
05030 , { INF, INF, INF, INF, INF} /* UG,NP,A,E,A */
05031 , { INF, INF, INF, INF, INF} /* UG,NP,A,E,C */
05032 , { INF, INF, INF, INF, INF} /* UG,NP,A,E,G */
05033 , { INF, INF, INF, INF, INF} /* UG,NP,A,E,U */
05034 }
05035 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,A,E */
05036 , { INF, INF, INF, INF, INF} /* UG,NP,A,A,A */
05037 , { INF, INF, INF, INF, INF} /* UG,NP,A,A,C */
05038 , { INF, INF, INF, INF, INF} /* UG,NP,A,A,G */
05039 , { INF, INF, INF, INF, INF} /* UG,NP,A,A,U */
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05046 }
05047 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,G,E */
05048 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,A */
05049 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,C */
05050 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,G */
05051 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,U */
05052 }
05053 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,U,E */
05054 , { INF, INF, INF, INF, INF} /* UG,NP,A,U,A */
05055 , { INF, INF, INF, INF, INF} /* UG,NP,A,U,C */
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05057 , { INF, INF, INF, INF, INF} /* UG,NP,A,U,U */
05058 }
05059 }
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05061 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,A */
05062 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,C */
05063 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,G */
05064 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,U */
05065 }
05066 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,C,A,E */
05067 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,A */
05068 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,C */
05069 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,G */
05070 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,U */
05071 }
05072 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,C,C,E */
05073 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,A */
05074 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,C */
05075 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,G */
05076 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,U */
05077 }
05078 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,C,G,E */
05079 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,A */
05080 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,C */
05081 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,G */
05082 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,U */
05083 }
05084 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,C,U,E */
05085 , { INF, INF, INF, INF, INF} /* UG,NP,C,U,A */
05086 , { INF, INF, INF, INF, INF} /* UG,NP,C,U,C */
05087 , { INF, INF, INF, INF, INF} /* UG,NP,C,U,G */
05088 , { INF, INF, INF, INF, INF} /* UG,NP,C,U,U */
05089 }
05090 }
05091 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,G,E,E */
05092 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,A */
05093 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,C */
05094 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,G */
05095 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,U */
05096 }
05097 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,G,A,E */
05098 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,A */
05099 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,C */
05100 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,G */
05101 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,U */
05102 }
05103 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,G,C,E */
05104 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,A */
05105 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,C */
05106 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,G */
05107 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,U */
05108 }
05109 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,G,G,E */

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```

05110      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,G,A */
05111      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,G,C */
05112      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,G,G */
05113      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,G,U */
05114      }
05115      , { {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,U,E */
05116      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,U,A */
05117      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,U,C */
05118      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,U,G */
05119      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,G,U,U */
05120      }
05121      }
05122      , { { {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,E,E */
05123      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,E,A */
05124      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,E,C */
05125      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,E,G */
05126      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,E,U */
05127      }
05128      , { {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,A,E */
05129      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,A,A */
05130      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,A,C */
05131      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,A,G */
05132      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,A,U */
05133      }
05134      , { {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,C,E */
05135      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,C,A */
05136      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,C,C */
05137      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,C,G */
05138      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,C,U */
05139      }
05140      , { {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,G,E */
05141      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,G,A */
05142      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,G,C */
05143      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,G,G */
05144      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,G,U */
05145      }
05146      , { {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,U,E */
05147      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,U,A */
05148      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,U,C */
05149      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,U,G */
05150      , {      INF,      INF,      INF,      INF,      INF} /* UG,NP,U,U,U */
05151      }
05152      }
05153      }
05154      , { { { {      310,      240,      240,      310,      260} /* UG,CG,E,E,E */
05155      , {      270,      240,      240,      270,      260} /* UG,CG,E,E,A */
05156      , {      310,      220,      220,      310,      220} /* UG,CG,E,E,C */
05157      , {      270,      240,      240,      270,      240} /* UG,CG,E,E,G */
05158      , {      300,      210,      210,      300,      210} /* UG,CG,E,E,U */
05159      }
05160      , { {      260,      200,      200,      230,      260} /* UG,CG,E,A,E */
05161      , {      260,      200,      200,      230,      260} /* UG,CG,E,A,A */
05162      , {      220,      190,      190,      220,      190} /* UG,CG,E,A,C */
05163      , {      160,      100,      160,      130,      160} /* UG,CG,E,A,G */
05164      , {      220,      190,      190,      220,      190} /* UG,CG,E,A,U */
05165      }
05166      , { {      310,      240,      240,      310,      240} /* UG,CG,E,C,E */
05167      , {      270,      240,      240,      270,      240} /* UG,CG,E,C,A */
05168      , {      310,      220,      220,      310,      220} /* UG,CG,E,C,C */
05169      , {      270,      240,      240,      270,      240} /* UG,CG,E,C,G */
05170      , {      300,      210,      210,      300,      210} /* UG,CG,E,C,U */
05171      }
05172      , { {      220,      190,      190,      220,      190} /* UG,CG,E,G,E */
05173      , {      160,      100,      160,      130,      160} /* UG,CG,E,G,A */
05174      , {      220,      190,      190,      220,      190} /* UG,CG,E,G,C */
05175      , {      210,      50,      50,      210,      180} /* UG,CG,E,G,G */
05176      , {      220,      190,      190,      220,      190} /* UG,CG,E,G,U */
05177      }
05178      , { {      300,      240,      240,      300,      240} /* UG,CG,E,U,E */
05179      , {      270,      240,      240,      270,      240} /* UG,CG,E,U,A */
05180      , {      300,      210,      210,      300,      210} /* UG,CG,E,U,C */
05181      , {      270,      240,      240,      270,      240} /* UG,CG,E,U,G */
05182      , {      150,      140,      120,      150,      120} /* UG,CG,E,U,U */
05183      }
05184      }
05185      , { { {      310,      200,      240,      310,      240} /* UG,CG,A,E,E */
05186      , {      270,      200,      240,      270,      240} /* UG,CG,A,E,A */
05187      , {      310,      190,      220,      310,      220} /* UG,CG,A,E,C */
05188      , {      270,      200,      240,      270,      240} /* UG,CG,A,E,G */
05189      , {      300,      170,      210,      300,      210} /* UG,CG,A,E,U */
05190      }
05191      , { {      230,      160,      200,      230,      200} /* UG,CG,A,A,E */
05192      , {      230,      160,      200,      230,      200} /* UG,CG,A,A,A */
05193      , {      220,      160,      190,      220,      190} /* UG,CG,A,A,C */
05194      , {      130,      70,      100,      130,      100} /* UG,CG,A,A,G */
05195      , {      220,      160,      190,      220,      190} /* UG,CG,A,A,U */
05196      }

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05197 ,{{ 310, 200, 240, 310, 240} /* UG,CG,A,C,E */
05198 ,{ 270, 200, 240, 270, 240} /* UG,CG,A,C,A */
05199 ,{ 310, 190, 220, 310, 220} /* UG,CG,A,C,C */
05200 ,{ 270, 200, 240, 270, 240} /* UG,CG,A,C,G */
05201 ,{ 300, 170, 210, 300, 210} /* UG,CG,A,C,U */
05202 }
05203 ,{{ 220, 160, 190, 220, 190} /* UG,CG,A,G,E */
05204 ,{ 130, 70, 100, 130, 100} /* UG,CG,A,G,A */
05205 ,{ 220, 160, 190, 220, 190} /* UG,CG,A,G,C */
05206 ,{ 210, 10, 50, 210, 50} /* UG,CG,A,G,G */
05207 ,{ 220, 160, 190, 220, 190} /* UG,CG,A,G,U */
05208 }
05209 ,{{ 300, 200, 240, 300, 240} /* UG,CG,A,U,E */
05210 ,{ 270, 200, 240, 270, 240} /* UG,CG,A,U,A */
05211 ,{ 300, 170, 210, 300, 210} /* UG,CG,A,U,C */
05212 ,{ 270, 200, 240, 270, 240} /* UG,CG,A,U,G */
05213 ,{ 150, 140, 120, 150, 120} /* UG,CG,A,U,U */
05214 }
05215 }
05216 ,{{{ 240, 240, 240, 240, 240} /* UG,CG,C,E,E */
05217 ,{ 240, 240, 240, 240, 240} /* UG,CG,C,E,A */
05218 ,{ 220, 220, 220, 220, 220} /* UG,CG,C,E,C */
05219 ,{ 240, 240, 240, 240, 240} /* UG,CG,C,E,G */
05220 ,{ 210, 210, 210, 210, 210} /* UG,CG,C,E,U */
05221 }
05222 ,{{ 200, 200, 200, 200, 200} /* UG,CG,C,A,E */
05223 ,{ 200, 200, 200, 200, 200} /* UG,CG,C,A,A */
05224 ,{ 190, 190, 190, 190, 190} /* UG,CG,C,A,C */
05225 ,{ 160, 100, 160, 100, 160} /* UG,CG,C,A,G */
05226 ,{ 190, 190, 190, 190, 190} /* UG,CG,C,A,U */
05227 }
05228 ,{{ 240, 240, 240, 240, 240} /* UG,CG,C,C,E */
05229 ,{ 240, 240, 240, 240, 240} /* UG,CG,C,C,A */
05230 ,{ 220, 220, 220, 220, 220} /* UG,CG,C,C,C */
05231 ,{ 240, 240, 240, 240, 240} /* UG,CG,C,C,G */
05232 ,{ 210, 210, 210, 210, 210} /* UG,CG,C,C,U */
05233 }
05234 ,{{ 190, 190, 190, 190, 190} /* UG,CG,C,G,E */
05235 ,{ 160, 100, 160, 100, 160} /* UG,CG,C,G,A */
05236 ,{ 190, 190, 190, 190, 190} /* UG,CG,C,G,C */
05237 ,{ 50, 50, 50, 50, 50} /* UG,CG,C,G,G */
05238 ,{ 190, 190, 190, 190, 190} /* UG,CG,C,G,U */
05239 }
05240 ,{{ 240, 240, 240, 240, 240} /* UG,CG,C,U,E */
05241 ,{ 240, 240, 240, 240, 240} /* UG,CG,C,U,A */
05242 ,{ 210, 210, 210, 210, 210} /* UG,CG,C,U,C */
05243 ,{ 240, 240, 240, 240, 240} /* UG,CG,C,U,G */
05244 ,{ 120, 120, 120, 120, 120} /* UG,CG,C,U,U */
05245 }
05246 }
05247 ,{{{ 240, 150, 240, 180, 240} /* UG,CG,G,E,E */
05248 ,{ 240, 100, 240, 110, 240} /* UG,CG,G,E,A */
05249 ,{ 220, 150, 220, 90, 220} /* UG,CG,G,E,C */
05250 ,{ 240, 100, 240, 180, 240} /* UG,CG,G,E,G */
05251 ,{ 210, 130, 210, 120, 210} /* UG,CG,G,E,U */
05252 }
05253 ,{{ 200, 60, 200, 100, 200} /* UG,CG,G,A,E */
05254 ,{ 200, 60, 200, 70, 200} /* UG,CG,G,A,A */
05255 ,{ 190, 60, 190, 60, 190} /* UG,CG,G,A,C */
05256 ,{ 100, -30, 100, 100, 100} /* UG,CG,G,A,G */
05257 ,{ 190, 60, 190, 60, 190} /* UG,CG,G,A,U */
05258 }
05259 ,{{ 240, 150, 240, 110, 240} /* UG,CG,G,C,E */
05260 ,{ 240, 100, 240, 110, 240} /* UG,CG,G,C,A */
05261 ,{ 220, 150, 220, 90, 220} /* UG,CG,G,C,C */
05262 ,{ 240, 100, 240, 110, 240} /* UG,CG,G,C,G */
05263 ,{ 210, 130, 210, 80, 210} /* UG,CG,G,C,U */
05264 }
05265 ,{{ 190, 60, 190, 180, 190} /* UG,CG,G,G,E */
05266 ,{ 100, -30, 100, 100, 100} /* UG,CG,G,G,A */
05267 ,{ 190, 60, 190, 60, 190} /* UG,CG,G,G,C */
05268 ,{ 180, 40, 50, 180, 50} /* UG,CG,G,G,G */
05269 ,{ 190, 60, 190, 60, 190} /* UG,CG,G,G,U */
05270 }
05271 ,{{ 240, 130, 240, 120, 240} /* UG,CG,G,U,E */
05272 ,{ 240, 100, 240, 110, 240} /* UG,CG,G,U,A */
05273 ,{ 210, 130, 210, 80, 210} /* UG,CG,G,U,C */
05274 ,{ 240, 100, 240, 110, 240} /* UG,CG,G,U,G */
05275 ,{ 120, -10, 120, 120, 120} /* UG,CG,G,U,U */
05276 }
05277 }
05278 ,{{{ 260, 240, 240, 240, 260} /* UG,CG,U,E,E */
05279 ,{ 260, 240, 240, 240, 260} /* UG,CG,U,E,A */
05280 ,{ 220, 220, 220, 220, 220} /* UG,CG,U,E,C */
05281 ,{ 240, 240, 240, 240, 240} /* UG,CG,U,E,G */
05282 ,{ 210, 210, 210, 210, 210} /* UG,CG,U,E,U */
05283 }

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05284 ,{{ 260, 200, 200, 200, 260} /* UG,CG,U,A,E */
05285 ,{ 260, 200, 200, 200, 260} /* UG,CG,U,A,A */
05286 ,{ 190, 190, 190, 190, 190} /* UG,CG,U,A,C */
05287 ,{ 160, 100, 160, 100, 100} /* UG,CG,U,A,G */
05288 ,{ 190, 190, 190, 190, 190} /* UG,CG,U,A,U */
05289 }
05290 ,{{ 240, 240, 240, 240, 240} /* UG,CG,U,C,E */
05291 ,{ 240, 240, 240, 240, 240} /* UG,CG,U,C,A */
05292 ,{ 220, 220, 220, 220, 220} /* UG,CG,U,C,C */
05293 ,{ 240, 240, 240, 240, 240} /* UG,CG,U,C,G */
05294 ,{ 210, 210, 210, 210, 210} /* UG,CG,U,C,U */
05295 }
05296 ,{{ 190, 190, 190, 190, 190} /* UG,CG,U,G,E */
05297 ,{ 160, 100, 160, 100, 100} /* UG,CG,U,G,A */
05298 ,{ 190, 190, 190, 190, 190} /* UG,CG,U,G,C */
05299 ,{ 180, 50, 50, 50, 180} /* UG,CG,U,G,G */
05300 ,{ 190, 190, 190, 190, 190} /* UG,CG,U,G,U */
05301 }
05302 ,{{ 240, 240, 240, 240, 240} /* UG,CG,U,U,E */
05303 ,{ 240, 240, 240, 240, 240} /* UG,CG,U,U,A */
05304 ,{ 210, 210, 210, 210, 210} /* UG,CG,U,U,C */
05305 ,{ 240, 240, 240, 240, 240} /* UG,CG,U,U,G */
05306 ,{ 120, 120, 120, 120, 120} /* UG,CG,U,U,U */
05307 }
05308 }
05309 }
05310 ,{{{ 280, 210, 210, 280, 270} /* UG,GC,E,E,E */
05311 ,{ 270, 210, 210, 240, 270} /* UG,GC,E,E,A */
05312 ,{ 280, 190, 190, 280, 190} /* UG,GC,E,E,C */
05313 ,{ 210, 180, 180, 210, 180} /* UG,GC,E,E,G */
05314 ,{ 280, 190, 190, 280, 190} /* UG,GC,E,E,U */
05315 }
05316 ,{{ 270, 210, 210, 240, 270} /* UG,GC,E,A,E */
05317 ,{ 270, 210, 210, 240, 270} /* UG,GC,E,A,A */
05318 ,{ 220, 190, 190, 220, 190} /* UG,GC,E,A,C */
05319 ,{ 70, 10, 70, 40, 70} /* UG,GC,E,A,G */
05320 ,{ 220, 190, 190, 220, 190} /* UG,GC,E,A,U */
05321 }
05322 ,{{ 280, 190, 190, 280, 190} /* UG,GC,E,C,E */
05323 ,{ 210, 180, 180, 210, 180} /* UG,GC,E,C,A */
05324 ,{ 280, 190, 190, 280, 190} /* UG,GC,E,C,C */
05325 ,{ 210, 180, 180, 210, 180} /* UG,GC,E,C,G */
05326 ,{ 280, 190, 190, 280, 190} /* UG,GC,E,C,U */
05327 }
05328 ,{{ 220, 190, 190, 220, 190} /* UG,GC,E,G,E */
05329 ,{ 130, 70, 130, 100, 130} /* UG,GC,E,G,A */
05330 ,{ 220, 190, 190, 220, 190} /* UG,GC,E,G,C */
05331 ,{ 210, 50, 50, 210, 180} /* UG,GC,E,G,G */
05332 ,{ 220, 190, 190, 220, 190} /* UG,GC,E,G,U */
05333 }
05334 ,{{{ 280, 190, 190, 280, 190} /* UG,GC,E,U,E */
05335 ,{ 210, 180, 180, 210, 180} /* UG,GC,E,U,A */
05336 ,{ 280, 190, 190, 280, 190} /* UG,GC,E,U,C */
05337 ,{ 210, 180, 180, 210, 180} /* UG,GC,E,U,G */
05338 ,{ 140, 140, 110, 140, 110} /* UG,GC,E,U,U */
05339 }
05340 }
05341 ,{{{ 280, 190, 210, 280, 210} /* UG,GC,A,E,E */
05342 ,{ 240, 190, 210, 240, 210} /* UG,GC,A,E,A */
05343 ,{ 280, 160, 190, 280, 190} /* UG,GC,A,E,C */
05344 ,{ 210, 150, 180, 210, 180} /* UG,GC,A,E,G */
05345 ,{ 280, 150, 190, 280, 190} /* UG,GC,A,E,U */
05346 }
05347 ,{{ 240, 190, 210, 240, 210} /* UG,GC,A,A,E */
05348 ,{ 240, 190, 210, 240, 210} /* UG,GC,A,A,A */
05349 ,{ 220, 150, 190, 220, 190} /* UG,GC,A,A,C */
05350 ,{ 40, -20, 10, 40, 10} /* UG,GC,A,A,G */
05351 ,{ 220, 150, 190, 220, 190} /* UG,GC,A,A,U */
05352 }
05353 ,{{ 280, 150, 190, 280, 190} /* UG,GC,A,C,E */
05354 ,{ 210, 150, 180, 210, 180} /* UG,GC,A,C,A */
05355 ,{ 280, 150, 190, 280, 190} /* UG,GC,A,C,C */
05356 ,{ 210, 150, 180, 210, 180} /* UG,GC,A,C,G */
05357 ,{ 280, 150, 190, 280, 190} /* UG,GC,A,C,U */
05358 }
05359 ,{{ 220, 150, 190, 220, 190} /* UG,GC,A,G,E */
05360 ,{ 100, 40, 70, 100, 70} /* UG,GC,A,G,A */
05361 ,{ 220, 150, 190, 220, 190} /* UG,GC,A,G,C */
05362 ,{ 210, 10, 50, 210, 50} /* UG,GC,A,G,G */
05363 ,{ 220, 150, 190, 220, 190} /* UG,GC,A,G,U */
05364 }
05365 ,{{ 280, 160, 190, 280, 190} /* UG,GC,A,U,E */
05366 ,{ 210, 150, 180, 210, 180} /* UG,GC,A,U,A */
05367 ,{ 280, 160, 190, 280, 190} /* UG,GC,A,U,C */
05368 ,{ 210, 150, 180, 210, 180} /* UG,GC,A,U,G */
05369 ,{ 140, 140, 110, 140, 110} /* UG,GC,A,U,U */
05370 }
```

```

05371      }
05372      ,{{{      210,      210,      210,      210,      210} /* UG,GC,C,E,E */
05373      ,{      210,      210,      210,      210,      210} /* UG,GC,C,E,A */
05374      ,{      190,      190,      190,      190,      190} /* UG,GC,C,E,C */
05375      ,{      180,      180,      180,      180,      180} /* UG,GC,C,E,G */
05376      ,{      190,      190,      190,      190,      190} /* UG,GC,C,E,U */
05377      }
05378      ,{{{      210,      210,      210,      210,      210} /* UG,GC,C,A,E */
05379      ,{      210,      210,      210,      210,      210} /* UG,GC,C,A,A */
05380      ,{      190,      190,      190,      190,      190} /* UG,GC,C,A,C */
05381      ,{      70,      10,      70,      10,      70} /* UG,GC,C,A,G */
05382      ,{      190,      190,      190,      190,      190} /* UG,GC,C,A,U */
05383      }
05384      ,{{{      190,      190,      190,      190,      190} /* UG,GC,C,C,E */
05385      ,{      180,      180,      180,      180,      180} /* UG,GC,C,C,A */
05386      ,{      190,      190,      190,      190,      190} /* UG,GC,C,C,C */
05387      ,{      180,      180,      180,      180,      180} /* UG,GC,C,C,G */
05388      ,{      190,      190,      190,      190,      190} /* UG,GC,C,C,U */
05389      }
05390      ,{{{      190,      190,      190,      190,      190} /* UG,GC,C,G,E */
05391      ,{      130,      70,      130,      70,      130} /* UG,GC,C,G,A */
05392      ,{      190,      190,      190,      190,      190} /* UG,GC,C,G,C */
05393      ,{      50,      50,      50,      50,      50} /* UG,GC,C,G,G */
05394      ,{      190,      190,      190,      190,      190} /* UG,GC,C,G,U */
05395      }
05396      ,{{{      190,      190,      190,      190,      190} /* UG,GC,C,U,E */
05397      ,{      180,      180,      180,      180,      180} /* UG,GC,C,U,A */
05398      ,{      190,      190,      190,      190,      190} /* UG,GC,C,U,C */
05399      ,{      180,      180,      180,      180,      180} /* UG,GC,C,U,G */
05400      ,{      110,      110,      110,      110,      110} /* UG,GC,C,U,U */
05401      }
05402      }
05403      ,{{{      210,      120,      210,      180,      210} /* UG,GC,G,E,E */
05404      ,{      210,      80,      210,      80,      210} /* UG,GC,G,E,A */
05405      ,{      190,      120,      190,      60,      190} /* UG,GC,G,E,C */
05406      ,{      180,      50,      180,      180,      180} /* UG,GC,G,E,G */
05407      ,{      190,      110,      190,      110,      190} /* UG,GC,G,E,U */
05408      }
05409      ,{{{      210,      80,      210,      80,      210} /* UG,GC,G,A,E */
05410      ,{      210,      80,      210,      80,      210} /* UG,GC,G,A,A */
05411      ,{      190,      50,      190,      60,      190} /* UG,GC,G,A,C */
05412      ,{      10,      -120,      10,      10,      10} /* UG,GC,G,A,G */
05413      ,{      190,      50,      190,      60,      190} /* UG,GC,G,A,U */
05414      }
05415      ,{{{      190,      110,      190,      60,      190} /* UG,GC,G,C,E */
05416      ,{      180,      50,      180,      50,      180} /* UG,GC,G,C,A */
05417      ,{      190,      110,      190,      60,      190} /* UG,GC,G,C,C */
05418      ,{      180,      50,      180,      50,      180} /* UG,GC,G,C,G */
05419      ,{      190,      110,      190,      60,      190} /* UG,GC,G,C,U */
05420      }
05421      ,{{{      190,      50,      190,      180,      190} /* UG,GC,G,G,E */
05422      ,{      70,      -60,      70,      70,      70} /* UG,GC,G,G,A */
05423      ,{      190,      50,      190,      60,      190} /* UG,GC,G,G,C */
05424      ,{      180,      40,      50,      180,      50} /* UG,GC,G,G,G */
05425      ,{      190,      50,      190,      60,      190} /* UG,GC,G,G,U */
05426      }
05427      ,{{{      190,      120,      190,      110,      190} /* UG,GC,G,U,E */
05428      ,{      180,      50,      180,      50,      180} /* UG,GC,G,U,A */
05429      ,{      190,      120,      190,      60,      190} /* UG,GC,G,U,C */
05430      ,{      180,      50,      180,      50,      180} /* UG,GC,G,U,G */
05431      ,{      110,      -20,      110,      110,      110} /* UG,GC,G,U,U */
05432      }
05433      }
05434      ,{{{      270,      210,      210,      210,      270} /* UG,GC,U,E,E */
05435      ,{      270,      210,      210,      210,      270} /* UG,GC,U,E,A */
05436      ,{      190,      190,      190,      190,      190} /* UG,GC,U,E,C */
05437      ,{      180,      180,      180,      180,      180} /* UG,GC,U,E,G */
05438      ,{      190,      190,      190,      190,      190} /* UG,GC,U,E,U */
05439      }
05440      ,{{{      270,      210,      210,      210,      270} /* UG,GC,U,A,E */
05441      ,{      270,      210,      210,      210,      270} /* UG,GC,U,A,A */
05442      ,{      190,      190,      190,      190,      190} /* UG,GC,U,A,C */
05443      ,{      70,      10,      70,      10,      10} /* UG,GC,U,A,G */
05444      ,{      190,      190,      190,      190,      190} /* UG,GC,U,A,U */
05445      }
05446      ,{{{      190,      190,      190,      190,      190} /* UG,GC,U,C,E */
05447      ,{      180,      180,      180,      180,      180} /* UG,GC,U,C,A */
05448      ,{      190,      190,      190,      190,      190} /* UG,GC,U,C,C */
05449      ,{      180,      180,      180,      180,      180} /* UG,GC,U,C,G */
05450      ,{      190,      190,      190,      190,      190} /* UG,GC,U,C,U */
05451      }
05452      ,{{{      190,      190,      190,      190,      190} /* UG,GC,U,G,E */
05453      ,{      130,      70,      130,      70,      130} /* UG,GC,U,G,A */
05454      ,{      190,      190,      190,      190,      190} /* UG,GC,U,G,C */
05455      ,{      180,      50,      50,      50,      180} /* UG,GC,U,G,G */
05456      ,{      190,      190,      190,      190,      190} /* UG,GC,U,G,U */
05457      }

```



```
05458 ,{{ 190, 190, 190, 190, 190} /* UG,GC,U,U,E */
05459 ,{ 180, 180, 180, 180, 180} /* UG,GC,U,U,A */
05460 ,{ 190, 190, 190, 190, 190} /* UG,GC,U,U,C */
05461 ,{ 180, 180, 180, 180, 180} /* UG,GC,U,U,G */
05462 ,{ 110, 110, 110, 110, 110} /* UG,GC,U,U,U */
05463 }
05464 }
05465 }
05466 ,{{{ 400, 360, 340, 400, 400} /* UG,GU,E,E,E */
05467 ,{ 400, 360, 340, 370, 400} /* UG,GU,E,E,A */
05468 ,{ 400, 310, 310, 400, 310} /* UG,GU,E,E,C */
05469 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,E,G */
05470 ,{ 400, 330, 310, 400, 310} /* UG,GU,E,E,U */
05471 }
05472 ,{{ 400, 360, 340, 370, 400} /* UG,GU,E,A,E */
05473 ,{ 400, 360, 340, 370, 400} /* UG,GU,E,A,A */
05474 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,A,C */
05475 ,{ 290, 230, 290, 260, 290} /* UG,GU,E,A,G */
05476 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,A,U */
05477 }
05478 ,{{ 400, 310, 310, 400, 310} /* UG,GU,E,C,E */
05479 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,C,A */
05480 ,{ 400, 310, 310, 400, 310} /* UG,GU,E,C,C */
05481 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,C,G */
05482 ,{ 400, 310, 310, 400, 310} /* UG,GU,E,C,U */
05483 }
05484 ,{{ 360, 360, 330, 340, 330} /* UG,GU,E,G,E */
05485 ,{ 360, 360, 330, 300, 330} /* UG,GU,E,G,A */
05486 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,G,C */
05487 ,{ 340, 180, 180, 340, 310} /* UG,GU,E,G,G */
05488 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,G,U */
05489 }
05490 ,{{ 400, 330, 310, 400, 310} /* UG,GU,E,U,E */
05491 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,U,A */
05492 ,{ 400, 310, 310, 400, 310} /* UG,GU,E,U,C */
05493 ,{ 340, 310, 310, 340, 310} /* UG,GU,E,U,G */
05494 ,{ 340, 330, 310, 340, 310} /* UG,GU,E,U,U */
05495 }
05496 }
05497 ,{{{ 400, 360, 340, 400, 340} /* UG,GU,A,E,E */
05498 ,{ 370, 360, 340, 370, 340} /* UG,GU,A,E,A */
05499 ,{ 400, 270, 310, 400, 310} /* UG,GU,A,E,C */
05500 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,E,G */
05501 ,{ 400, 330, 310, 400, 310} /* UG,GU,A,E,U */
05502 }
05503 ,{{ 370, 360, 340, 370, 340} /* UG,GU,A,A,E */
05504 ,{ 370, 360, 340, 370, 340} /* UG,GU,A,A,A */
05505 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,A,C */
05506 ,{ 260, 190, 230, 260, 230} /* UG,GU,A,A,G */
05507 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,A,U */
05508 }
05509 ,{{ 400, 270, 310, 400, 310} /* UG,GU,A,C,E */
05510 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,C,A */
05511 ,{ 400, 270, 310, 400, 310} /* UG,GU,A,C,C */
05512 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,C,G */
05513 ,{ 400, 270, 310, 400, 310} /* UG,GU,A,C,U */
05514 }
05515 ,{{ 360, 360, 310, 340, 310} /* UG,GU,A,G,E */
05516 ,{ 360, 360, 270, 300, 270} /* UG,GU,A,G,A */
05517 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,G,C */
05518 ,{ 340, 140, 180, 340, 180} /* UG,GU,A,G,G */
05519 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,G,U */
05520 }
05521 ,{{ 400, 330, 310, 400, 310} /* UG,GU,A,U,E */
05522 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,U,A */
05523 ,{ 400, 270, 310, 400, 310} /* UG,GU,A,U,C */
05524 ,{ 340, 270, 310, 340, 310} /* UG,GU,A,U,G */
05525 ,{ 340, 330, 310, 340, 310} /* UG,GU,A,U,U */
05526 }
05527 }
05528 ,{{{ 340, 340, 340, 340, 340} /* UG,GU,C,E,E */
05529 ,{ 340, 340, 340, 340, 340} /* UG,GU,C,E,A */
05530 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,E,C */
05531 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,E,G */
05532 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,E,U */
05533 }
05534 ,{{ 340, 340, 340, 340, 340} /* UG,GU,C,A,E */
05535 ,{ 340, 340, 340, 340, 340} /* UG,GU,C,A,A */
05536 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,A,C */
05537 ,{ 290, 230, 290, 230, 290} /* UG,GU,C,A,G */
05538 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,A,U */
05539 }
05540 ,{{ 310, 310, 310, 310, 310} /* UG,GU,C,C,E */
05541 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,C,A */
05542 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,C,C */
05543 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,C,G */
05544 ,{ 310, 310, 310, 310, 310} /* UG,GU,C,C,U */
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05545     }
05546     ,{{ 330, 310, 330, 310, 330} /* UG, GU, C, G, E */
05547     ,{ 330, 270, 330, 270, 330} /* UG, GU, C, G, A */
05548     ,{ 310, 310, 310, 310, 310} /* UG, GU, C, G, C */
05549     ,{ 180, 180, 180, 180, 180} /* UG, GU, C, G, G */
05550     ,{ 310, 310, 310, 310, 310} /* UG, GU, C, G, U */
05551     }
05552     ,{{ 310, 310, 310, 310, 310} /* UG, GU, C, U, E */
05553     ,{ 310, 310, 310, 310, 310} /* UG, GU, C, U, A */
05554     ,{ 310, 310, 310, 310, 310} /* UG, GU, C, U, C */
05555     ,{ 310, 310, 310, 310, 310} /* UG, GU, C, U, G */
05556     ,{ 310, 310, 310, 310, 310} /* UG, GU, C, U, U */
05557     }
05558     }
05559     ,{{{ 340, 230, 340, 310, 340} /* UG, GU, G, E, E */
05560     ,{ 340, 220, 340, 270, 340} /* UG, GU, G, E, A */
05561     ,{ 310, 230, 310, 180, 310} /* UG, GU, G, E, C */
05562     ,{ 310, 170, 310, 310, 310} /* UG, GU, G, E, G */
05563     ,{ 310, 230, 310, 310, 310} /* UG, GU, G, E, U */
05564     }
05565     ,{{ 340, 220, 340, 230, 340} /* UG, GU, G, A, E */
05566     ,{ 340, 220, 340, 210, 340} /* UG, GU, G, A, A */
05567     ,{ 310, 170, 310, 180, 310} /* UG, GU, G, A, C */
05568     ,{ 230, 20, 230, 230, 230} /* UG, GU, G, A, G */
05569     ,{ 310, 170, 310, 180, 310} /* UG, GU, G, A, U */
05570     }
05571     ,{{{ 310, 230, 310, 180, 310} /* UG, GU, G, C, E */
05572     ,{ 310, 170, 310, 180, 310} /* UG, GU, G, C, A */
05573     ,{ 310, 230, 310, 180, 310} /* UG, GU, G, C, C */
05574     ,{ 310, 170, 310, 180, 310} /* UG, GU, G, C, G */
05575     ,{ 310, 230, 310, 180, 310} /* UG, GU, G, C, U */
05576     }
05577     ,{{{ 310, 170, 310, 310, 310} /* UG, GU, G, G, E */
05578     ,{ 270, 130, 270, 270, 270} /* UG, GU, G, G, A */
05579     ,{ 310, 170, 310, 180, 310} /* UG, GU, G, G, C */
05580     ,{ 310, 170, 180, 310, 180} /* UG, GU, G, G, G */
05581     ,{ 310, 170, 310, 180, 310} /* UG, GU, G, G, U */
05582     }
05583     ,{{{ 310, 230, 310, 310, 310} /* UG, GU, G, U, E */
05584     ,{ 310, 170, 310, 180, 310} /* UG, GU, G, U, A */
05585     ,{ 310, 230, 310, 180, 310} /* UG, GU, G, U, C */
05586     ,{ 310, 170, 310, 180, 310} /* UG, GU, G, U, G */
05587     ,{ 310, 170, 310, 310, 310} /* UG, GU, G, U, U */
05588     }
05589     }
05590     ,{{{ 400, 340, 340, 340, 400} /* UG, GU, U, E, E */
05591     ,{ 400, 340, 340, 340, 400} /* UG, GU, U, E, A */
05592     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, E, C */
05593     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, E, G */
05594     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, E, U */
05595     }
05596     ,{{{ 400, 340, 340, 340, 400} /* UG, GU, U, A, E */
05597     ,{ 400, 340, 340, 340, 400} /* UG, GU, U, A, A */
05598     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, A, C */
05599     ,{ 290, 230, 290, 230, 230} /* UG, GU, U, A, G */
05600     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, A, U */
05601     }
05602     ,{{{ 310, 310, 310, 310, 310} /* UG, GU, U, C, E */
05603     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, C, A */
05604     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, C, C */
05605     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, C, G */
05606     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, C, U */
05607     }
05608     ,{{{ 330, 310, 330, 310, 310} /* UG, GU, U, G, E */
05609     ,{ 330, 270, 330, 270, 270} /* UG, GU, U, G, A */
05610     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, G, C */
05611     ,{ 310, 180, 180, 180, 310} /* UG, GU, U, G, G */
05612     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, G, U */
05613     }
05614     ,{{{ 310, 310, 310, 310, 310} /* UG, GU, U, U, E */
05615     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, U, A */
05616     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, U, C */
05617     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, U, G */
05618     ,{ 310, 310, 310, 310, 310} /* UG, GU, U, U, U */
05619     }
05620     }
05621     }
05622     ,{{{ 370, 310, 370, 370, 370} /* UG, UG, E, E, E */
05623     ,{ 370, 310, 370, 340, 370} /* UG, UG, E, E, A */
05624     ,{ 370, 280, 280, 280, 280} /* UG, UG, E, E, C */
05625     ,{ 310, 280, 280, 310, 280} /* UG, UG, E, E, G */
05626     ,{ 370, 300, 280, 370, 280} /* UG, UG, E, E, U */
05627     }
05628     ,{{{ 310, 280, 280, 310, 300} /* UG, UG, E, A, E */
05629     ,{ 300, 240, 240, 270, 300} /* UG, UG, E, A, A */
05630     ,{ 310, 280, 280, 310, 280} /* UG, UG, E, A, C */
05631     ,{ 200, 140, 200, 170, 200} /* UG, UG, E, A, G */

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05632 , { 310, 280, 280, 310, 280} /* UG,UG,E,A,U */
05633 }
05634 , { { 370, 280, 280, 370, 280} /* UG,UG,E,C,E */
05635 , { 310, 280, 280, 310, 280} /* UG,UG,E,C,A */
05636 , { 370, 280, 280, 370, 280} /* UG,UG,E,C,C */
05637 , { 310, 280, 280, 310, 280} /* UG,UG,E,C,G */
05638 , { 370, 280, 280, 370, 280} /* UG,UG,E,C,U */
05639 }
05640 , { { 370, 310, 370, 340, 370} /* UG,UG,E,G,E */
05641 , { 370, 310, 370, 340, 370} /* UG,UG,E,G,A */
05642 , { 310, 280, 280, 310, 280} /* UG,UG,E,G,C */
05643 , { 310, 150, 150, 310, 280} /* UG,UG,E,G,G */
05644 , { 310, 280, 280, 310, 280} /* UG,UG,E,G,U */
05645 }
05646 , { { 370, 300, 280, 370, 280} /* UG,UG,E,U,E */
05647 , { 310, 280, 280, 310, 280} /* UG,UG,E,U,A */
05648 , { 370, 280, 280, 370, 280} /* UG,UG,E,U,C */
05649 , { 310, 280, 280, 310, 280} /* UG,UG,E,U,G */
05650 , { 310, 300, 280, 310, 280} /* UG,UG,E,U,U */
05651 }
05652 }
05653 , { { { 370, 300, 310, 370, 310} /* UG,UG,A,E,E */
05654 , { 340, 270, 310, 340, 310} /* UG,UG,A,E,A */
05655 , { 370, 240, 280, 370, 280} /* UG,UG,A,E,C */
05656 , { 310, 240, 280, 310, 280} /* UG,UG,A,E,G */
05657 , { 370, 300, 280, 370, 280} /* UG,UG,A,E,U */
05658 }
05659 , { { 310, 240, 280, 310, 280} /* UG,UG,A,A,E */
05660 , { 270, 210, 240, 270, 240} /* UG,UG,A,A,A */
05661 , { 310, 240, 280, 310, 280} /* UG,UG,A,A,C */
05662 , { 170, 110, 140, 170, 140} /* UG,UG,A,A,G */
05663 , { 310, 240, 280, 310, 280} /* UG,UG,A,A,U */
05664 }
05665 , { { 370, 240, 280, 370, 280} /* UG,UG,A,C,E */
05666 , { 310, 240, 280, 310, 280} /* UG,UG,A,C,A */
05667 , { 370, 240, 280, 370, 280} /* UG,UG,A,C,C */
05668 , { 310, 240, 280, 310, 280} /* UG,UG,A,C,G */
05669 , { 370, 240, 280, 370, 280} /* UG,UG,A,C,U */
05670 }
05671 , { { 340, 270, 310, 340, 310} /* UG,UG,A,G,E */
05672 , { 340, 270, 310, 340, 310} /* UG,UG,A,G,A */
05673 , { 310, 240, 280, 310, 280} /* UG,UG,A,G,C */
05674 , { 310, 110, 150, 310, 150} /* UG,UG,A,G,G */
05675 , { 310, 240, 280, 310, 280} /* UG,UG,A,G,U */
05676 }
05677 , { { 370, 300, 280, 370, 280} /* UG,UG,A,U,E */
05678 , { 310, 240, 280, 310, 280} /* UG,UG,A,U,A */
05679 , { 370, 240, 280, 370, 280} /* UG,UG,A,U,C */
05680 , { 310, 240, 280, 310, 280} /* UG,UG,A,U,G */
05681 , { 310, 300, 280, 310, 280} /* UG,UG,A,U,U */
05682 }
05683 }
05684 , { { { 370, 310, 370, 310, 370} /* UG,UG,C,E,E */
05685 , { 370, 310, 370, 310, 370} /* UG,UG,C,E,A */
05686 , { 280, 280, 280, 280, 280} /* UG,UG,C,E,C */
05687 , { 280, 280, 280, 280, 280} /* UG,UG,C,E,G */
05688 , { 280, 280, 280, 280, 280} /* UG,UG,C,E,U */
05689 }
05690 , { { 280, 280, 280, 280, 280} /* UG,UG,C,A,E */
05691 , { 240, 240, 240, 240, 240} /* UG,UG,C,A,A */
05692 , { 280, 280, 280, 280, 280} /* UG,UG,C,A,C */
05693 , { 200, 140, 200, 140, 200} /* UG,UG,C,A,G */
05694 , { 280, 280, 280, 280, 280} /* UG,UG,C,A,U */
05695 }
05696 , { { 280, 280, 280, 280, 280} /* UG,UG,C,C,E */
05697 , { 280, 280, 280, 280, 280} /* UG,UG,C,C,A */
05698 , { 280, 280, 280, 280, 280} /* UG,UG,C,C,C */
05699 , { 280, 280, 280, 280, 280} /* UG,UG,C,C,G */
05700 , { 280, 280, 280, 280, 280} /* UG,UG,C,C,U */
05701 }
05702 , { { 370, 310, 370, 310, 370} /* UG,UG,C,G,E */
05703 , { 370, 310, 370, 310, 370} /* UG,UG,C,G,A */
05704 , { 280, 280, 280, 280, 280} /* UG,UG,C,G,C */
05705 , { 150, 150, 150, 150, 150} /* UG,UG,C,G,G */
05706 , { 280, 280, 280, 280, 280} /* UG,UG,C,G,U */
05707 }
05708 , { { 280, 280, 280, 280, 280} /* UG,UG,C,U,E */
05709 , { 280, 280, 280, 280, 280} /* UG,UG,C,U,A */
05710 , { 280, 280, 280, 280, 280} /* UG,UG,C,U,C */
05711 , { 280, 280, 280, 280, 280} /* UG,UG,C,U,G */
05712 , { 280, 280, 280, 280, 280} /* UG,UG,C,U,U */
05713 }
05714 }
05715 , { { { 310, 200, 310, 310, 310} /* UG,UG,G,E,E */
05716 , { 310, 170, 310, 310, 310} /* UG,UG,G,E,A */
05717 , { 280, 200, 280, 150, 280} /* UG,UG,G,E,C */
05718 , { 280, 140, 280, 280, 280} /* UG,UG,G,E,G */
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05719      , {      280,      200,      280,      280,      280} /* UG,UG,G,E,U */
05720      }
05721      , {{      280,      140,      280,      150,      280} /* UG,UG,G,A,E */
05722      , {      240,      110,      240,      110,      240} /* UG,UG,G,A,A */
05723      , {      280,      140,      280,      150,      280} /* UG,UG,G,A,C */
05724      , {      140,      10,      140,      140,      140} /* UG,UG,G,A,G */
05725      , {      280,      140,      280,      150,      280} /* UG,UG,G,A,U */
05726      }
05727      , {{      280,      200,      280,      150,      280} /* UG,UG,G,C,E */
05728      , {      280,      140,      280,      150,      280} /* UG,UG,G,C,A */
05729      , {      280,      200,      280,      150,      280} /* UG,UG,G,C,C */
05730      , {      280,      140,      280,      150,      280} /* UG,UG,G,C,G */
05731      , {      280,      200,      280,      150,      280} /* UG,UG,G,C,U */
05732      }
05733      , {{      310,      170,      310,      310,      310} /* UG,UG,G,G,E */
05734      , {      310,      170,      310,      310,      310} /* UG,UG,G,G,A */
05735      , {      280,      140,      280,      150,      280} /* UG,UG,G,G,C */
05736      , {      280,      140,      150,      280,      150} /* UG,UG,G,G,G */
05737      , {      280,      140,      280,      150,      280} /* UG,UG,G,G,U */
05738      }
05739      , {{      280,      200,      280,      280,      280} /* UG,UG,G,U,E */
05740      , {      280,      140,      280,      150,      280} /* UG,UG,G,U,A */
05741      , {      280,      200,      280,      150,      280} /* UG,UG,G,U,C */
05742      , {      280,      140,      280,      150,      280} /* UG,UG,G,U,G */
05743      , {      280,      140,      280,      280,      280} /* UG,UG,G,U,U */
05744      }
05745      }
05746      , {{{      370,      310,      370,      310,      310} /* UG,UG,U,E,E */
05747      , {      370,      310,      370,      310,      310} /* UG,UG,U,E,A */
05748      , {      280,      280,      280,      280,      280} /* UG,UG,U,E,C */
05749      , {      280,      280,      280,      280,      280} /* UG,UG,U,E,G */
05750      , {      280,      280,      280,      280,      280} /* UG,UG,U,E,U */
05751      }
05752      , {{      300,      280,      280,      280,      300} /* UG,UG,U,A,E */
05753      , {      300,      240,      240,      240,      300} /* UG,UG,U,A,A */
05754      , {      280,      280,      280,      280,      280} /* UG,UG,U,A,C */
05755      , {      200,      140,      200,      140,      140} /* UG,UG,U,A,G */
05756      , {      280,      280,      280,      280,      280} /* UG,UG,U,A,U */
05757      }
05758      , {{      280,      280,      280,      280,      280} /* UG,UG,U,C,E */
05759      , {      280,      280,      280,      280,      280} /* UG,UG,U,C,A */
05760      , {      280,      280,      280,      280,      280} /* UG,UG,U,C,C */
05761      , {      280,      280,      280,      280,      280} /* UG,UG,U,C,G */
05762      , {      280,      280,      280,      280,      280} /* UG,UG,U,C,U */
05763      }
05764      , {{      370,      310,      370,      310,      310} /* UG,UG,U,G,E */
05765      , {      370,      310,      370,      310,      310} /* UG,UG,U,G,A */
05766      , {      280,      280,      280,      280,      280} /* UG,UG,U,G,C */
05767      , {      280,      150,      150,      150,      280} /* UG,UG,U,G,G */
05768      , {      280,      280,      280,      280,      280} /* UG,UG,U,G,U */
05769      }
05770      , {{      280,      280,      280,      280,      280} /* UG,UG,U,U,E */
05771      , {      280,      280,      280,      280,      280} /* UG,UG,U,U,A */
05772      , {      280,      280,      280,      280,      280} /* UG,UG,U,U,C */
05773      , {      280,      280,      280,      280,      280} /* UG,UG,U,U,G */
05774      , {      280,      280,      280,      280,      280} /* UG,UG,U,U,U */
05775      }
05776      }
05777      }
05778      , {{{      350,      280,      280,      350,      340} /* UG,AU,E,E,E */
05779      , {      340,      280,      280,      310,      340} /* UG,AU,E,E,A */
05780      , {      350,      260,      260,      350,      260} /* UG,AU,E,E,C */
05781      , {      290,      260,      260,      290,      260} /* UG,AU,E,E,G */
05782      , {      350,      260,      260,      350,      260} /* UG,AU,E,E,U */
05783      }
05784      , {{      340,      280,      280,      310,      340} /* UG,AU,E,A,E */
05785      , {      340,      280,      280,      310,      340} /* UG,AU,E,A,A */
05786      , {      280,      250,      250,      280,      250} /* UG,AU,E,A,C */
05787      , {      210,      150,      210,      180,      210} /* UG,AU,E,A,G */
05788      , {      280,      250,      250,      280,      250} /* UG,AU,E,A,U */
05789      }
05790      , {{      350,      260,      260,      350,      260} /* UG,AU,E,C,E */
05791      , {      290,      260,      260,      290,      260} /* UG,AU,E,C,A */
05792      , {      350,      260,      260,      350,      260} /* UG,AU,E,C,C */
05793      , {      290,      260,      260,      290,      260} /* UG,AU,E,C,G */
05794      , {      350,      260,      260,      350,      260} /* UG,AU,E,C,U */
05795      }
05796      , {{      280,      250,      280,      280,      280} /* UG,AU,E,G,E */
05797      , {      280,      220,      280,      250,      280} /* UG,AU,E,G,A */
05798      , {      280,      250,      250,      250,      250} /* UG,AU,E,G,C */
05799      , {      260,      100,      100,      260,      230} /* UG,AU,E,G,G */
05800      , {      280,      250,      250,      280,      250} /* UG,AU,E,G,U */
05801      }
05802      , {{      350,      260,      260,      350,      260} /* UG,AU,E,U,E */
05803      , {      290,      260,      260,      290,      260} /* UG,AU,E,U,A */
05804      , {      350,      260,      260,      350,      260} /* UG,AU,E,U,C */
05805      , {      290,      260,      260,      290,      260} /* UG,AU,E,U,G */

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05806      , {      200,      190,      170,      200,      170} /* UG,AU,E,U,U */
05807      }
05808      }
05809      ,{{{      350,      240,      280,      350,      280} /* UG,AU,A,E,E */
05810      , {      310,      240,      280,      310,      280} /* UG,AU,A,E,A */
05811      , {      350,      220,      260,      350,      260} /* UG,AU,A,E,C */
05812      , {      290,      230,      260,      290,      260} /* UG,AU,A,E,G */
05813      , {      350,      220,      260,      350,      260} /* UG,AU,A,E,U */
05814      }
05815      ,{{{      310,      240,      280,      310,      280} /* UG,AU,A,A,E */
05816      , {      310,      240,      280,      310,      280} /* UG,AU,A,A,A */
05817      , {      280,      220,      250,      280,      250} /* UG,AU,A,A,C */
05818      , {      180,      120,      150,      180,      150} /* UG,AU,A,A,G */
05819      , {      280,      220,      250,      280,      250} /* UG,AU,A,A,U */
05820      }
05821      ,{{{      350,      230,      260,      350,      260} /* UG,AU,A,C,E */
05822      , {      290,      230,      260,      290,      260} /* UG,AU,A,C,A */
05823      , {      350,      220,      260,      350,      260} /* UG,AU,A,C,C */
05824      , {      290,      230,      260,      290,      260} /* UG,AU,A,C,G */
05825      , {      350,      220,      260,      350,      260} /* UG,AU,A,C,U */
05826      }
05827      ,{{{      280,      220,      250,      280,      250} /* UG,AU,A,G,E */
05828      , {      250,      190,      220,      250,      220} /* UG,AU,A,G,A */
05829      , {      280,      220,      250,      280,      250} /* UG,AU,A,G,C */
05830      , {      260,      70,      100,      260,      100} /* UG,AU,A,G,G */
05831      , {      280,      220,      250,      280,      250} /* UG,AU,A,G,U */
05832      }
05833      ,{{{      350,      230,      260,      350,      260} /* UG,AU,A,U,E */
05834      , {      290,      230,      260,      290,      260} /* UG,AU,A,U,A */
05835      , {      350,      220,      260,      350,      260} /* UG,AU,A,U,C */
05836      , {      290,      230,      260,      290,      260} /* UG,AU,A,U,G */
05837      , {      200,      190,      170,      200,      170} /* UG,AU,A,U,U */
05838      }
05839      }
05840      ,{{{      280,      280,      280,      280,      280} /* UG,AU,C,E,E */
05841      , {      280,      280,      280,      280,      280} /* UG,AU,C,E,A */
05842      , {      260,      260,      260,      260,      260} /* UG,AU,C,E,C */
05843      , {      260,      260,      260,      260,      260} /* UG,AU,C,E,G */
05844      , {      260,      260,      260,      260,      260} /* UG,AU,C,E,U */
05845      }
05846      ,{{{      280,      280,      280,      280,      280} /* UG,AU,C,A,E */
05847      , {      280,      280,      280,      280,      280} /* UG,AU,C,A,A */
05848      , {      250,      250,      250,      250,      250} /* UG,AU,C,A,C */
05849      , {      210,      150,      210,      150,      210} /* UG,AU,C,A,G */
05850      , {      250,      250,      250,      250,      250} /* UG,AU,C,A,U */
05851      }
05852      ,{{{      260,      260,      260,      260,      260} /* UG,AU,C,C,E */
05853      , {      260,      260,      260,      260,      260} /* UG,AU,C,C,A */
05854      , {      260,      260,      260,      260,      260} /* UG,AU,C,C,C */
05855      , {      260,      260,      260,      260,      260} /* UG,AU,C,C,G */
05856      , {      260,      260,      260,      260,      260} /* UG,AU,C,C,U */
05857      }
05858      ,{{{      280,      250,      280,      250,      280} /* UG,AU,C,G,E */
05859      , {      280,      220,      280,      220,      280} /* UG,AU,C,G,A */
05860      , {      250,      250,      250,      250,      250} /* UG,AU,C,G,C */
05861      , {      100,      100,      100,      100,      100} /* UG,AU,C,G,G */
05862      , {      250,      250,      250,      250,      250} /* UG,AU,C,G,U */
05863      }
05864      ,{{{      260,      260,      260,      260,      260} /* UG,AU,C,U,E */
05865      , {      260,      260,      260,      260,      260} /* UG,AU,C,U,A */
05866      , {      260,      260,      260,      260,      260} /* UG,AU,C,U,C */
05867      , {      260,      260,      260,      260,      260} /* UG,AU,C,U,G */
05868      , {      170,      170,      170,      170,      170} /* UG,AU,C,U,U */
05869      }
05870      }
05871      ,{{{      280,      180,      280,      230,      280} /* UG,AU,G,E,E */
05872      , {      280,      140,      280,      220,      280} /* UG,AU,G,E,A */
05873      , {      260,      180,      260,      130,      260} /* UG,AU,G,E,C */
05874      , {      260,      130,      260,      230,      260} /* UG,AU,G,E,G */
05875      , {      260,      180,      260,      170,      260} /* UG,AU,G,E,U */
05876      }
05877      ,{{{      280,      140,      280,      150,      280} /* UG,AU,G,A,E */
05878      , {      280,      140,      280,      150,      280} /* UG,AU,G,A,A */
05879      , {      250,      120,      250,      120,      250} /* UG,AU,G,A,C */
05880      , {      150,      20,      150,      150,      150} /* UG,AU,G,A,G */
05881      , {      250,      120,      250,      120,      250} /* UG,AU,G,A,U */
05882      }
05883      ,{{{      260,      180,      260,      130,      260} /* UG,AU,G,C,E */
05884      , {      260,      130,      260,      130,      260} /* UG,AU,G,C,A */
05885      , {      260,      180,      260,      130,      260} /* UG,AU,G,C,C */
05886      , {      260,      130,      260,      130,      260} /* UG,AU,G,C,G */
05887      , {      260,      180,      260,      130,      260} /* UG,AU,G,C,U */
05888      }
05889      ,{{{      250,      120,      250,      230,      250} /* UG,AU,G,G,E */
05890      , {      220,      90,      220,      220,      220} /* UG,AU,G,G,A */
05891      , {      250,      120,      250,      120,      250} /* UG,AU,G,G,C */
05892      , {      230,      100,      100,      230,      100} /* UG,AU,G,G,G */
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05893      , {      250,      120,      250,      120,      250} /* UG,AU,G,G,U */
05894      }
05895      , {{      260,      180,      260,      170,      260} /* UG,AU,G,U,E */
05896      , {      260,      130,      260,      130,      260} /* UG,AU,G,U,A */
05897      , {      260,      180,      260,      130,      260} /* UG,AU,G,U,C */
05898      , {      260,      130,      260,      130,      260} /* UG,AU,G,U,G */
05899      , {      170,       30,      170,      170,      170} /* UG,AU,G,U,U */
05900      }
05901      }
05902      , {{{      340,      280,      280,      280,      340} /* UG,AU,U,E,E */
05903      , {      340,      280,      280,      280,      340} /* UG,AU,U,E,A */
05904      , {      260,      260,      260,      260,      260} /* UG,AU,U,E,C */
05905      , {      260,      260,      260,      260,      260} /* UG,AU,U,E,G */
05906      , {      260,      260,      260,      260,      260} /* UG,AU,U,E,U */
05907      }
05908      , {{      340,      280,      280,      280,      340} /* UG,AU,U,A,E */
05909      , {      340,      280,      280,      280,      340} /* UG,AU,U,A,A */
05910      , {      250,      250,      250,      250,      250} /* UG,AU,U,A,C */
05911      , {      210,      150,      210,      150,      150} /* UG,AU,U,A,G */
05912      , {      250,      250,      250,      250,      250} /* UG,AU,U,A,U */
05913      }
05914      , {{      260,      260,      260,      260,      260} /* UG,AU,U,C,E */
05915      , {      260,      260,      260,      260,      260} /* UG,AU,U,C,A */
05916      , {      260,      260,      260,      260,      260} /* UG,AU,U,C,C */
05917      , {      260,      260,      260,      260,      260} /* UG,AU,U,C,G */
05918      , {      260,      260,      260,      260,      260} /* UG,AU,U,C,U */
05919      }
05920      , {{      280,      250,      280,      250,      250} /* UG,AU,U,G,E */
05921      , {      280,      220,      280,      220,      220} /* UG,AU,U,G,A */
05922      , {      250,      250,      250,      250,      250} /* UG,AU,U,G,C */
05923      , {      230,      100,      100,      100,      230} /* UG,AU,U,G,G */
05924      , {      250,      250,      250,      250,      250} /* UG,AU,U,G,U */
05925      }
05926      , {{      260,      260,      260,      260,      260} /* UG,AU,U,U,E */
05927      , {      260,      260,      260,      260,      260} /* UG,AU,U,U,A */
05928      , {      260,      260,      260,      260,      260} /* UG,AU,U,U,C */
05929      , {      260,      260,      260,      260,      260} /* UG,AU,U,U,G */
05930      , {      170,      170,      170,      170,      170} /* UG,AU,U,U,U */
05931      }
05932      }
05933      }
05934      , {{{      370,      280,      280,      370,      340} /* UG,UA,E,E,E */
05935      , {      340,      280,      280,      310,      340} /* UG,UA,E,E,A */
05936      , {      370,      280,      280,      370,      280} /* UG,UA,E,E,C */
05937      , {      310,      280,      280,      310,      280} /* UG,UA,E,E,G */
05938      , {      370,      280,      280,      370,      280} /* UG,UA,E,E,U */
05939      }
05940      , {{      340,      280,      280,      310,      340} /* UG,UA,E,A,E */
05941      , {      340,      280,      280,      310,      340} /* UG,UA,E,A,A */
05942      , {      260,      230,      230,      260,      230} /* UG,UA,E,A,C */
05943      , {      230,      170,      230,      200,      230} /* UG,UA,E,A,G */
05944      , {      260,      230,      230,      260,      230} /* UG,UA,E,A,U */
05945      }
05946      , {{      370,      280,      280,      370,      280} /* UG,UA,E,C,E */
05947      , {      310,      280,      280,      310,      280} /* UG,UA,E,C,A */
05948      , {      370,      280,      280,      370,      280} /* UG,UA,E,C,C */
05949      , {      310,      280,      280,      310,      280} /* UG,UA,E,C,G */
05950      , {      370,      280,      280,      370,      280} /* UG,UA,E,C,U */
05951      }
05952      , {{      280,      230,      240,      280,      250} /* UG,UA,E,G,E */
05953      , {      240,      180,      240,      210,      240} /* UG,UA,E,G,A */
05954      , {      260,      230,      230,      260,      230} /* UG,UA,E,G,C */
05955      , {      280,      120,      120,      280,      250} /* UG,UA,E,G,G */
05956      , {      260,      230,      230,      260,      230} /* UG,UA,E,G,U */
05957      }
05958      , {{      340,      280,      280,      340,      280} /* UG,UA,E,U,E */
05959      , {      310,      280,      280,      310,      280} /* UG,UA,E,U,A */
05960      , {      340,      250,      250,      340,      250} /* UG,UA,E,U,C */
05961      , {      310,      280,      280,      310,      280} /* UG,UA,E,U,G */
05962      , {      220,      220,      190,      220,      190} /* UG,UA,E,U,U */
05963      }
05964      }
05965      , {{{      370,      240,      280,      370,      280} /* UG,UA,A,E,E */
05966      , {      310,      240,      280,      310,      280} /* UG,UA,A,E,A */
05967      , {      370,      240,      280,      370,      280} /* UG,UA,A,E,C */
05968      , {      310,      240,      280,      310,      280} /* UG,UA,A,E,G */
05969      , {      370,      240,      280,      370,      280} /* UG,UA,A,E,U */
05970      }
05971      , {{      310,      240,      280,      310,      280} /* UG,UA,A,A,E */
05972      , {      310,      240,      280,      310,      280} /* UG,UA,A,A,A */
05973      , {      260,      200,      230,      260,      230} /* UG,UA,A,A,C */
05974      , {      200,      140,      170,      200,      170} /* UG,UA,A,A,G */
05975      , {      260,      200,      230,      260,      230} /* UG,UA,A,A,U */
05976      }
05977      , {{      370,      240,      280,      370,      280} /* UG,UA,A,C,E */
05978      , {      310,      240,      280,      310,      280} /* UG,UA,A,C,A */
05979      , {      370,      240,      280,      370,      280} /* UG,UA,A,C,C */

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05980 , { 310, 240, 280, 310, 280} /* UG,UA,A,C,G */
05981 , { 370, 240, 280, 370, 280} /* UG,UA,A,C,U */
05982 }
05983 , { { 280, 200, 230, 280, 230} /* UG,UA,A,G,E */
05984 , { 210, 150, 180, 210, 180} /* UG,UA,A,G,A */
05985 , { 260, 200, 230, 260, 230} /* UG,UA,A,G,C */
05986 , { 280, 90, 120, 280, 120} /* UG,UA,A,G,G */
05987 , { 260, 200, 230, 260, 230} /* UG,UA,A,G,U */
05988 }
05989 , { { 340, 240, 280, 340, 280} /* UG,UA,A,U,E */
05990 , { 310, 240, 280, 310, 280} /* UG,UA,A,U,A */
05991 , { 340, 210, 250, 340, 250} /* UG,UA,A,U,C */
05992 , { 310, 240, 280, 310, 280} /* UG,UA,A,U,G */
05993 , { 220, 220, 190, 220, 190} /* UG,UA,A,U,U */
05994 }
05995 }
05996 , { { { 280, 280, 280, 280, 280} /* UG,UA,C,E,E */
05997 , { 280, 280, 280, 280, 280} /* UG,UA,C,E,A */
05998 , { 280, 280, 280, 280, 280} /* UG,UA,C,E,C */
05999 , { 280, 280, 280, 280, 280} /* UG,UA,C,E,G */
06000 , { 280, 280, 280, 280, 280} /* UG,UA,C,E,U */
06001 }
06002 , { { 280, 280, 280, 280, 280} /* UG,UA,C,A,E */
06003 , { 280, 280, 280, 280, 280} /* UG,UA,C,A,A */
06004 , { 230, 230, 230, 230, 230} /* UG,UA,C,A,C */
06005 , { 230, 170, 230, 170, 230} /* UG,UA,C,A,G */
06006 , { 230, 230, 230, 230, 230} /* UG,UA,C,A,U */
06007 }
06008 , { { 280, 280, 280, 280, 280} /* UG,UA,C,C,E */
06009 , { 280, 280, 280, 280, 280} /* UG,UA,C,C,A */
06010 , { 280, 280, 280, 280, 280} /* UG,UA,C,C,C */
06011 , { 280, 280, 280, 280, 280} /* UG,UA,C,C,G */
06012 , { 280, 280, 280, 280, 280} /* UG,UA,C,C,U */
06013 }
06014 , { { 240, 230, 240, 230, 240} /* UG,UA,C,G,E */
06015 , { 240, 180, 240, 180, 240} /* UG,UA,C,G,A */
06016 , { 230, 230, 230, 230, 230} /* UG,UA,C,G,C */
06017 , { 120, 120, 120, 120, 120} /* UG,UA,C,G,G */
06018 , { 230, 230, 230, 230, 230} /* UG,UA,C,G,U */
06019 }
06020 , { { 280, 280, 280, 280, 280} /* UG,UA,C,U,E */
06021 , { 280, 280, 280, 280, 280} /* UG,UA,C,U,A */
06022 , { 250, 250, 250, 250, 250} /* UG,UA,C,U,C */
06023 , { 280, 280, 280, 280, 280} /* UG,UA,C,U,G */
06024 , { 190, 190, 190, 190, 190} /* UG,UA,C,U,U */
06025 }
06026 }
06027 , { { { 280, 200, 280, 250, 280} /* UG,UA,G,E,E */
06028 , { 280, 140, 280, 180, 280} /* UG,UA,G,E,A */
06029 , { 280, 200, 280, 150, 280} /* UG,UA,G,E,C */
06030 , { 280, 140, 280, 250, 280} /* UG,UA,G,E,G */
06031 , { 280, 200, 280, 190, 280} /* UG,UA,G,E,U */
06032 }
06033 , { { 280, 140, 280, 170, 280} /* UG,UA,G,A,E */
06034 , { 280, 140, 280, 150, 280} /* UG,UA,G,A,A */
06035 , { 230, 100, 230, 100, 230} /* UG,UA,G,A,C */
06036 , { 170, 40, 170, 170, 170} /* UG,UA,G,A,G */
06037 , { 230, 100, 230, 100, 230} /* UG,UA,G,A,U */
06038 }
06039 , { { 280, 200, 280, 150, 280} /* UG,UA,G,C,E */
06040 , { 280, 140, 280, 150, 280} /* UG,UA,G,C,A */
06041 , { 280, 200, 280, 150, 280} /* UG,UA,G,C,C */
06042 , { 280, 140, 280, 150, 280} /* UG,UA,G,C,G */
06043 , { 280, 200, 280, 150, 280} /* UG,UA,G,C,U */
06044 }
06045 , { { 250, 120, 230, 250, 230} /* UG,UA,G,G,E */
06046 , { 180, 50, 180, 180, 180} /* UG,UA,G,G,A */
06047 , { 230, 100, 230, 100, 230} /* UG,UA,G,G,C */
06048 , { 250, 120, 120, 250, 120} /* UG,UA,G,G,G */
06049 , { 230, 100, 230, 100, 230} /* UG,UA,G,G,U */
06050 }
06051 , { { 280, 170, 280, 190, 280} /* UG,UA,G,U,E */
06052 , { 280, 140, 280, 150, 280} /* UG,UA,G,U,A */
06053 , { 250, 170, 250, 120, 250} /* UG,UA,G,U,C */
06054 , { 280, 140, 280, 150, 280} /* UG,UA,G,U,G */
06055 , { 190, 60, 190, 190, 190} /* UG,UA,G,U,U */
06056 }
06057 }
06058 , { { { 340, 280, 280, 280, 340} /* UG,UA,U,E,E */
06059 , { 340, 280, 280, 280, 340} /* UG,UA,U,E,A */
06060 , { 280, 280, 280, 280, 280} /* UG,UA,U,E,C */
06061 , { 280, 280, 280, 280, 280} /* UG,UA,U,E,G */
06062 , { 280, 280, 280, 280, 280} /* UG,UA,U,E,U */
06063 }
06064 , { { 340, 280, 280, 280, 340} /* UG,UA,U,A,E */
06065 , { 340, 280, 280, 280, 340} /* UG,UA,U,A,A */
06066 , { 230, 230, 230, 230, 230} /* UG,UA,U,A,C */
```

```

06067      , {      230,      170,      230,      170,      170} /* UG,UA,U,A,G */
06068      , {      230,      230,      230,      230,      230} /* UG,UA,U,A,U */
06069      }
06070      , {{      280,      280,      280,      280,      280} /* UG,UA,U,C,E */
06071      , {      280,      280,      280,      280,      280} /* UG,UA,U,C,A */
06072      , {      280,      280,      280,      280,      280} /* UG,UA,U,C,C */
06073      , {      280,      280,      280,      280,      280} /* UG,UA,U,C,G */
06074      , {      280,      280,      280,      280,      280} /* UG,UA,U,C,U */
06075      }
06076      , {{      250,      230,      240,      230,      250} /* UG,UA,U,G,E */
06077      , {      240,      180,      240,      180,      180} /* UG,UA,U,G,A */
06078      , {      230,      230,      230,      230,      230} /* UG,UA,U,G,C */
06079      , {      250,      120,      120,      120,      250} /* UG,UA,U,G,G */
06080      , {      230,      230,      230,      230,      230} /* UG,UA,U,G,U */
06081      }
06082      , {{      280,      280,      280,      280,      280} /* UG,UA,U,U,E */
06083      , {      280,      280,      280,      280,      280} /* UG,UA,U,U,A */
06084      , {      250,      250,      250,      250,      250} /* UG,UA,U,U,C */
06085      , {      280,      280,      280,      280,      280} /* UG,UA,U,U,G */
06086      , {      190,      190,      190,      190,      190} /* UG,UA,U,U,U */
06087      }
06088      }
06089      }
06090      , {{{      400,      360,      370,      400,      400} /* UG,NN,E,E,E */
06091      , {      400,      360,      370,      370,      400} /* UG,NN,E,E,A */
06092      , {      400,      310,      310,      400,      310} /* UG,NN,E,E,C */
06093      , {      340,      310,      310,      340,      310} /* UG,NN,E,E,G */
06094      , {      400,      330,      310,      400,      310} /* UG,NN,E,E,U */
06095      }
06096      , {{      400,      360,      340,      370,      400} /* UG,NN,E,A,E */
06097      , {      400,      360,      340,      370,      400} /* UG,NN,E,A,A */
06098      , {      340,      310,      310,      340,      310} /* UG,NN,E,A,C */
06099      , {      290,      230,      290,      260,      290} /* UG,NN,E,A,G */
06100      , {      340,      310,      310,      340,      310} /* UG,NN,E,A,U */
06101      }
06102      , {{      400,      310,      310,      400,      310} /* UG,NN,E,C,E */
06103      , {      340,      310,      310,      340,      310} /* UG,NN,E,C,A */
06104      , {      400,      310,      310,      400,      310} /* UG,NN,E,C,C */
06105      , {      340,      310,      310,      340,      310} /* UG,NN,E,C,G */
06106      , {      400,      310,      310,      400,      310} /* UG,NN,E,C,U */
06107      }
06108      , {{      370,      360,      370,      340,      370} /* UG,NN,E,G,E */
06109      , {      370,      360,      370,      340,      370} /* UG,NN,E,G,A */
06110      , {      340,      310,      310,      340,      310} /* UG,NN,E,G,C */
06111      , {      340,      180,      180,      340,      310} /* UG,NN,E,G,G */
06112      , {      340,      310,      310,      340,      310} /* UG,NN,E,G,U */
06113      }
06114      , {{{      400,      330,      310,      400,      310} /* UG,NN,E,U,E */
06115      , {      340,      310,      310,      340,      310} /* UG,NN,E,U,A */
06116      , {      400,      310,      310,      400,      310} /* UG,NN,E,U,C */
06117      , {      340,      310,      310,      340,      310} /* UG,NN,E,U,G */
06118      , {      340,      330,      310,      340,      310} /* UG,NN,E,U,U */
06119      }
06120      }
06121      , {{{      400,      360,      340,      400,      340} /* UG,NN,A,E,E */
06122      , {      370,      360,      340,      370,      340} /* UG,NN,A,E,A */
06123      , {      400,      270,      310,      400,      310} /* UG,NN,A,E,C */
06124      , {      340,      270,      310,      340,      310} /* UG,NN,A,E,G */
06125      , {      400,      330,      310,      400,      310} /* UG,NN,A,E,U */
06126      }
06127      , {{      370,      360,      340,      370,      340} /* UG,NN,A,A,E */
06128      , {      370,      360,      340,      370,      340} /* UG,NN,A,A,A */
06129      , {      340,      270,      310,      340,      310} /* UG,NN,A,A,C */
06130      , {      260,      190,      230,      260,      230} /* UG,NN,A,A,G */
06131      , {      340,      270,      310,      340,      310} /* UG,NN,A,A,U */
06132      }
06133      , {{      400,      270,      310,      400,      310} /* UG,NN,A,C,E */
06134      , {      340,      270,      310,      340,      310} /* UG,NN,A,C,A */
06135      , {      400,      270,      310,      400,      310} /* UG,NN,A,C,C */
06136      , {      340,      270,      310,      340,      310} /* UG,NN,A,C,G */
06137      , {      400,      270,      310,      400,      310} /* UG,NN,A,C,U */
06138      }
06139      , {{      360,      360,      310,      340,      310} /* UG,NN,A,G,E */
06140      , {      360,      360,      310,      340,      310} /* UG,NN,A,G,A */
06141      , {      340,      270,      310,      340,      310} /* UG,NN,A,G,C */
06142      , {      340,      140,      180,      340,      180} /* UG,NN,A,G,G */
06143      , {      340,      270,      310,      340,      310} /* UG,NN,A,G,U */
06144      }
06145      , {{{      400,      330,      310,      400,      310} /* UG,NN,A,U,E */
06146      , {      340,      270,      310,      340,      310} /* UG,NN,A,U,A */
06147      , {      400,      270,      310,      400,      310} /* UG,NN,A,U,C */
06148      , {      340,      270,      310,      340,      310} /* UG,NN,A,U,G */
06149      , {      340,      330,      310,      340,      310} /* UG,NN,A,U,U */
06150      }
06151      }
06152      , {{{      370,      340,      370,      340,      370} /* UG,NN,C,E,E */
06153      , {      370,      340,      370,      340,      370} /* UG,NN,C,E,A */

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06154      , {      310,      310,      310,      310,      310} /* UG,NN,C,E,C */
06155      , {      310,      310,      310,      310,      310} /* UG,NN,C,E,G */
06156      , {      310,      310,      310,      310,      310} /* UG,NN,C,E,U */
06157      }
06158      , { {      340,      340,      340,      340,      340} /* UG,NN,C,A,E */
06159      , {      340,      340,      340,      340,      340} /* UG,NN,C,A,A */
06160      , {      310,      310,      310,      310,      310} /* UG,NN,C,A,C */
06161      , {      290,      230,      290,      230,      290} /* UG,NN,C,A,G */
06162      , {      310,      310,      310,      310,      310} /* UG,NN,C,A,U */
06163      }
06164      , { {      310,      310,      310,      310,      310} /* UG,NN,C,C,E */
06165      , {      310,      310,      310,      310,      310} /* UG,NN,C,C,A */
06166      , {      310,      310,      310,      310,      310} /* UG,NN,C,C,C */
06167      , {      310,      310,      310,      310,      310} /* UG,NN,C,C,G */
06168      , {      310,      310,      310,      310,      310} /* UG,NN,C,C,U */
06169      }
06170      , { {      370,      310,      370,      310,      370} /* UG,NN,C,G,E */
06171      , {      370,      310,      370,      310,      370} /* UG,NN,C,G,A */
06172      , {      310,      310,      310,      310,      310} /* UG,NN,C,G,C */
06173      , {      180,      180,      180,      180,      180} /* UG,NN,C,G,G */
06174      , {      310,      310,      310,      310,      310} /* UG,NN,C,G,U */
06175      }
06176      , { {      310,      310,      310,      310,      310} /* UG,NN,C,U,E */
06177      , {      310,      310,      310,      310,      310} /* UG,NN,C,U,A */
06178      , {      310,      310,      310,      310,      310} /* UG,NN,C,U,C */
06179      , {      310,      310,      310,      310,      310} /* UG,NN,C,U,G */
06180      , {      310,      310,      310,      310,      310} /* UG,NN,C,U,U */
06181      }
06182      }
06183      , { { {      340,      230,      340,      310,      340} /* UG,NN,G,E,E */
06184      , {      340,      220,      340,      310,      340} /* UG,NN,G,E,A */
06185      , {      310,      230,      310,      180,      310} /* UG,NN,G,E,C */
06186      , {      310,      170,      310,      310,      310} /* UG,NN,G,E,G */
06187      , {      310,      230,      310,      310,      310} /* UG,NN,G,E,U */
06188      }
06189      , { {      340,      220,      340,      230,      340} /* UG,NN,G,A,E */
06190      , {      340,      220,      340,      210,      340} /* UG,NN,G,A,A */
06191      , {      310,      170,      310,      180,      310} /* UG,NN,G,A,C */
06192      , {      230,      40,      230,      230,      230} /* UG,NN,G,A,G */
06193      , {      310,      170,      310,      180,      310} /* UG,NN,G,A,U */
06194      }
06195      , { {      310,      230,      310,      180,      310} /* UG,NN,G,C,E */
06196      , {      310,      170,      310,      180,      310} /* UG,NN,G,C,A */
06197      , {      310,      230,      310,      180,      310} /* UG,NN,G,C,C */
06198      , {      310,      170,      310,      180,      310} /* UG,NN,G,C,G */
06199      , {      310,      230,      310,      180,      310} /* UG,NN,G,C,U */
06200      }
06201      , { {      310,      170,      310,      310,      310} /* UG,NN,G,G,E */
06202      , {      310,      170,      310,      310,      310} /* UG,NN,G,G,A */
06203      , {      310,      170,      310,      180,      310} /* UG,NN,G,G,C */
06204      , {      310,      170,      180,      310,      180} /* UG,NN,G,G,G */
06205      , {      310,      170,      310,      180,      310} /* UG,NN,G,G,U */
06206      }
06207      , { {      310,      230,      310,      310,      310} /* UG,NN,G,U,E */
06208      , {      310,      170,      310,      180,      310} /* UG,NN,G,U,A */
06209      , {      310,      230,      310,      180,      310} /* UG,NN,G,U,C */
06210      , {      310,      170,      310,      180,      310} /* UG,NN,G,U,G */
06211      , {      310,      170,      310,      310,      310} /* UG,NN,G,U,U */
06212      }
06213      }
06214      , { { {      400,      340,      370,      340,      400} /* UG,NN,U,E,E */
06215      , {      400,      340,      370,      340,      400} /* UG,NN,U,E,A */
06216      , {      310,      310,      310,      310,      310} /* UG,NN,U,E,C */
06217      , {      310,      310,      310,      310,      310} /* UG,NN,U,E,G */
06218      , {      310,      310,      310,      310,      310} /* UG,NN,U,E,U */
06219      }
06220      , { {      400,      340,      340,      340,      400} /* UG,NN,U,A,E */
06221      , {      400,      340,      340,      340,      400} /* UG,NN,U,A,A */
06222      , {      310,      310,      310,      310,      310} /* UG,NN,U,A,C */
06223      , {      290,      230,      290,      230,      230} /* UG,NN,U,A,G */
06224      , {      310,      310,      310,      310,      310} /* UG,NN,U,A,U */
06225      }
06226      , { {      310,      310,      310,      310,      310} /* UG,NN,U,C,E */
06227      , {      310,      310,      310,      310,      310} /* UG,NN,U,C,A */
06228      , {      310,      310,      310,      310,      310} /* UG,NN,U,C,C */
06229      , {      310,      310,      310,      310,      310} /* UG,NN,U,C,G */
06230      , {      310,      310,      310,      310,      310} /* UG,NN,U,C,U */
06231      }
06232      , { {      370,      310,      370,      310,      310} /* UG,NN,U,G,E */
06233      , {      370,      310,      370,      310,      310} /* UG,NN,U,G,A */
06234      , {      310,      310,      310,      310,      310} /* UG,NN,U,G,C */
06235      , {      310,      180,      180,      180,      310} /* UG,NN,U,G,G */
06236      , {      310,      310,      310,      310,      310} /* UG,NN,U,G,U */
06237      }
06238      , { {      310,      310,      310,      310,      310} /* UG,NN,U,U,E */
06239      , {      310,      310,      310,      310,      310} /* UG,NN,U,U,A */
06240      , {      310,      310,      310,      310,      310} /* UG,NN,U,U,C */

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06241      , {      310,      310,      310,      310,      310} /* UG,NN,U,U,G */
06242      , {      310,      310,      310,      310,      310} /* UG,NN,U,U,U */
06243      }
06244      }
06245      }
06246      }
06247      ,{{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,E */
06248      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,A */
06249      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,C */
06250      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,G */
06251      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,U */
06252      }
06253      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,A,E */
06254      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,A,A */
06255      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,A,C */
06256      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,A,G */
06257      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,A,U */
06258      }
06259      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,C,E */
06260      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,C,A */
06261      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,C,C */
06262      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,C,G */
06263      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,C,U */
06264      }
06265      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,G,E */
06266      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,G,A */
06267      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,G,C */
06268      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,G,G */
06269      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,G,U */
06270      }
06271      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,U,E */
06272      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,U,A */
06273      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,U,C */
06274      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,U,G */
06275      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,U,U */
06276      }
06277      }
06278      ,{{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,E,E */
06279      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,E,A */
06280      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,E,C */
06281      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,E,G */
06282      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,E,U */
06283      }
06284      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,A,E */
06285      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,A,A */
06286      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,A,C */
06287      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,A,G */
06288      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,A,U */
06289      }
06290      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,C,E */
06291      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,C,A */
06292      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,C,C */
06293      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,C,G */
06294      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,C,U */
06295      }
06296      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,G,E */
06297      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,G,A */
06298      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,G,C */
06299      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,G,G */
06300      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,G,U */
06301      }
06302      ,{{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,U,E */
06303      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,U,A */
06304      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,U,C */
06305      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,U,G */
06306      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,A,U,U */
06307      }
06308      }
06309      ,{{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,E,E */
06310      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,E,A */
06311      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,E,C */
06312      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,E,G */
06313      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,E,U */
06314      }
06315      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,A,E */
06316      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,A,A */
06317      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,A,C */
06318      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,A,G */
06319      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,A,U */
06320      }
06321      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,C,E */
06322      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,C,A */
06323      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,C,C */
06324      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,C,G */
06325      , {      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,C,U */
06326      }
06327      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,C,G,E */

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06328 , { INF, INF, INF, INF, INF} /* AU,NP,C,G,A */
06329 , { INF, INF, INF, INF, INF} /* AU,NP,C,G,C */
06330 , { INF, INF, INF, INF, INF} /* AU,NP,C,G,G */
06331 , { INF, INF, INF, INF, INF} /* AU,NP,C,G,U */
06332 }
06333 , { { INF, INF, INF, INF, INF} /* AU,NP,C,U,E */
06334 , { INF, INF, INF, INF, INF} /* AU,NP,C,U,A */
06335 , { INF, INF, INF, INF, INF} /* AU,NP,C,U,C */
06336 , { INF, INF, INF, INF, INF} /* AU,NP,C,U,G */
06337 , { INF, INF, INF, INF, INF} /* AU,NP,C,U,U */
06338 }
06339 }
06340 , { { { INF, INF, INF, INF, INF} /* AU,NP,G,E,E */
06341 , { INF, INF, INF, INF, INF} /* AU,NP,G,E,A */
06342 , { INF, INF, INF, INF, INF} /* AU,NP,G,E,C */
06343 , { INF, INF, INF, INF, INF} /* AU,NP,G,E,G */
06344 , { INF, INF, INF, INF, INF} /* AU,NP,G,E,U */
06345 }
06346 , { { INF, INF, INF, INF, INF} /* AU,NP,G,A,E */
06347 , { INF, INF, INF, INF, INF} /* AU,NP,G,A,A */
06348 , { INF, INF, INF, INF, INF} /* AU,NP,G,A,C */
06349 , { INF, INF, INF, INF, INF} /* AU,NP,G,A,G */
06350 , { INF, INF, INF, INF, INF} /* AU,NP,G,A,U */
06351 }
06352 , { { INF, INF, INF, INF, INF} /* AU,NP,G,C,E */
06353 , { INF, INF, INF, INF, INF} /* AU,NP,G,C,A */
06354 , { INF, INF, INF, INF, INF} /* AU,NP,G,C,C */
06355 , { INF, INF, INF, INF, INF} /* AU,NP,G,C,G */
06356 , { INF, INF, INF, INF, INF} /* AU,NP,G,C,U */
06357 }
06358 , { { INF, INF, INF, INF, INF} /* AU,NP,G,G,E */
06359 , { INF, INF, INF, INF, INF} /* AU,NP,G,G,A */
06360 , { INF, INF, INF, INF, INF} /* AU,NP,G,G,C */
06361 , { INF, INF, INF, INF, INF} /* AU,NP,G,G,G */
06362 , { INF, INF, INF, INF, INF} /* AU,NP,G,G,U */
06363 }
06364 , { { INF, INF, INF, INF, INF} /* AU,NP,G,U,E */
06365 , { INF, INF, INF, INF, INF} /* AU,NP,G,U,A */
06366 , { INF, INF, INF, INF, INF} /* AU,NP,G,U,C */
06367 , { INF, INF, INF, INF, INF} /* AU,NP,G,U,G */
06368 , { INF, INF, INF, INF, INF} /* AU,NP,G,U,U */
06369 }
06370 }
06371 , { { { INF, INF, INF, INF, INF} /* AU,NP,U,E,E */
06372 , { INF, INF, INF, INF, INF} /* AU,NP,U,E,A */
06373 , { INF, INF, INF, INF, INF} /* AU,NP,U,E,C */
06374 , { INF, INF, INF, INF, INF} /* AU,NP,U,E,G */
06375 , { INF, INF, INF, INF, INF} /* AU,NP,U,E,U */
06376 }
06377 , { { INF, INF, INF, INF, INF} /* AU,NP,U,A,E */
06378 , { INF, INF, INF, INF, INF} /* AU,NP,U,A,A */
06379 , { INF, INF, INF, INF, INF} /* AU,NP,U,A,C */
06380 , { INF, INF, INF, INF, INF} /* AU,NP,U,A,G */
06381 , { INF, INF, INF, INF, INF} /* AU,NP,U,A,U */
06382 }
06383 , { { INF, INF, INF, INF, INF} /* AU,NP,U,C,E */
06384 , { INF, INF, INF, INF, INF} /* AU,NP,U,C,A */
06385 , { INF, INF, INF, INF, INF} /* AU,NP,U,C,C */
06386 , { INF, INF, INF, INF, INF} /* AU,NP,U,C,G */
06387 , { INF, INF, INF, INF, INF} /* AU,NP,U,C,U */
06388 }
06389 , { { INF, INF, INF, INF, INF} /* AU,NP,U,G,E */
06390 , { INF, INF, INF, INF, INF} /* AU,NP,U,G,A */
06391 , { INF, INF, INF, INF, INF} /* AU,NP,U,G,C */
06392 , { INF, INF, INF, INF, INF} /* AU,NP,U,G,G */
06393 , { INF, INF, INF, INF, INF} /* AU,NP,U,G,U */
06394 }
06395 , { { INF, INF, INF, INF, INF} /* AU,NP,U,U,E */
06396 , { INF, INF, INF, INF, INF} /* AU,NP,U,U,A */
06397 , { INF, INF, INF, INF, INF} /* AU,NP,U,U,C */
06398 , { INF, INF, INF, INF, INF} /* AU,NP,U,U,G */
06399 , { INF, INF, INF, INF, INF} /* AU,NP,U,U,U */
06400 }
06401 }
06402 }
06403 , { { { { 240, 240, 220, 230, 220} /* AU,CG,E,E,E */
06404 , { 240, 240, 220, 210, 220} /* AU,CG,E,E,A */
06405 , { 230, 220, 210, 230, 210} /* AU,CG,E,E,C */
06406 , { 240, 240, 220, 210, 220} /* AU,CG,E,E,G */
06407 , { 210, 210, 190, 210, 190} /* AU,CG,E,E,U */
06408 }
06409 , { { 200, 200, 180, 170, 180} /* AU,CG,E,A,E */
06410 , { 200, 200, 180, 170, 180} /* AU,CG,E,A,A */
06411 , { 190, 190, 180, 170, 180} /* AU,CG,E,A,C */
06412 , { 140, 100, 140, 80, 140} /* AU,CG,E,A,G */
06413 , { 190, 190, 180, 170, 180} /* AU,CG,E,A,U */
06414 }

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06415 ,{{ 240, 240, 220, 230, 220} /* AU,CG,E,C,E */
06416 ,{ 240, 240, 220, 210, 220} /* AU,CG,E,C,A */
06417 ,{ 230, 220, 210, 230, 210} /* AU,CG,E,C,C */
06418 ,{ 240, 240, 220, 210, 220} /* AU,CG,E,C,G */
06419 ,{ 210, 210, 190, 210, 190} /* AU,CG,E,C,U */
06420 }
06421 ,{{ 190, 190, 180, 170, 180} /* AU,CG,E,G,E */
06422 ,{ 140, 100, 140, 80, 140} /* AU,CG,E,G,A */
06423 ,{ 190, 190, 180, 170, 180} /* AU,CG,E,G,C */
06424 ,{ 130, 50, 30, 130, 70} /* AU,CG,E,G,G */
06425 ,{ 190, 190, 180, 170, 180} /* AU,CG,E,G,U */
06426 }
06427 ,{{ 240, 240, 220, 210, 220} /* AU,CG,E,U,E */
06428 ,{ 240, 240, 220, 210, 220} /* AU,CG,E,U,A */
06429 ,{ 210, 210, 190, 210, 190} /* AU,CG,E,U,C */
06430 ,{ 240, 240, 220, 210, 220} /* AU,CG,E,U,G */
06431 ,{ 180, 180, 100, 90, 100} /* AU,CG,E,U,U */
06432 }
06433 }
06434 ,{{{ 240, 240, 220, 230, 220} /* AU,CG,A,E,E */
06435 ,{ 240, 240, 220, 180, 220} /* AU,CG,A,E,A */
06436 ,{ 230, 220, 210, 230, 210} /* AU,CG,A,E,C */
06437 ,{ 240, 240, 220, 180, 220} /* AU,CG,A,E,G */
06438 ,{ 210, 210, 190, 210, 190} /* AU,CG,A,E,U */
06439 }
06440 ,{{ 200, 200, 180, 140, 180} /* AU,CG,A,A,E */
06441 ,{ 200, 200, 180, 140, 180} /* AU,CG,A,A,A */
06442 ,{ 190, 190, 180, 140, 180} /* AU,CG,A,A,C */
06443 ,{ 100, 100, 90, 50, 90} /* AU,CG,A,A,G */
06444 ,{ 190, 190, 180, 140, 180} /* AU,CG,A,A,U */
06445 }
06446 ,{{ 240, 240, 220, 230, 220} /* AU,CG,A,C,E */
06447 ,{ 240, 240, 220, 180, 220} /* AU,CG,A,C,A */
06448 ,{ 230, 220, 210, 230, 210} /* AU,CG,A,C,C */
06449 ,{ 240, 240, 220, 180, 220} /* AU,CG,A,C,G */
06450 ,{ 210, 210, 190, 210, 190} /* AU,CG,A,C,U */
06451 }
06452 ,{{ 190, 190, 180, 140, 180} /* AU,CG,A,G,E */
06453 ,{ 100, 100, 90, 50, 90} /* AU,CG,A,G,A */
06454 ,{ 190, 190, 180, 140, 180} /* AU,CG,A,G,C */
06455 ,{ 120, 50, 30, 120, 30} /* AU,CG,A,G,G */
06456 ,{ 190, 190, 180, 140, 180} /* AU,CG,A,G,U */
06457 }
06458 ,{{ 240, 240, 220, 210, 220} /* AU,CG,A,U,E */
06459 ,{ 240, 240, 220, 180, 220} /* AU,CG,A,U,A */
06460 ,{ 210, 210, 190, 210, 190} /* AU,CG,A,U,C */
06461 ,{ 240, 240, 220, 180, 220} /* AU,CG,A,U,G */
06462 ,{ 180, 180, 100, 60, 100} /* AU,CG,A,U,U */
06463 }
06464 }
06465 ,{{{ 220, 210, 220, 210, 220} /* AU,CG,C,E,E */
06466 ,{ 220, 210, 220, 210, 220} /* AU,CG,C,E,A */
06467 ,{ 200, 200, 200, 200, 200} /* AU,CG,C,E,C */
06468 ,{ 220, 210, 220, 210, 220} /* AU,CG,C,E,G */
06469 ,{ 190, 180, 190, 180, 190} /* AU,CG,C,E,U */
06470 }
06471 ,{{ 180, 170, 180, 170, 180} /* AU,CG,C,A,E */
06472 ,{ 180, 170, 180, 170, 180} /* AU,CG,C,A,A */
06473 ,{ 170, 170, 170, 170, 170} /* AU,CG,C,A,C */
06474 ,{ 140, 80, 140, 80, 140} /* AU,CG,C,A,G */
06475 ,{ 170, 170, 170, 170, 170} /* AU,CG,C,A,U */
06476 }
06477 ,{{ 220, 210, 220, 210, 220} /* AU,CG,C,C,E */
06478 ,{ 220, 210, 220, 210, 220} /* AU,CG,C,C,A */
06479 ,{ 200, 200, 200, 200, 200} /* AU,CG,C,C,C */
06480 ,{ 220, 210, 220, 210, 220} /* AU,CG,C,C,G */
06481 ,{ 190, 180, 190, 180, 190} /* AU,CG,C,C,U */
06482 }
06483 ,{{ 170, 170, 170, 170, 170} /* AU,CG,C,G,E */
06484 ,{ 140, 80, 140, 80, 140} /* AU,CG,C,G,A */
06485 ,{ 170, 170, 170, 170, 170} /* AU,CG,C,G,C */
06486 ,{ 30, 20, 30, 20, 30} /* AU,CG,C,G,G */
06487 ,{ 170, 170, 170, 170, 170} /* AU,CG,C,G,U */
06488 }
06489 ,{{ 220, 210, 220, 210, 220} /* AU,CG,C,U,E */
06490 ,{ 220, 210, 220, 210, 220} /* AU,CG,C,U,A */
06491 ,{ 190, 180, 190, 180, 190} /* AU,CG,C,U,C */
06492 ,{ 220, 210, 220, 210, 220} /* AU,CG,C,U,G */
06493 ,{ 100, 90, 100, 90, 100} /* AU,CG,C,U,U */
06494 }
06495 }
06496 ,{{{ 220, 160, 220, 130, 220} /* AU,CG,G,E,E */
06497 ,{ 220, 110, 220, 60, 220} /* AU,CG,G,E,A */
06498 ,{ 210, 160, 210, 50, 210} /* AU,CG,G,E,C */
06499 ,{ 220, 110, 220, 130, 220} /* AU,CG,G,E,G */
06500 ,{ 190, 140, 190, 70, 190} /* AU,CG,G,E,U */
06501 }

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06502 ,{{ 180, 70, 180, 60, 180} /* AU,CG,G,A,E */
06503 ,{ 180, 70, 180, 20, 180} /* AU,CG,G,A,A */
06504 ,{ 180, 70, 180, 20, 180} /* AU,CG,G,A,C */
06505 ,{ 90, -20, 90, 60, 90} /* AU,CG,G,A,G */
06506 ,{ 180, 70, 180, 20, 180} /* AU,CG,G,A,U */
06507 }
06508 ,{{ 220, 160, 220, 60, 220} /* AU,CG,G,C,E */
06509 ,{ 220, 110, 220, 60, 220} /* AU,CG,G,C,A */
06510 ,{ 210, 160, 210, 50, 210} /* AU,CG,G,C,C */
06511 ,{ 220, 110, 220, 60, 220} /* AU,CG,G,C,G */
06512 ,{ 190, 140, 190, 30, 190} /* AU,CG,G,C,U */
06513 }
06514 ,{{ 180, 70, 180, 130, 180} /* AU,CG,G,G,E */
06515 ,{ 90, -20, 90, 60, 90} /* AU,CG,G,G,A */
06516 ,{ 180, 70, 180, 20, 180} /* AU,CG,G,G,C */
06517 ,{ 130, 50, 30, 130, 30} /* AU,CG,G,G,G */
06518 ,{ 180, 70, 180, 20, 180} /* AU,CG,G,G,U */
06519 }
06520 ,{{ 220, 140, 220, 70, 220} /* AU,CG,G,U,E */
06521 ,{ 220, 110, 220, 60, 220} /* AU,CG,G,U,A */
06522 ,{ 190, 140, 190, 30, 190} /* AU,CG,G,U,C */
06523 ,{ 220, 110, 220, 60, 220} /* AU,CG,G,U,G */
06524 ,{ 100, 0, 100, 70, 100} /* AU,CG,G,U,U */
06525 }
06526 }
06527 ,{{{ 220, 210, 220, 210, 150} /* AU,CG,U,E,E */
06528 ,{ 220, 210, 220, 210, 150} /* AU,CG,U,E,A */
06529 ,{ 200, 200, 200, 200, 110} /* AU,CG,U,E,C */
06530 ,{ 220, 210, 220, 210, 130} /* AU,CG,U,E,G */
06531 ,{ 190, 180, 190, 180, 100} /* AU,CG,U,E,U */
06532 }
06533 ,{{ 180, 170, 180, 170, 150} /* AU,CG,U,A,E */
06534 ,{ 180, 170, 180, 170, 150} /* AU,CG,U,A,A */
06535 ,{ 170, 170, 170, 170, 80} /* AU,CG,U,A,C */
06536 ,{ 140, 80, 140, 80, 0} /* AU,CG,U,A,G */
06537 ,{ 170, 170, 170, 170, 80} /* AU,CG,U,A,U */
06538 }
06539 ,{{ 220, 210, 220, 210, 130} /* AU,CG,U,C,E */
06540 ,{ 220, 210, 220, 210, 130} /* AU,CG,U,C,A */
06541 ,{ 200, 200, 200, 200, 110} /* AU,CG,U,C,C */
06542 ,{ 220, 210, 220, 210, 130} /* AU,CG,U,C,G */
06543 ,{ 190, 180, 190, 180, 100} /* AU,CG,U,C,U */
06544 }
06545 ,{{ 170, 170, 170, 170, 80} /* AU,CG,U,G,E */
06546 ,{ 140, 80, 140, 80, 0} /* AU,CG,U,G,A */
06547 ,{ 170, 170, 170, 170, 80} /* AU,CG,U,G,C */
06548 ,{ 70, 20, 30, 20, 70} /* AU,CG,U,G,G */
06549 ,{ 170, 170, 170, 170, 80} /* AU,CG,U,G,U */
06550 }
06551 ,{{ 220, 210, 220, 210, 130} /* AU,CG,U,U,E */
06552 ,{ 220, 210, 220, 210, 130} /* AU,CG,U,U,A */
06553 ,{ 190, 180, 190, 180, 100} /* AU,CG,U,U,C */
06554 ,{ 220, 210, 220, 210, 130} /* AU,CG,U,U,G */
06555 ,{ 100, 90, 100, 90, 10} /* AU,CG,U,U,U */
06556 }
06557 }
06558 }
06559 ,{{{ 210, 210, 200, 200, 200} /* AU,GC,E,E,E */
06560 ,{ 210, 210, 200, 190, 200} /* AU,GC,E,E,A */
06561 ,{ 200, 190, 180, 200, 180} /* AU,GC,E,E,C */
06562 ,{ 180, 180, 170, 160, 170} /* AU,GC,E,E,G */
06563 ,{ 190, 190, 170, 190, 170} /* AU,GC,E,E,U */
06564 }
06565 ,{{ 210, 210, 200, 190, 200} /* AU,GC,E,A,E */
06566 ,{ 210, 210, 200, 190, 200} /* AU,GC,E,A,A */
06567 ,{ 190, 190, 170, 160, 170} /* AU,GC,E,A,C */
06568 ,{ 50, 10, 50, -10, 50} /* AU,GC,E,A,G */
06569 ,{ 190, 190, 170, 160, 170} /* AU,GC,E,A,U */
06570 }
06571 ,{{ 190, 190, 170, 190, 170} /* AU,GC,E,C,E */
06572 ,{ 180, 180, 170, 160, 170} /* AU,GC,E,C,A */
06573 ,{ 190, 190, 170, 190, 170} /* AU,GC,E,C,C */
06574 ,{ 180, 180, 170, 160, 170} /* AU,GC,E,C,G */
06575 ,{ 190, 190, 170, 190, 170} /* AU,GC,E,C,U */
06576 }
06577 ,{{ 190, 190, 170, 160, 170} /* AU,GC,E,G,E */
06578 ,{ 110, 70, 110, 50, 110} /* AU,GC,E,G,A */
06579 ,{ 190, 190, 170, 160, 170} /* AU,GC,E,G,C */
06580 ,{ 130, 50, 30, 130, 70} /* AU,GC,E,G,G */
06581 ,{ 190, 190, 170, 160, 170} /* AU,GC,E,G,U */
06582 }
06583 ,{{ 200, 190, 180, 200, 180} /* AU,GC,E,U,E */
06584 ,{ 180, 180, 170, 160, 170} /* AU,GC,E,U,A */
06585 ,{ 200, 190, 180, 200, 180} /* AU,GC,E,U,C */
06586 ,{ 180, 180, 170, 160, 170} /* AU,GC,E,U,G */
06587 ,{ 170, 170, 100, 90, 100} /* AU,GC,E,U,U */
06588 }
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06589     }
06590     ,{{{ 210, 210, 200, 200, 200} /* AU,GC,A,E,E */
06591     ,{ 210, 210, 200, 160, 200} /* AU,GC,A,E,A */
06592     ,{ 200, 190, 180, 200, 180} /* AU,GC,A,E,C */
06593     ,{ 180, 180, 170, 130, 170} /* AU,GC,A,E,G */
06594     ,{ 190, 190, 170, 190, 170} /* AU,GC,A,E,U */
06595     }
06596     ,{{{ 210, 210, 200, 160, 200} /* AU,GC,A,A,E */
06597     ,{ 210, 210, 200, 160, 200} /* AU,GC,A,A,A */
06598     ,{ 190, 190, 170, 130, 170} /* AU,GC,A,A,C */
06599     ,{ 10, 10, 0, -40, 0} /* AU,GC,A,A,G */
06600     ,{ 190, 190, 170, 130, 170} /* AU,GC,A,A,U */
06601     }
06602     ,{{{ 190, 190, 170, 190, 170} /* AU,GC,A,C,E */
06603     ,{ 180, 180, 170, 130, 170} /* AU,GC,A,C,A */
06604     ,{ 190, 190, 170, 190, 170} /* AU,GC,A,C,C */
06605     ,{ 180, 180, 170, 130, 170} /* AU,GC,A,C,G */
06606     ,{ 190, 190, 170, 190, 170} /* AU,GC,A,C,U */
06607     }
06608     ,{{{ 190, 190, 170, 130, 170} /* AU,GC,A,G,E */
06609     ,{ 70, 70, 60, 20, 60} /* AU,GC,A,G,A */
06610     ,{ 190, 190, 170, 130, 170} /* AU,GC,A,G,C */
06611     ,{ 120, 50, 30, 120, 30} /* AU,GC,A,G,G */
06612     ,{ 190, 190, 170, 130, 170} /* AU,GC,A,G,U */
06613     }
06614     ,{{{ 200, 190, 180, 200, 180} /* AU,GC,A,U,E */
06615     ,{ 180, 180, 170, 130, 170} /* AU,GC,A,U,A */
06616     ,{ 200, 190, 180, 200, 180} /* AU,GC,A,U,C */
06617     ,{ 180, 180, 170, 130, 170} /* AU,GC,A,U,G */
06618     ,{ 170, 170, 100, 60, 100} /* AU,GC,A,U,U */
06619     }
06620     }
06621     ,{{{ 190, 190, 190, 190, 190} /* AU,GC,C,E,E */
06622     ,{ 190, 190, 190, 190, 190} /* AU,GC,C,E,A */
06623     ,{ 170, 170, 170, 170, 170} /* AU,GC,C,E,C */
06624     ,{ 160, 160, 160, 160, 160} /* AU,GC,C,E,G */
06625     ,{ 170, 160, 170, 160, 170} /* AU,GC,C,E,U */
06626     }
06627     ,{{{ 190, 190, 190, 190, 190} /* AU,GC,C,A,E */
06628     ,{ 190, 190, 190, 190, 190} /* AU,GC,C,A,A */
06629     ,{ 170, 160, 170, 160, 170} /* AU,GC,C,A,C */
06630     ,{ 50, -10, 50, -10, 50} /* AU,GC,C,A,G */
06631     ,{ 170, 160, 170, 160, 170} /* AU,GC,C,A,U */
06632     }
06633     ,{{{ 170, 160, 170, 160, 170} /* AU,GC,C,C,E */
06634     ,{ 160, 160, 160, 160, 160} /* AU,GC,C,C,A */
06635     ,{ 170, 160, 170, 160, 170} /* AU,GC,C,C,C */
06636     ,{ 160, 160, 160, 160, 160} /* AU,GC,C,C,G */
06637     ,{ 170, 160, 170, 160, 170} /* AU,GC,C,C,U */
06638     }
06639     ,{{{ 170, 160, 170, 160, 170} /* AU,GC,C,G,E */
06640     ,{ 110, 50, 110, 50, 110} /* AU,GC,C,G,A */
06641     ,{ 170, 160, 170, 160, 170} /* AU,GC,C,G,C */
06642     ,{ 30, 20, 30, 20, 30} /* AU,GC,C,G,G */
06643     ,{ 170, 160, 170, 160, 170} /* AU,GC,C,G,U */
06644     }
06645     ,{{{ 170, 170, 170, 170, 170} /* AU,GC,C,U,E */
06646     ,{ 160, 160, 160, 160, 160} /* AU,GC,C,U,A */
06647     ,{ 170, 170, 170, 170, 170} /* AU,GC,C,U,C */
06648     ,{ 160, 160, 160, 160, 160} /* AU,GC,C,U,G */
06649     ,{ 90, 90, 90, 90, 90} /* AU,GC,C,U,U */
06650     }
06651     }
06652     ,{{{ 200, 130, 200, 130, 200} /* AU,GC,G,E,E */
06653     ,{ 200, 90, 200, 40, 200} /* AU,GC,G,E,A */
06654     ,{ 180, 130, 180, 20, 180} /* AU,GC,G,E,C */
06655     ,{ 170, 60, 170, 130, 170} /* AU,GC,G,E,G */
06656     ,{ 170, 120, 170, 70, 170} /* AU,GC,G,E,U */
06657     }
06658     ,{{{ 200, 90, 200, 40, 200} /* AU,GC,G,A,E */
06659     ,{ 200, 90, 200, 40, 200} /* AU,GC,G,A,A */
06660     ,{ 170, 60, 170, 10, 170} /* AU,GC,G,A,C */
06661     ,{ 0, -110, 0, -30, 0} /* AU,GC,G,A,G */
06662     ,{ 170, 60, 170, 10, 170} /* AU,GC,G,A,U */
06663     }
06664     ,{{{ 170, 120, 170, 10, 170} /* AU,GC,G,C,E */
06665     ,{ 170, 60, 170, 10, 170} /* AU,GC,G,C,A */
06666     ,{ 170, 120, 170, 10, 170} /* AU,GC,G,C,C */
06667     ,{ 170, 60, 170, 10, 170} /* AU,GC,G,C,G */
06668     ,{ 170, 120, 170, 10, 170} /* AU,GC,G,C,U */
06669     }
06670     ,{{{ 170, 60, 170, 130, 170} /* AU,GC,G,G,E */
06671     ,{ 60, -50, 60, 30, 60} /* AU,GC,G,G,A */
06672     ,{ 170, 60, 170, 10, 170} /* AU,GC,G,G,C */
06673     ,{ 130, 50, 30, 130, 30} /* AU,GC,G,G,G */
06674     ,{ 170, 60, 170, 10, 170} /* AU,GC,G,G,U */
06675     }

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06676 ,{{ 180, 130, 180, 70, 180} /* AU,GC,G,U,E */
06677 ,{ 170, 60, 170, 10, 170} /* AU,GC,G,U,A */
06678 ,{ 180, 130, 180, 20, 180} /* AU,GC,G,U,C */
06679 ,{ 170, 60, 170, 10, 170} /* AU,GC,G,U,G */
06680 ,{ 100, -10, 100, 70, 100} /* AU,GC,G,U,U */
06681 }
06682 }
06683 ,{{{ 190, 190, 190, 190, 160} /* AU,GC,U,E,E */
06684 ,{ 190, 190, 190, 190, 160} /* AU,GC,U,E,A */
06685 ,{ 170, 170, 170, 170, 80} /* AU,GC,U,E,C */
06686 ,{ 160, 160, 160, 160, 70} /* AU,GC,U,E,G */
06687 ,{ 170, 160, 170, 160, 80} /* AU,GC,U,E,U */
06688 }
06689 ,{{ 190, 190, 190, 190, 160} /* AU,GC,U,A,E */
06690 ,{ 190, 190, 190, 190, 160} /* AU,GC,U,A,A */
06691 ,{ 170, 160, 170, 160, 80} /* AU,GC,U,A,C */
06692 ,{ 50, -10, 50, -10, -100} /* AU,GC,U,A,G */
06693 ,{ 170, 160, 170, 160, 80} /* AU,GC,U,A,U */
06694 }
06695 ,{{ 170, 160, 170, 160, 80} /* AU,GC,U,C,E */
06696 ,{ 160, 160, 160, 160, 70} /* AU,GC,U,C,A */
06697 ,{ 170, 160, 170, 160, 80} /* AU,GC,U,C,C */
06698 ,{ 160, 160, 160, 160, 70} /* AU,GC,U,C,G */
06699 ,{ 170, 160, 170, 160, 80} /* AU,GC,U,C,U */
06700 }
06701 ,{{ 170, 160, 170, 160, 80} /* AU,GC,U,G,E */
06702 ,{ 110, 50, 110, 50, -30} /* AU,GC,U,G,A */
06703 ,{ 170, 160, 170, 160, 80} /* AU,GC,U,G,C */
06704 ,{ 70, 20, 30, 20, 70} /* AU,GC,U,G,G */
06705 ,{ 170, 160, 170, 160, 80} /* AU,GC,U,G,U */
06706 }
06707 ,{{ 170, 170, 170, 170, 80} /* AU,GC,U,U,E */
06708 ,{ 160, 160, 160, 160, 70} /* AU,GC,U,U,A */
06709 ,{ 170, 170, 170, 170, 80} /* AU,GC,U,U,C */
06710 ,{ 160, 160, 160, 160, 70} /* AU,GC,U,U,G */
06711 ,{ 90, 90, 90, 90, 0} /* AU,GC,U,U,U */
06712 }
06713 }
06714 }
06715 ,{{{ 370, 370, 330, 320, 330} /* AU,GU,E,E,E */
06716 ,{ 340, 340, 330, 320, 330} /* AU,GU,E,E,A */
06717 ,{ 310, 310, 290, 310, 290} /* AU,GU,E,E,C */
06718 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,E,G */
06719 ,{ 370, 370, 290, 310, 290} /* AU,GU,E,E,U */
06720 }
06721 ,{{ 340, 340, 330, 320, 330} /* AU,GU,E,A,E */
06722 ,{ 340, 340, 330, 320, 330} /* AU,GU,E,A,A */
06723 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,A,C */
06724 ,{ 270, 230, 270, 200, 270} /* AU,GU,E,A,G */
06725 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,A,U */
06726 }
06727 ,{{ 310, 310, 290, 310, 290} /* AU,GU,E,C,E */
06728 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,C,A */
06729 ,{ 310, 310, 290, 310, 290} /* AU,GU,E,C,C */
06730 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,C,G */
06731 ,{ 310, 310, 290, 310, 290} /* AU,GU,E,C,U */
06732 }
06733 ,{{ 310, 310, 310, 280, 310} /* AU,GU,E,G,E */
06734 ,{ 310, 270, 310, 240, 310} /* AU,GU,E,G,A */
06735 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,G,C */
06736 ,{ 260, 180, 160, 260, 200} /* AU,GU,E,G,G */
06737 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,G,U */
06738 }
06739 ,{{ 370, 370, 290, 310, 290} /* AU,GU,E,U,E */
06740 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,U,A */
06741 ,{ 310, 310, 290, 310, 290} /* AU,GU,E,U,C */
06742 ,{ 310, 310, 290, 280, 290} /* AU,GU,E,U,G */
06743 ,{ 370, 370, 290, 280, 290} /* AU,GU,E,U,U */
06744 }
06745 }
06746 ,{{{ 370, 370, 330, 310, 330} /* AU,GU,A,E,E */
06747 ,{ 340, 340, 330, 290, 330} /* AU,GU,A,E,A */
06748 ,{ 310, 310, 290, 310, 290} /* AU,GU,A,E,C */
06749 ,{ 310, 310, 290, 250, 290} /* AU,GU,A,E,G */
06750 ,{ 370, 370, 290, 310, 290} /* AU,GU,A,E,U */
06751 }
06752 ,{{ 340, 340, 330, 290, 330} /* AU,GU,A,A,E */
06753 ,{ 340, 340, 330, 290, 330} /* AU,GU,A,A,A */
06754 ,{ 310, 310, 290, 250, 290} /* AU,GU,A,A,C */
06755 ,{ 230, 230, 210, 170, 210} /* AU,GU,A,A,G */
06756 ,{ 310, 310, 290, 250, 290} /* AU,GU,A,A,U */
06757 }
06758 ,{{ 310, 310, 290, 310, 290} /* AU,GU,A,C,E */
06759 ,{ 310, 310, 290, 250, 290} /* AU,GU,A,C,A */
06760 ,{ 310, 310, 290, 310, 290} /* AU,GU,A,C,C */
06761 ,{ 310, 310, 290, 250, 290} /* AU,GU,A,C,G */
06762 ,{ 310, 310, 290, 310, 290} /* AU,GU,A,C,U */

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06763      }
06764      ,{{      310,      310,      290,      250,      290} /* AU, GU, A, G, E */
06765      ,{      270,      270,      250,      210,      250} /* AU, GU, A, G, A */
06766      ,{      310,      310,      290,      250,      290} /* AU, GU, A, G, C */
06767      ,{      250,      180,      160,      250,      160} /* AU, GU, A, G, G */
06768      ,{      310,      310,      290,      250,      290} /* AU, GU, A, G, U */
06769      }
06770      ,{{      370,      370,      290,      310,      290} /* AU, GU, A, U, E */
06771      ,{      310,      310,      290,      250,      290} /* AU, GU, A, U, A */
06772      ,{      310,      310,      290,      310,      290} /* AU, GU, A, U, C */
06773      ,{      310,      310,      290,      250,      290} /* AU, GU, A, U, G */
06774      ,{      370,      370,      290,      250,      290} /* AU, GU, A, U, U */
06775      }
06776      }
06777      ,{{{      320,      320,      320,      320,      320} /* AU, GU, C, E, E */
06778      ,{      320,      320,      320,      320,      320} /* AU, GU, C, E, A */
06779      ,{      290,      280,      290,      280,      290} /* AU, GU, C, E, C */
06780      ,{      290,      280,      290,      280,      290} /* AU, GU, C, E, G */
06781      ,{      290,      280,      290,      280,      290} /* AU, GU, C, E, U */
06782      }
06783      ,{{      320,      320,      320,      320,      320} /* AU, GU, C, A, E */
06784      ,{      320,      320,      320,      320,      320} /* AU, GU, C, A, A */
06785      ,{      290,      280,      290,      280,      290} /* AU, GU, C, A, C */
06786      ,{      270,      200,      270,      200,      270} /* AU, GU, C, A, G */
06787      ,{      290,      280,      290,      280,      290} /* AU, GU, C, A, U */
06788      }
06789      ,{{{      290,      280,      290,      280,      290} /* AU, GU, C, C, E */
06790      ,{      290,      280,      290,      280,      290} /* AU, GU, C, C, A */
06791      ,{      290,      280,      290,      280,      290} /* AU, GU, C, C, C */
06792      ,{      290,      280,      290,      280,      290} /* AU, GU, C, C, G */
06793      ,{      290,      280,      290,      280,      290} /* AU, GU, C, C, U */
06794      }
06795      ,{{{      310,      280,      310,      280,      310} /* AU, GU, C, G, E */
06796      ,{      310,      240,      310,      240,      310} /* AU, GU, C, G, A */
06797      ,{      290,      280,      290,      280,      290} /* AU, GU, C, G, C */
06798      ,{      160,      150,      160,      150,      160} /* AU, GU, C, G, G */
06799      ,{      290,      280,      290,      280,      290} /* AU, GU, C, G, U */
06800      }
06801      ,{{{      290,      280,      290,      280,      290} /* AU, GU, C, U, E */
06802      ,{      290,      280,      290,      280,      290} /* AU, GU, C, U, A */
06803      ,{      290,      280,      290,      280,      290} /* AU, GU, C, U, C */
06804      ,{      290,      280,      290,      280,      290} /* AU, GU, C, U, G */
06805      ,{      290,      280,      290,      280,      290} /* AU, GU, C, U, U */
06806      }
06807      }
06808      ,{{{      330,      240,      330,      260,      330} /* AU, GU, G, E, E */
06809      ,{      330,      220,      330,      220,      330} /* AU, GU, G, E, A */
06810      ,{      290,      240,      290,      130,      290} /* AU, GU, G, E, C */
06811      ,{      290,      180,      290,      260,      290} /* AU, GU, G, E, G */
06812      ,{      290,      240,      290,      260,      290} /* AU, GU, G, E, U */
06813      }
06814      ,{{{      330,      220,      330,      180,      330} /* AU, GU, G, A, E */
06815      ,{      330,      220,      330,      170,      330} /* AU, GU, G, A, A */
06816      ,{      290,      180,      290,      130,      290} /* AU, GU, G, A, C */
06817      ,{      210,      100,      210,      180,      210} /* AU, GU, G, A, G */
06818      ,{      290,      180,      290,      130,      290} /* AU, GU, G, A, U */
06819      }
06820      ,{{{      290,      240,      290,      130,      290} /* AU, GU, G, C, E */
06821      ,{      290,      180,      290,      130,      290} /* AU, GU, G, C, A */
06822      ,{      290,      240,      290,      130,      290} /* AU, GU, G, C, C */
06823      ,{      290,      180,      290,      130,      290} /* AU, GU, G, C, G */
06824      ,{      290,      240,      290,      130,      290} /* AU, GU, G, C, U */
06825      }
06826      ,{{{      290,      180,      290,      260,      290} /* AU, GU, G, G, E */
06827      ,{      250,      140,      250,      220,      250} /* AU, GU, G, G, A */
06828      ,{      290,      180,      290,      130,      290} /* AU, GU, G, G, C */
06829      ,{      260,      180,      160,      260,      160} /* AU, GU, G, G, G */
06830      ,{      290,      180,      290,      130,      290} /* AU, GU, G, G, U */
06831      }
06832      ,{{{      290,      240,      290,      260,      290} /* AU, GU, G, U, E */
06833      ,{      290,      180,      290,      130,      290} /* AU, GU, G, U, A */
06834      ,{      290,      240,      290,      130,      290} /* AU, GU, G, U, C */
06835      ,{      290,      180,      290,      130,      290} /* AU, GU, G, U, G */
06836      ,{      290,      180,      290,      260,      290} /* AU, GU, G, U, U */
06837      }
06838      }
06839      ,{{{      320,      320,      320,      320,      290} /* AU, GU, U, E, E */
06840      ,{      320,      320,      320,      320,      290} /* AU, GU, U, E, A */
06841      ,{      290,      280,      290,      280,      200} /* AU, GU, U, E, C */
06842      ,{      290,      280,      290,      280,      200} /* AU, GU, U, E, G */
06843      ,{      290,      280,      290,      280,      200} /* AU, GU, U, E, U */
06844      }
06845      ,{{{      320,      320,      320,      320,      290} /* AU, GU, U, A, E */
06846      ,{      320,      320,      320,      320,      290} /* AU, GU, U, A, A */
06847      ,{      290,      280,      290,      280,      200} /* AU, GU, U, A, C */
06848      ,{      270,      200,      270,      200,      120} /* AU, GU, U, A, G */
06849      ,{      290,      280,      290,      280,      200} /* AU, GU, U, A, U */

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06850     }
06851     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, C, E */
06852     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, C, A */
06853     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, C, C */
06854     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, C, G */
06855     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, C, U */
06856     }
06857     ,{{      310,      280,      310,      280,      200} /* AU, GU, U, G, E */
06858     ,{{      310,      240,      310,      240,      160} /* AU, GU, U, G, A */
06859     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, G, C */
06860     ,{{      200,      150,      160,      150,      200} /* AU, GU, U, G, G */
06861     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, G, U */
06862     }
06863     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, U, E */
06864     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, U, A */
06865     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, U, C */
06866     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, U, G */
06867     ,{{      290,      280,      290,      280,      200} /* AU, GU, U, U, U */
06868     }
06869     }
06870     }
06871     ,{{{      350,      340,      350,      280,      350} /* AU, UG, E, E, E */
06872     ,{{      350,      310,      350,      280,      350} /* AU, UG, E, E, A */
06873     ,{{      280,      280,      260,      280,      260} /* AU, UG, E, E, C */
06874     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, E, G */
06875     ,{{      340,      340,      260,      280,      260} /* AU, UG, E, E, U */
06876     }
06877     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, A, E */
06878     ,{{      240,      240,      230,      220,      230} /* AU, UG, E, A, A */
06879     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, A, C */
06880     ,{{      180,      140,      180,      120,      180} /* AU, UG, E, A, G */
06881     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, A, U */
06882     }
06883     ,{{      280,      280,      260,      280,      260} /* AU, UG, E, C, E */
06884     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, C, A */
06885     ,{{      280,      280,      260,      280,      260} /* AU, UG, E, C, C */
06886     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, C, G */
06887     ,{{      280,      280,      260,      280,      260} /* AU, UG, E, C, U */
06888     }
06889     ,{{      350,      310,      350,      280,      350} /* AU, UG, E, G, E */
06890     ,{{      350,      310,      350,      280,      350} /* AU, UG, E, G, A */
06891     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, G, C */
06892     ,{{      230,      150,      130,      230,      170} /* AU, UG, E, G, G */
06893     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, G, U */
06894     }
06895     ,{{      340,      340,      260,      280,      260} /* AU, UG, E, U, E */
06896     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, U, A */
06897     ,{{      280,      280,      260,      280,      260} /* AU, UG, E, U, C */
06898     ,{{      280,      280,      260,      250,      260} /* AU, UG, E, U, G */
06899     ,{{      340,      340,      260,      250,      260} /* AU, UG, E, U, U */
06900     }
06901     }
06902     ,{{{      340,      340,      290,      280,      290} /* AU, UG, A, E, E */
06903     ,{{      310,      310,      290,      250,      290} /* AU, UG, A, E, A */
06904     ,{{      280,      280,      260,      280,      260} /* AU, UG, A, E, C */
06905     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, E, G */
06906     ,{{      340,      340,      260,      280,      260} /* AU, UG, A, E, U */
06907     }
06908     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, A, E */
06909     ,{{      240,      240,      230,      190,      230} /* AU, UG, A, A, A */
06910     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, A, C */
06911     ,{{      140,      140,      130,       90,      130} /* AU, UG, A, A, G */
06912     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, A, U */
06913     }
06914     ,{{      280,      280,      260,      280,      260} /* AU, UG, A, C, E */
06915     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, C, A */
06916     ,{{      280,      280,      260,      280,      260} /* AU, UG, A, C, C */
06917     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, C, G */
06918     ,{{      280,      280,      260,      280,      260} /* AU, UG, A, C, U */
06919     }
06920     ,{{      310,      310,      290,      250,      290} /* AU, UG, A, G, E */
06921     ,{{      310,      310,      290,      250,      290} /* AU, UG, A, G, A */
06922     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, G, C */
06923     ,{{      220,      150,      130,      220,      130} /* AU, UG, A, G, G */
06924     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, G, U */
06925     }
06926     ,{{      340,      340,      260,      280,      260} /* AU, UG, A, U, E */
06927     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, U, A */
06928     ,{{      280,      280,      260,      280,      260} /* AU, UG, A, U, C */
06929     ,{{      280,      280,      260,      220,      260} /* AU, UG, A, U, G */
06930     ,{{      340,      340,      260,      220,      260} /* AU, UG, A, U, U */
06931     }
06932     }
06933     ,{{{      350,      280,      350,      280,      350} /* AU, UG, C, E, E */
06934     ,{{      350,      280,      350,      280,      350} /* AU, UG, C, E, A */
06935     ,{{      260,      250,      260,      250,      260} /* AU, UG, C, E, C */
06936     ,{{      260,      250,      260,      250,      260} /* AU, UG, C, E, G */
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06937      , {      260,      250,      260,      250,      260} /* AU,UG,C,E,U */
06938      }
06939      , { {      260,      250,      260,      250,      260} /* AU,UG,C,A,E */
06940      , {      220,      220,      220,      220,      220} /* AU,UG,C,A,A */
06941      , {      260,      250,      260,      250,      260} /* AU,UG,C,A,C */
06942      , {      180,      120,      180,      120,      180} /* AU,UG,C,A,G */
06943      , {      260,      250,      260,      250,      260} /* AU,UG,C,A,U */
06944      }
06945      , { {      260,      250,      260,      250,      260} /* AU,UG,C,C,E */
06946      , {      260,      250,      260,      250,      260} /* AU,UG,C,C,A */
06947      , {      260,      250,      260,      250,      260} /* AU,UG,C,C,C */
06948      , {      260,      250,      260,      250,      260} /* AU,UG,C,C,G */
06949      , {      260,      250,      260,      250,      260} /* AU,UG,C,C,U */
06950      }
06951      , { {      350,      280,      350,      280,      350} /* AU,UG,C,G,E */
06952      , {      350,      280,      350,      280,      350} /* AU,UG,C,G,A */
06953      , {      260,      250,      260,      250,      260} /* AU,UG,C,G,C */
06954      , {      130,      120,      130,      120,      130} /* AU,UG,C,G,G */
06955      , {      260,      250,      260,      250,      260} /* AU,UG,C,G,U */
06956      }
06957      , { {      260,      250,      260,      250,      260} /* AU,UG,C,U,E */
06958      , {      260,      250,      260,      250,      260} /* AU,UG,C,U,A */
06959      , {      260,      250,      260,      250,      260} /* AU,UG,C,U,C */
06960      , {      260,      250,      260,      250,      260} /* AU,UG,C,U,G */
06961      , {      260,      250,      260,      250,      260} /* AU,UG,C,U,U */
06962      }
06963      }
06964      , { { {      290,      210,      290,      260,      290} /* AU,UG,G,E,E */
06965      , {      290,      180,      290,      260,      290} /* AU,UG,G,E,A */
06966      , {      260,      210,      260,      100,      260} /* AU,UG,G,E,C */
06967      , {      260,      150,      260,      230,      260} /* AU,UG,G,E,G */
06968      , {      260,      210,      260,      230,      260} /* AU,UG,G,E,U */
06969      }
06970      , { {      260,      150,      260,      100,      260} /* AU,UG,G,A,E */
06971      , {      230,      120,      230,      70,      230} /* AU,UG,G,A,A */
06972      , {      260,      150,      260,      100,      260} /* AU,UG,G,A,C */
06973      , {      130,      20,      130,      100,      130} /* AU,UG,G,A,G */
06974      , {      260,      150,      260,      100,      260} /* AU,UG,G,A,U */
06975      }
06976      , { {      260,      210,      260,      100,      260} /* AU,UG,G,C,E */
06977      , {      260,      150,      260,      100,      260} /* AU,UG,G,C,A */
06978      , {      260,      210,      260,      100,      260} /* AU,UG,G,C,C */
06979      , {      260,      150,      260,      100,      260} /* AU,UG,G,C,G */
06980      , {      260,      210,      260,      100,      260} /* AU,UG,G,C,U */
06981      }
06982      , { {      290,      180,      290,      260,      290} /* AU,UG,G,G,E */
06983      , {      290,      180,      290,      260,      290} /* AU,UG,G,G,A */
06984      , {      260,      150,      260,      100,      260} /* AU,UG,G,G,C */
06985      , {      230,      150,      130,      230,      130} /* AU,UG,G,G,G */
06986      , {      260,      150,      260,      100,      260} /* AU,UG,G,G,U */
06987      }
06988      , { {      260,      210,      260,      230,      260} /* AU,UG,G,U,E */
06989      , {      260,      150,      260,      100,      260} /* AU,UG,G,U,A */
06990      , {      260,      210,      260,      100,      260} /* AU,UG,G,U,C */
06991      , {      260,      150,      260,      100,      260} /* AU,UG,G,U,G */
06992      , {      260,      150,      260,      230,      260} /* AU,UG,G,U,U */
06993      }
06994      }
06995      , { { {      350,      280,      350,      280,      200} /* AU,UG,U,E,E */
06996      , {      350,      280,      350,      280,      200} /* AU,UG,U,E,A */
06997      , {      260,      250,      260,      250,      170} /* AU,UG,U,E,C */
06998      , {      260,      250,      260,      250,      170} /* AU,UG,U,E,G */
06999      , {      260,      250,      260,      250,      170} /* AU,UG,U,E,U */
07000      }
07001      , { {      260,      250,      260,      250,      190} /* AU,UG,U,A,E */
07002      , {      220,      220,      220,      220,      190} /* AU,UG,U,A,A */
07003      , {      260,      250,      260,      250,      170} /* AU,UG,U,A,C */
07004      , {      180,      120,      180,      120,      30} /* AU,UG,U,A,G */
07005      , {      260,      250,      260,      250,      170} /* AU,UG,U,A,U */
07006      }
07007      , { {      260,      250,      260,      250,      170} /* AU,UG,U,C,E */
07008      , {      260,      250,      260,      250,      170} /* AU,UG,U,C,A */
07009      , {      260,      250,      260,      250,      170} /* AU,UG,U,C,C */
07010      , {      260,      250,      260,      250,      170} /* AU,UG,U,C,G */
07011      , {      260,      250,      260,      250,      170} /* AU,UG,U,C,U */
07012      }
07013      , { {      350,      280,      350,      280,      200} /* AU,UG,U,G,E */
07014      , {      350,      280,      350,      280,      200} /* AU,UG,U,G,A */
07015      , {      260,      250,      260,      250,      170} /* AU,UG,U,G,C */
07016      , {      170,      120,      130,      120,      170} /* AU,UG,U,G,G */
07017      , {      260,      250,      260,      250,      170} /* AU,UG,U,G,U */
07018      }
07019      , { {      260,      250,      260,      250,      170} /* AU,UG,U,U,E */
07020      , {      260,      250,      260,      250,      170} /* AU,UG,U,U,A */
07021      , {      260,      250,      260,      250,      170} /* AU,UG,U,U,C */
07022      , {      260,      250,      260,      250,      170} /* AU,UG,U,U,G */
07023      , {      260,      250,      260,      250,      170} /* AU,UG,U,U,U */

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07024     }
07025     }
07026     }
07027 ,{{{    280,    280,    260,    260,    260} /* AU,AU,E,E,E */
07028 ,{      280,    280,    260,    250,    260} /* AU,AU,E,E,A */
07029 ,{      260,    260,    240,    260,    240} /* AU,AU,E,E,C */
07030 ,{      260,    260,    250,    240,    250} /* AU,AU,E,E,G */
07031 ,{      260,    260,    240,    260,    240} /* AU,AU,E,E,U */
07032     }
07033 ,{{     280,    280,    260,    250,    260} /* AU,AU,E,A,E */
07034 ,{      280,    280,    260,    250,    260} /* AU,AU,E,A,A */
07035 ,{      250,    250,    240,    230,    240} /* AU,AU,E,A,C */
07036 ,{      190,    150,    190,    130,    190} /* AU,AU,E,A,G */
07037 ,{      250,    250,    240,    230,    240} /* AU,AU,E,A,U */
07038     }
07039 ,{{     260,    260,    250,    260,    250} /* AU,AU,E,C,E */
07040 ,{      260,    260,    250,    240,    250} /* AU,AU,E,C,A */
07041 ,{      260,    260,    240,    260,    240} /* AU,AU,E,C,C */
07042 ,{      260,    260,    250,    240,    250} /* AU,AU,E,C,G */
07043 ,{      260,    260,    240,    260,    240} /* AU,AU,E,C,U */
07044     }
07045 ,{{     260,    250,    260,    230,    260} /* AU,AU,E,G,E */
07046 ,{      260,    220,    260,    200,    260} /* AU,AU,E,G,A */
07047 ,{      250,    250,    240,    230,    240} /* AU,AU,E,G,C */
07048 ,{      190,    110,    90,    190,    120} /* AU,AU,E,G,G */
07049 ,{      250,    250,    240,    230,    240} /* AU,AU,E,G,U */
07050     }
07051 ,{{     260,    260,    250,    260,    250} /* AU,AU,E,U,E */
07052 ,{      260,    260,    250,    240,    250} /* AU,AU,E,U,A */
07053 ,{      260,    260,    240,    260,    240} /* AU,AU,E,U,C */
07054 ,{      260,    260,    250,    240,    250} /* AU,AU,E,U,G */
07055 ,{      230,    230,    150,    140,    150} /* AU,AU,E,U,U */
07056     }
07057     }
07058 ,{{{    280,    280,    260,    260,    260} /* AU,AU,A,E,E */
07059 ,{      280,    280,    260,    220,    260} /* AU,AU,A,E,A */
07060 ,{      260,    260,    240,    260,    240} /* AU,AU,A,E,C */
07061 ,{      260,    260,    250,    210,    250} /* AU,AU,A,E,G */
07062 ,{      260,    260,    240,    260,    240} /* AU,AU,A,E,U */
07063     }
07064 ,{{{    280,    280,    260,    220,    260} /* AU,AU,A,A,E */
07065 ,{      280,    280,    260,    220,    260} /* AU,AU,A,A,A */
07066 ,{      250,    250,    240,    200,    240} /* AU,AU,A,A,C */
07067 ,{      150,    150,    140,    100,    140} /* AU,AU,A,A,G */
07068 ,{      250,    250,    240,    200,    240} /* AU,AU,A,A,U */
07069     }
07070 ,{{{    260,    260,    250,    260,    250} /* AU,AU,A,C,E */
07071 ,{      260,    260,    250,    210,    250} /* AU,AU,A,C,A */
07072 ,{      260,    260,    240,    260,    240} /* AU,AU,A,C,C */
07073 ,{      260,    260,    250,    210,    250} /* AU,AU,A,C,G */
07074 ,{      260,    260,    240,    260,    240} /* AU,AU,A,C,U */
07075     }
07076 ,{{{    250,    250,    240,    200,    240} /* AU,AU,A,G,E */
07077 ,{      220,    220,    210,    170,    210} /* AU,AU,A,G,A */
07078 ,{      250,    250,    240,    200,    240} /* AU,AU,A,G,C */
07079 ,{      180,    100,    90,    180,    90} /* AU,AU,A,G,G */
07080 ,{      250,    250,    240,    200,    240} /* AU,AU,A,G,U */
07081     }
07082 ,{{{    260,    260,    250,    260,    250} /* AU,AU,A,U,E */
07083 ,{      260,    260,    250,    210,    250} /* AU,AU,A,U,A */
07084 ,{      260,    260,    240,    260,    240} /* AU,AU,A,U,C */
07085 ,{      260,    260,    250,    210,    250} /* AU,AU,A,U,G */
07086 ,{      230,    230,    150,    110,    150} /* AU,AU,A,U,U */
07087     }
07088     }
07089 ,{{{    260,    250,    260,    250,    260} /* AU,AU,C,E,E */
07090 ,{      260,    250,    260,    250,    260} /* AU,AU,C,E,A */
07091 ,{      240,    230,    240,    230,    240} /* AU,AU,C,E,C */
07092 ,{      240,    240,    240,    240,    240} /* AU,AU,C,E,G */
07093 ,{      240,    230,    240,    230,    240} /* AU,AU,C,E,U */
07094     }
07095 ,{{{    260,    250,    260,    250,    260} /* AU,AU,C,A,E */
07096 ,{      260,    250,    260,    250,    260} /* AU,AU,C,A,A */
07097 ,{      230,    230,    230,    230,    230} /* AU,AU,C,A,C */
07098 ,{      190,    130,    190,    130,    190} /* AU,AU,C,A,G */
07099 ,{      230,    230,    230,    230,    230} /* AU,AU,C,A,U */
07100     }
07101 ,{{{    240,    240,    240,    240,    240} /* AU,AU,C,C,E */
07102 ,{      240,    240,    240,    240,    240} /* AU,AU,C,C,A */
07103 ,{      240,    230,    240,    230,    240} /* AU,AU,C,C,C */
07104 ,{      240,    240,    240,    240,    240} /* AU,AU,C,C,G */
07105 ,{      240,    230,    240,    230,    240} /* AU,AU,C,C,U */
07106     }
07107 ,{{{    260,    230,    260,    230,    260} /* AU,AU,C,G,E */
07108 ,{      260,    200,    260,    200,    260} /* AU,AU,C,G,A */
07109 ,{      230,    230,    230,    230,    230} /* AU,AU,C,G,C */
07110 ,{      80,    80,    80,    80,    80} /* AU,AU,C,G,G */
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07111 ,{ 230, 230, 230, 230, 230} /* AU,AU,C,G,U */
07112 }
07113 ,{{ 240, 240, 240, 240, 240} /* AU,AU,C,U,E */
07114 ,{ 240, 240, 240, 240, 240} /* AU,AU,C,U,A */
07115 ,{ 240, 230, 240, 230, 240} /* AU,AU,C,U,C */
07116 ,{ 240, 240, 240, 240, 240} /* AU,AU,C,U,G */
07117 ,{ 150, 140, 150, 140, 150} /* AU,AU,C,U,U */
07118 }
07119 }
07120 ,{{{ 260, 190, 260, 190, 260} /* AU,AU,G,E,E */
07121 ,{ 260, 150, 260, 180, 260} /* AU,AU,G,E,A */
07122 ,{ 240, 190, 240, 80, 240} /* AU,AU,G,E,C */
07123 ,{ 250, 140, 250, 190, 250} /* AU,AU,G,E,G */
07124 ,{ 240, 190, 240, 120, 240} /* AU,AU,G,E,U */
07125 }
07126 ,{{ 260, 150, 260, 110, 260} /* AU,AU,G,A,E */
07127 ,{ 260, 150, 260, 100, 260} /* AU,AU,G,A,A */
07128 ,{ 240, 130, 240, 80, 240} /* AU,AU,G,A,C */
07129 ,{ 140, 30, 140, 110, 140} /* AU,AU,G,A,G */
07130 ,{ 240, 130, 240, 80, 240} /* AU,AU,G,A,U */
07131 }
07132 ,{{ 250, 190, 250, 90, 250} /* AU,AU,G,C,E */
07133 ,{ 250, 140, 250, 90, 250} /* AU,AU,G,C,A */
07134 ,{ 240, 190, 240, 80, 240} /* AU,AU,G,C,C */
07135 ,{ 250, 140, 250, 90, 250} /* AU,AU,G,C,G */
07136 ,{ 240, 190, 240, 80, 240} /* AU,AU,G,C,U */
07137 }
07138 ,{{ 240, 130, 240, 190, 240} /* AU,AU,G,G,E */
07139 ,{ 210, 100, 210, 180, 210} /* AU,AU,G,G,A */
07140 ,{ 240, 130, 240, 80, 240} /* AU,AU,G,G,C */
07141 ,{ 190, 110, 90, 190, 90} /* AU,AU,G,G,G */
07142 ,{ 240, 130, 240, 80, 240} /* AU,AU,G,G,U */
07143 }
07144 ,{{ 250, 190, 250, 120, 250} /* AU,AU,G,U,E */
07145 ,{ 250, 140, 250, 90, 250} /* AU,AU,G,U,A */
07146 ,{ 240, 190, 240, 80, 240} /* AU,AU,G,U,C */
07147 ,{ 250, 140, 250, 90, 250} /* AU,AU,G,U,G */
07148 ,{ 150, 40, 150, 120, 150} /* AU,AU,G,U,U */
07149 }
07150 }
07151 ,{{{ 260, 250, 260, 250, 230} /* AU,AU,U,E,E */
07152 ,{ 260, 250, 260, 250, 230} /* AU,AU,U,E,A */
07153 ,{ 240, 230, 240, 230, 150} /* AU,AU,U,E,C */
07154 ,{ 240, 240, 240, 240, 150} /* AU,AU,U,E,G */
07155 ,{ 240, 230, 240, 230, 150} /* AU,AU,U,E,U */
07156 }
07157 ,{{ 260, 250, 260, 250, 230} /* AU,AU,U,A,E */
07158 ,{ 260, 250, 260, 250, 230} /* AU,AU,U,A,A */
07159 ,{ 230, 230, 230, 230, 140} /* AU,AU,U,A,C */
07160 ,{ 190, 130, 190, 130, 40} /* AU,AU,U,A,G */
07161 ,{ 230, 230, 230, 230, 140} /* AU,AU,U,A,U */
07162 }
07163 ,{{ 240, 240, 240, 240, 150} /* AU,AU,U,C,E */
07164 ,{ 240, 240, 240, 240, 150} /* AU,AU,U,C,A */
07165 ,{ 240, 230, 240, 230, 150} /* AU,AU,U,C,C */
07166 ,{ 240, 240, 240, 240, 150} /* AU,AU,U,C,G */
07167 ,{ 240, 230, 240, 230, 150} /* AU,AU,U,C,U */
07168 }
07169 ,{{ 260, 230, 260, 230, 140} /* AU,AU,U,G,E */
07170 ,{ 260, 200, 260, 200, 110} /* AU,AU,U,G,A */
07171 ,{ 230, 230, 230, 230, 140} /* AU,AU,U,G,C */
07172 ,{ 120, 80, 80, 80, 120} /* AU,AU,U,G,G */
07173 ,{ 230, 230, 230, 230, 140} /* AU,AU,U,G,U */
07174 }
07175 ,{{{ 240, 240, 240, 240, 150} /* AU,AU,U,U,E */
07176 ,{ 240, 240, 240, 240, 150} /* AU,AU,U,U,A */
07177 ,{ 240, 230, 240, 230, 150} /* AU,AU,U,U,C */
07178 ,{ 240, 240, 240, 240, 150} /* AU,AU,U,U,G */
07179 ,{ 150, 140, 150, 140, 60} /* AU,AU,U,U,U */
07180 }
07181 }
07182 }
07183 ,{{{ 280, 280, 260, 280, 260} /* AU,UA,E,E,E */
07184 ,{ 280, 280, 260, 250, 260} /* AU,UA,E,E,A */
07185 ,{ 280, 280, 260, 280, 260} /* AU,UA,E,E,C */
07186 ,{ 280, 280, 260, 250, 260} /* AU,UA,E,E,G */
07187 ,{ 280, 280, 260, 280, 260} /* AU,UA,E,E,U */
07188 }
07189 ,{{ 280, 280, 260, 250, 260} /* AU,UA,E,A,E */
07190 ,{ 280, 280, 260, 250, 260} /* AU,UA,E,A,A */
07191 ,{ 230, 230, 220, 210, 220} /* AU,UA,E,A,C */
07192 ,{ 210, 170, 210, 150, 210} /* AU,UA,E,A,G */
07193 ,{ 230, 230, 220, 210, 220} /* AU,UA,E,A,U */
07194 }
07195 ,{{ 280, 280, 260, 280, 260} /* AU,UA,E,C,E */
07196 ,{ 280, 280, 260, 250, 260} /* AU,UA,E,C,A */
07197 ,{ 280, 280, 260, 280, 260} /* AU,UA,E,C,C */

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07198 , { 280, 280, 260, 250, 260} /* AU,UA,E,C,G */
07199 , { 280, 280, 260, 280, 260} /* AU,UA,E,C,U */
07200 }
07201 , {{ 230, 230, 220, 210, 220} /* AU,UA,E,G,E */
07202 , { 220, 180, 220, 160, 220} /* AU,UA,E,G,A */
07203 , { 230, 230, 220, 210, 220} /* AU,UA,E,G,C */
07204 , { 210, 130, 110, 210, 140} /* AU,UA,E,G,G */
07205 , { 230, 230, 220, 210, 220} /* AU,UA,E,G,U */
07206 }
07207 , {{ 280, 280, 260, 250, 260} /* AU,UA,E,U,E */
07208 , { 280, 280, 260, 250, 260} /* AU,UA,E,U,A */
07209 , { 250, 250, 230, 250, 230} /* AU,UA,E,U,C */
07210 , { 280, 280, 260, 250, 260} /* AU,UA,E,U,G */
07211 , { 250, 250, 180, 170, 180} /* AU,UA,E,U,U */
07212 }
07213 }
07214 , {{{ 280, 280, 260, 280, 260} /* AU,UA,A,E,E */
07215 , { 280, 280, 260, 220, 260} /* AU,UA,A,E,A */
07216 , { 280, 280, 260, 280, 260} /* AU,UA,A,E,C */
07217 , { 280, 280, 260, 220, 260} /* AU,UA,A,E,G */
07218 , { 280, 280, 260, 280, 260} /* AU,UA,A,E,U */
07219 }
07220 , {{ 280, 280, 260, 220, 260} /* AU,UA,A,A,E */
07221 , { 280, 280, 260, 220, 260} /* AU,UA,A,A,A */
07222 , { 230, 230, 220, 180, 220} /* AU,UA,A,A,C */
07223 , { 170, 170, 160, 120, 160} /* AU,UA,A,A,G */
07224 , { 230, 230, 220, 180, 220} /* AU,UA,A,A,U */
07225 }
07226 , {{ 280, 280, 260, 280, 260} /* AU,UA,A,C,E */
07227 , { 280, 280, 260, 220, 260} /* AU,UA,A,C,A */
07228 , { 280, 280, 260, 280, 260} /* AU,UA,A,C,C */
07229 , { 280, 280, 260, 220, 260} /* AU,UA,A,C,G */
07230 , { 280, 280, 260, 280, 260} /* AU,UA,A,C,U */
07231 }
07232 , {{ 230, 230, 220, 200, 220} /* AU,UA,A,G,E */
07233 , { 180, 180, 170, 130, 170} /* AU,UA,A,G,A */
07234 , { 230, 230, 220, 180, 220} /* AU,UA,A,G,C */
07235 , { 200, 120, 110, 200, 110} /* AU,UA,A,G,G */
07236 , { 230, 230, 220, 180, 220} /* AU,UA,A,G,U */
07237 }
07238 , {{ 280, 280, 260, 250, 260} /* AU,UA,A,U,E */
07239 , { 280, 280, 260, 220, 260} /* AU,UA,A,U,A */
07240 , { 250, 250, 230, 250, 230} /* AU,UA,A,U,C */
07241 , { 280, 280, 260, 220, 260} /* AU,UA,A,U,G */
07242 , { 250, 250, 180, 140, 180} /* AU,UA,A,U,U */
07243 }
07244 }
07245 , {{{ 260, 250, 260, 250, 260} /* AU,UA,C,E,E */
07246 , { 260, 250, 260, 250, 260} /* AU,UA,C,E,A */
07247 , { 260, 250, 260, 250, 260} /* AU,UA,C,E,C */
07248 , { 260, 250, 260, 250, 260} /* AU,UA,C,E,G */
07249 , { 260, 250, 260, 250, 260} /* AU,UA,C,E,U */
07250 }
07251 , {{ 260, 250, 260, 250, 260} /* AU,UA,C,A,E */
07252 , { 260, 250, 260, 250, 260} /* AU,UA,C,A,A */
07253 , { 210, 210, 210, 210, 210} /* AU,UA,C,A,C */
07254 , { 210, 150, 210, 150, 210} /* AU,UA,C,A,G */
07255 , { 210, 210, 210, 210, 210} /* AU,UA,C,A,U */
07256 }
07257 , {{ 260, 250, 260, 250, 260} /* AU,UA,C,C,E */
07258 , { 260, 250, 260, 250, 260} /* AU,UA,C,C,A */
07259 , { 260, 250, 260, 250, 260} /* AU,UA,C,C,C */
07260 , { 260, 250, 260, 250, 260} /* AU,UA,C,C,G */
07261 , { 260, 250, 260, 250, 260} /* AU,UA,C,C,U */
07262 }
07263 , {{ 220, 210, 220, 210, 220} /* AU,UA,C,G,E */
07264 , { 220, 160, 220, 160, 220} /* AU,UA,C,G,A */
07265 , { 210, 210, 210, 210, 210} /* AU,UA,C,G,C */
07266 , { 100, 100, 100, 100, 100} /* AU,UA,C,G,G */
07267 , { 210, 210, 210, 210, 210} /* AU,UA,C,G,U */
07268 }
07269 , {{ 260, 250, 260, 250, 260} /* AU,UA,C,U,E */
07270 , { 260, 250, 260, 250, 260} /* AU,UA,C,U,A */
07271 , { 230, 220, 230, 220, 230} /* AU,UA,C,U,C */
07272 , { 260, 250, 260, 250, 260} /* AU,UA,C,U,G */
07273 , { 170, 170, 170, 170, 170} /* AU,UA,C,U,U */
07274 }
07275 }
07276 , {{{ 260, 210, 260, 210, 260} /* AU,UA,G,E,E */
07277 , { 260, 150, 260, 140, 260} /* AU,UA,G,E,A */
07278 , { 260, 210, 260, 100, 260} /* AU,UA,G,E,C */
07279 , { 260, 150, 260, 210, 260} /* AU,UA,G,E,G */
07280 , { 260, 210, 260, 150, 260} /* AU,UA,G,E,U */
07281 }
07282 , {{ 260, 150, 260, 130, 260} /* AU,UA,G,A,E */
07283 , { 260, 150, 260, 100, 260} /* AU,UA,G,A,A */
07284 , { 220, 110, 220, 60, 220} /* AU,UA,G,A,C */
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```

07285      , {      160,      50,      160,      130,      160} /* AU,UA,G,A,G */
07286      , {      220,      110,      220,      60,      220} /* AU,UA,G,A,U */
07287      }
07288      , {{      260,      210,      260,      100,      260} /* AU,UA,G,C,E */
07289      , {      260,      150,      260,      100,      260} /* AU,UA,G,C,A */
07290      , {      260,      210,      260,      100,      260} /* AU,UA,G,C,C */
07291      , {      260,      150,      260,      100,      260} /* AU,UA,G,C,G */
07292      , {      260,      210,      260,      100,      260} /* AU,UA,G,C,U */
07293      }
07294      , {{      220,      130,      220,      210,      220} /* AU,UA,G,G,E */
07295      , {      170,      60,      170,      140,      170} /* AU,UA,G,G,A */
07296      , {      220,      110,      220,      60,      220} /* AU,UA,G,G,C */
07297      , {      210,      130,      110,      210,      110} /* AU,UA,G,G,G */
07298      , {      220,      110,      220,      60,      220} /* AU,UA,G,G,U */
07299      }
07300      , {{      260,      180,      260,      150,      260} /* AU,UA,G,U,E */
07301      , {      260,      150,      260,      100,      260} /* AU,UA,G,U,A */
07302      , {      230,      180,      230,      70,      230} /* AU,UA,G,U,C */
07303      , {      260,      150,      260,      100,      260} /* AU,UA,G,U,G */
07304      , {      180,      70,      180,      150,      180} /* AU,UA,G,U,U */
07305      }
07306      }
07307      , {{{      260,      250,      260,      250,      230} /* AU,UA,U,E,E */
07308      , {      260,      250,      260,      250,      230} /* AU,UA,U,E,A */
07309      , {      260,      250,      260,      250,      170} /* AU,UA,U,E,C */
07310      , {      260,      250,      260,      250,      170} /* AU,UA,U,E,G */
07311      , {      260,      250,      260,      250,      170} /* AU,UA,U,E,U */
07312      }
07313      , {{      260,      250,      260,      250,      230} /* AU,UA,U,A,E */
07314      , {      260,      250,      260,      250,      230} /* AU,UA,U,A,A */
07315      , {      210,      210,      210,      210,      120} /* AU,UA,U,A,C */
07316      , {      210,      150,      210,      150,      60} /* AU,UA,U,A,G */
07317      , {      210,      210,      210,      210,      120} /* AU,UA,U,A,U */
07318      }
07319      , {{      260,      250,      260,      250,      170} /* AU,UA,U,C,E */
07320      , {      260,      250,      260,      250,      170} /* AU,UA,U,C,A */
07321      , {      260,      250,      260,      250,      170} /* AU,UA,U,C,C */
07322      , {      260,      250,      260,      250,      170} /* AU,UA,U,C,G */
07323      , {      260,      250,      260,      250,      170} /* AU,UA,U,C,U */
07324      }
07325      , {{      220,      210,      220,      210,      140} /* AU,UA,U,G,E */
07326      , {      220,      160,      220,      160,      70} /* AU,UA,U,G,A */
07327      , {      210,      210,      210,      210,      120} /* AU,UA,U,G,C */
07328      , {      140,      100,      100,      100,      140} /* AU,UA,U,G,G */
07329      , {      210,      210,      210,      210,      120} /* AU,UA,U,G,U */
07330      }
07331      , {{      260,      250,      260,      250,      170} /* AU,UA,U,U,E */
07332      , {      260,      250,      260,      250,      170} /* AU,UA,U,U,A */
07333      , {      230,      220,      230,      220,      140} /* AU,UA,U,U,C */
07334      , {      260,      250,      260,      250,      170} /* AU,UA,U,U,G */
07335      , {      170,      170,      170,      170,      80} /* AU,UA,U,U,U */
07336      }
07337      }
07338      }
07339      , {{{      370,      370,      350,      320,      350} /* AU,NN,E,E,E */
07340      , {      350,      340,      350,      320,      350} /* AU,NN,E,E,A */
07341      , {      310,      310,      290,      310,      290} /* AU,NN,E,E,C */
07342      , {      310,      310,      290,      280,      290} /* AU,NN,E,E,G */
07343      , {      370,      370,      290,      310,      290} /* AU,NN,E,E,U */
07344      }
07345      , {{      340,      340,      330,      320,      330} /* AU,NN,E,A,E */
07346      , {      340,      340,      330,      320,      330} /* AU,NN,E,A,A */
07347      , {      310,      310,      290,      280,      290} /* AU,NN,E,A,C */
07348      , {      270,      230,      270,      200,      270} /* AU,NN,E,A,G */
07349      , {      310,      310,      290,      280,      290} /* AU,NN,E,A,U */
07350      }
07351      , {{      310,      310,      290,      310,      290} /* AU,NN,E,C,E */
07352      , {      310,      310,      290,      280,      290} /* AU,NN,E,C,A */
07353      , {      310,      310,      290,      310,      290} /* AU,NN,E,C,C */
07354      , {      310,      310,      290,      280,      290} /* AU,NN,E,C,G */
07355      , {      310,      310,      290,      310,      290} /* AU,NN,E,C,U */
07356      }
07357      , {{      350,      310,      350,      280,      350} /* AU,NN,E,G,E */
07358      , {      350,      310,      350,      280,      350} /* AU,NN,E,G,A */
07359      , {      310,      310,      290,      280,      290} /* AU,NN,E,G,C */
07360      , {      260,      180,      160,      260,      200} /* AU,NN,E,G,G */
07361      , {      310,      310,      290,      280,      290} /* AU,NN,E,G,U */
07362      }
07363      , {{      370,      370,      290,      310,      290} /* AU,NN,E,U,E */
07364      , {      310,      310,      290,      280,      290} /* AU,NN,E,U,A */
07365      , {      310,      310,      290,      310,      290} /* AU,NN,E,U,C */
07366      , {      310,      310,      290,      280,      290} /* AU,NN,E,U,G */
07367      , {      370,      370,      290,      280,      290} /* AU,NN,E,U,U */
07368      }
07369      }
07370      , {{{      370,      370,      330,      310,      330} /* AU,NN,A,E,E */
07371      , {      340,      340,      330,      290,      330} /* AU,NN,A,E,A */

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07372 , { 310, 310, 290, 310, 290} /* AU, NN, A, E, C */
07373 , { 310, 310, 290, 250, 290} /* AU, NN, A, E, G */
07374 , { 370, 370, 290, 310, 290} /* AU, NN, A, E, U */
07375 }
07376 , { { 340, 340, 330, 290, 330} /* AU, NN, A, A, E */
07377 , { 340, 340, 330, 290, 330} /* AU, NN, A, A, A */
07378 , { 310, 310, 290, 250, 290} /* AU, NN, A, A, C */
07379 , { 230, 230, 210, 170, 210} /* AU, NN, A, A, G */
07380 , { 310, 310, 290, 250, 290} /* AU, NN, A, A, U */
07381 }
07382 , { { 310, 310, 290, 310, 290} /* AU, NN, A, C, E */
07383 , { 310, 310, 290, 250, 290} /* AU, NN, A, C, A */
07384 , { 310, 310, 290, 310, 290} /* AU, NN, A, C, C */
07385 , { 310, 310, 290, 250, 290} /* AU, NN, A, C, G */
07386 , { 310, 310, 290, 310, 290} /* AU, NN, A, C, U */
07387 }
07388 , { { 310, 310, 290, 250, 290} /* AU, NN, A, G, E */
07389 , { 310, 310, 290, 250, 290} /* AU, NN, A, G, A */
07390 , { 310, 310, 290, 250, 290} /* AU, NN, A, G, C */
07391 , { 250, 180, 160, 250, 160} /* AU, NN, A, G, G */
07392 , { 310, 310, 290, 250, 290} /* AU, NN, A, G, U */
07393 }
07394 , { { 370, 370, 290, 310, 290} /* AU, NN, A, U, E */
07395 , { 310, 310, 290, 250, 290} /* AU, NN, A, U, A */
07396 , { 310, 310, 290, 310, 290} /* AU, NN, A, U, C */
07397 , { 310, 310, 290, 250, 290} /* AU, NN, A, U, G */
07398 , { 370, 370, 290, 250, 290} /* AU, NN, A, U, U */
07399 }
07400 }
07401 , { { { 350, 320, 350, 320, 350} /* AU, NN, C, E, E */
07402 , { 350, 320, 350, 320, 350} /* AU, NN, C, E, A */
07403 , { 290, 280, 290, 280, 290} /* AU, NN, C, E, C */
07404 , { 290, 280, 290, 280, 290} /* AU, NN, C, E, G */
07405 , { 290, 280, 290, 280, 290} /* AU, NN, C, E, U */
07406 }
07407 , { { 320, 320, 320, 320, 320} /* AU, NN, C, A, E */
07408 , { 320, 320, 320, 320, 320} /* AU, NN, C, A, A */
07409 , { 290, 280, 290, 280, 290} /* AU, NN, C, A, C */
07410 , { 270, 200, 270, 200, 270} /* AU, NN, C, A, G */
07411 , { 290, 280, 290, 280, 290} /* AU, NN, C, A, U */
07412 }
07413 , { { 290, 280, 290, 280, 290} /* AU, NN, C, C, E */
07414 , { 290, 280, 290, 280, 290} /* AU, NN, C, C, A */
07415 , { 290, 280, 290, 280, 290} /* AU, NN, C, C, C */
07416 , { 290, 280, 290, 280, 290} /* AU, NN, C, C, G */
07417 , { 290, 280, 290, 280, 290} /* AU, NN, C, C, U */
07418 }
07419 , { { 350, 280, 350, 280, 350} /* AU, NN, C, G, E */
07420 , { 350, 280, 350, 280, 350} /* AU, NN, C, G, A */
07421 , { 290, 280, 290, 280, 290} /* AU, NN, C, G, C */
07422 , { 160, 150, 160, 150, 160} /* AU, NN, C, G, G */
07423 , { 290, 280, 290, 280, 290} /* AU, NN, C, G, U */
07424 }
07425 , { { 290, 280, 290, 280, 290} /* AU, NN, C, U, E */
07426 , { 290, 280, 290, 280, 290} /* AU, NN, C, U, A */
07427 , { 290, 280, 290, 280, 290} /* AU, NN, C, U, C */
07428 , { 290, 280, 290, 280, 290} /* AU, NN, C, U, G */
07429 , { 290, 280, 290, 280, 290} /* AU, NN, C, U, U */
07430 }
07431 }
07432 , { { { 330, 240, 330, 260, 330} /* AU, NN, G, E, E */
07433 , { 330, 220, 330, 260, 330} /* AU, NN, G, E, A */
07434 , { 290, 240, 290, 130, 290} /* AU, NN, G, E, C */
07435 , { 290, 180, 290, 260, 290} /* AU, NN, G, E, G */
07436 , { 290, 240, 290, 260, 290} /* AU, NN, G, E, U */
07437 }
07438 , { { 330, 220, 330, 180, 330} /* AU, NN, G, A, E */
07439 , { 330, 220, 330, 170, 330} /* AU, NN, G, A, A */
07440 , { 290, 180, 290, 130, 290} /* AU, NN, G, A, C */
07441 , { 210, 100, 210, 180, 210} /* AU, NN, G, A, G */
07442 , { 290, 180, 290, 130, 290} /* AU, NN, G, A, U */
07443 }
07444 , { { 290, 240, 290, 130, 290} /* AU, NN, G, C, E */
07445 , { 290, 180, 290, 130, 290} /* AU, NN, G, C, A */
07446 , { 290, 240, 290, 130, 290} /* AU, NN, G, C, C */
07447 , { 290, 180, 290, 130, 290} /* AU, NN, G, C, G */
07448 , { 290, 240, 290, 130, 290} /* AU, NN, G, C, U */
07449 }
07450 , { { 290, 180, 290, 260, 290} /* AU, NN, G, G, E */
07451 , { 290, 180, 290, 260, 290} /* AU, NN, G, G, A */
07452 , { 290, 180, 290, 130, 290} /* AU, NN, G, G, C */
07453 , { 260, 180, 160, 260, 160} /* AU, NN, G, G, G */
07454 , { 290, 180, 290, 130, 290} /* AU, NN, G, G, U */
07455 }
07456 , { { 290, 240, 290, 260, 290} /* AU, NN, G, U, E */
07457 , { 290, 180, 290, 130, 290} /* AU, NN, G, U, A */
07458 , { 290, 240, 290, 130, 290} /* AU, NN, G, U, C */
```

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07459      , {      290,      180,      290,      130,      290} /* AU, NN, G, U, G */
07460      , {      290,      180,      290,      260,      290} /* AU, NN, G, U, U */
07461      }
07462  }
07463  , { { {      350,      320,      350,      320,      290} /* AU, NN, U, E, E */
07464      , {      350,      320,      350,      320,      290} /* AU, NN, U, E, A */
07465      , {      290,      280,      290,      280,      200} /* AU, NN, U, E, C */
07466      , {      290,      280,      290,      280,      200} /* AU, NN, U, E, G */
07467      , {      290,      280,      290,      280,      200} /* AU, NN, U, E, U */
07468      }
07469  , { {      320,      320,      320,      320,      290} /* AU, NN, U, A, E */
07470      , {      320,      320,      320,      320,      290} /* AU, NN, U, A, A */
07471      , {      290,      280,      290,      280,      200} /* AU, NN, U, A, C */
07472      , {      270,      200,      270,      200,      120} /* AU, NN, U, A, G */
07473      , {      290,      280,      290,      280,      200} /* AU, NN, U, A, U */
07474      }
07475  , { {      290,      280,      290,      280,      200} /* AU, NN, U, C, E */
07476      , {      290,      280,      290,      280,      200} /* AU, NN, U, C, A */
07477      , {      290,      280,      290,      280,      200} /* AU, NN, U, C, C */
07478      , {      290,      280,      290,      280,      200} /* AU, NN, U, C, G */
07479      , {      290,      280,      290,      280,      200} /* AU, NN, U, C, U */
07480      }
07481  , { {      350,      280,      350,      280,      200} /* AU, NN, U, G, E */
07482      , {      350,      280,      350,      280,      200} /* AU, NN, U, G, A */
07483      , {      290,      280,      290,      280,      200} /* AU, NN, U, G, C */
07484      , {      200,      150,      160,      150,      200} /* AU, NN, U, G, G */
07485      , {      290,      280,      290,      280,      200} /* AU, NN, U, G, U */
07486      }
07487  , { {      290,      280,      290,      280,      200} /* AU, NN, U, U, E */
07488      , {      290,      280,      290,      280,      200} /* AU, NN, U, U, A */
07489      , {      290,      280,      290,      280,      200} /* AU, NN, U, U, C */
07490      , {      290,      280,      290,      280,      200} /* AU, NN, U, U, G */
07491      , {      290,      280,      290,      280,      200} /* AU, NN, U, U, U */
07492      }
07493  }
07494  }
07495  }
07496  , { { { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, E, E */
07497      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, E, A */
07498      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, E, C */
07499      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, E, G */
07500      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, E, U */
07501      }
07502  , { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, A, E */
07503      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, A, A */
07504      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, A, C */
07505      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, A, G */
07506      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, A, U */
07507      }
07508  , { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, C, E */
07509      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, C, A */
07510      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, C, C */
07511      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, C, G */
07512      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, C, U */
07513      }
07514  , { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, G, E */
07515      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, G, A */
07516      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, G, C */
07517      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, G, G */
07518      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, G, U */
07519      }
07520  , { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, U, E */
07521      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, U, A */
07522      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, U, C */
07523      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, U, G */
07524      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, E, U, U */
07525      }
07526  }
07527  , { { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, E, E */
07528      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, E, A */
07529      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, E, C */
07530      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, E, G */
07531      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, E, U */
07532      }
07533  , { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, A, E */
07534      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, A, A */
07535      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, A, C */
07536      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, A, G */
07537      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, A, U */
07538      }
07539  , { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, C, E */
07540      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, C, A */
07541      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, C, C */
07542      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, C, G */
07543      , {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, C, U */
07544      }
07545  , { {      INF,      INF,      INF,      INF,      INF} /* UA, NP, A, G, E */

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07546 , { INF, INF, INF, INF, INF} /* UA,NP,A,G,A */
07547 , { INF, INF, INF, INF, INF} /* UA,NP,A,G,C */
07548 , { INF, INF, INF, INF, INF} /* UA,NP,A,G,G */
07549 , { INF, INF, INF, INF, INF} /* UA,NP,A,G,U */
07550 }
07551 , { { INF, INF, INF, INF, INF} /* UA,NP,A,U,E */
07552 , { INF, INF, INF, INF, INF} /* UA,NP,A,U,A */
07553 , { INF, INF, INF, INF, INF} /* UA,NP,A,U,C */
07554 , { INF, INF, INF, INF, INF} /* UA,NP,A,U,G */
07555 , { INF, INF, INF, INF, INF} /* UA,NP,A,U,U */
07556 }
07557 }
07558 , { { { INF, INF, INF, INF, INF} /* UA,NP,C,E,E */
07559 , { INF, INF, INF, INF, INF} /* UA,NP,C,E,A */
07560 , { INF, INF, INF, INF, INF} /* UA,NP,C,E,C */
07561 , { INF, INF, INF, INF, INF} /* UA,NP,C,E,G */
07562 , { INF, INF, INF, INF, INF} /* UA,NP,C,E,U */
07563 }
07564 , { { INF, INF, INF, INF, INF} /* UA,NP,C,A,E */
07565 , { INF, INF, INF, INF, INF} /* UA,NP,C,A,A */
07566 , { INF, INF, INF, INF, INF} /* UA,NP,C,A,C */
07567 , { INF, INF, INF, INF, INF} /* UA,NP,C,A,G */
07568 , { INF, INF, INF, INF, INF} /* UA,NP,C,A,U */
07569 }
07570 , { { INF, INF, INF, INF, INF} /* UA,NP,C,C,E */
07571 , { INF, INF, INF, INF, INF} /* UA,NP,C,C,A */
07572 , { INF, INF, INF, INF, INF} /* UA,NP,C,C,C */
07573 , { INF, INF, INF, INF, INF} /* UA,NP,C,C,G */
07574 , { INF, INF, INF, INF, INF} /* UA,NP,C,C,U */
07575 }
07576 , { { INF, INF, INF, INF, INF} /* UA,NP,C,G,E */
07577 , { INF, INF, INF, INF, INF} /* UA,NP,C,G,A */
07578 , { INF, INF, INF, INF, INF} /* UA,NP,C,G,C */
07579 , { INF, INF, INF, INF, INF} /* UA,NP,C,G,G */
07580 , { INF, INF, INF, INF, INF} /* UA,NP,C,G,U */
07581 }
07582 , { { INF, INF, INF, INF, INF} /* UA,NP,C,U,E */
07583 , { INF, INF, INF, INF, INF} /* UA,NP,C,U,A */
07584 , { INF, INF, INF, INF, INF} /* UA,NP,C,U,C */
07585 , { INF, INF, INF, INF, INF} /* UA,NP,C,U,G */
07586 , { INF, INF, INF, INF, INF} /* UA,NP,C,U,U */
07587 }
07588 }
07589 , { { { INF, INF, INF, INF, INF} /* UA,NP,G,E,E */
07590 , { INF, INF, INF, INF, INF} /* UA,NP,G,E,A */
07591 , { INF, INF, INF, INF, INF} /* UA,NP,G,E,C */
07592 , { INF, INF, INF, INF, INF} /* UA,NP,G,E,G */
07593 , { INF, INF, INF, INF, INF} /* UA,NP,G,E,U */
07594 }
07595 , { { INF, INF, INF, INF, INF} /* UA,NP,G,A,E */
07596 , { INF, INF, INF, INF, INF} /* UA,NP,G,A,A */
07597 , { INF, INF, INF, INF, INF} /* UA,NP,G,A,C */
07598 , { INF, INF, INF, INF, INF} /* UA,NP,G,A,G */
07599 , { INF, INF, INF, INF, INF} /* UA,NP,G,A,U */
07600 }
07601 , { { INF, INF, INF, INF, INF} /* UA,NP,G,C,E */
07602 , { INF, INF, INF, INF, INF} /* UA,NP,G,C,A */
07603 , { INF, INF, INF, INF, INF} /* UA,NP,G,C,C */
07604 , { INF, INF, INF, INF, INF} /* UA,NP,G,C,G */
07605 , { INF, INF, INF, INF, INF} /* UA,NP,G,C,U */
07606 }
07607 , { { INF, INF, INF, INF, INF} /* UA,NP,G,G,E */
07608 , { INF, INF, INF, INF, INF} /* UA,NP,G,G,A */
07609 , { INF, INF, INF, INF, INF} /* UA,NP,G,G,C */
07610 , { INF, INF, INF, INF, INF} /* UA,NP,G,G,G */
07611 , { INF, INF, INF, INF, INF} /* UA,NP,G,G,U */
07612 }
07613 , { { INF, INF, INF, INF, INF} /* UA,NP,G,U,E */
07614 , { INF, INF, INF, INF, INF} /* UA,NP,G,U,A */
07615 , { INF, INF, INF, INF, INF} /* UA,NP,G,U,C */
07616 , { INF, INF, INF, INF, INF} /* UA,NP,G,U,G */
07617 , { INF, INF, INF, INF, INF} /* UA,NP,G,U,U */
07618 }
07619 }
07620 , { { { INF, INF, INF, INF, INF} /* UA,NP,U,E,E */
07621 , { INF, INF, INF, INF, INF} /* UA,NP,U,E,A */
07622 , { INF, INF, INF, INF, INF} /* UA,NP,U,E,C */
07623 , { INF, INF, INF, INF, INF} /* UA,NP,U,E,G */
07624 , { INF, INF, INF, INF, INF} /* UA,NP,U,E,U */
07625 }
07626 , { { INF, INF, INF, INF, INF} /* UA,NP,U,A,E */
07627 , { INF, INF, INF, INF, INF} /* UA,NP,U,A,A */
07628 , { INF, INF, INF, INF, INF} /* UA,NP,U,A,C */
07629 , { INF, INF, INF, INF, INF} /* UA,NP,U,A,G */
07630 , { INF, INF, INF, INF, INF} /* UA,NP,U,A,U */
07631 }
07632 , { { INF, INF, INF, INF, INF} /* UA,NP,U,C,E */
```

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07633      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,A */
07634      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,C */
07635      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,G */
07636      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,U */
07637      }
07638      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,E */
07639      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,A */
07640      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,C */
07641      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,G */
07642      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,U */
07643      }
07644      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,E */
07645      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,A */
07646      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,C */
07647      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,G */
07648      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,U */
07649      }
07650      }
07651      }
07652      , {{{      240,      240,      240,      190,      240} /* UA,CG,E,E,E */
07653      , {      240,      240,      240,      190,      240} /* UA,CG,E,E,A */
07654      , {      220,      220,      220,      190,      220} /* UA,CG,E,E,C */
07655      , {      240,      240,      240,      190,      240} /* UA,CG,E,E,G */
07656      , {      210,      210,      210,      170,      210} /* UA,CG,E,E,U */
07657      }
07658      , {{      200,      200,      200,      150,      200} /* UA,CG,E,A,E */
07659      , {      200,      200,      200,      150,      200} /* UA,CG,E,A,A */
07660      , {      190,      190,      190,      150,      190} /* UA,CG,E,A,C */
07661      , {      160,      100,      160,      80,      130} /* UA,CG,E,A,G */
07662      , {      190,      190,      190,      150,      190} /* UA,CG,E,A,U */
07663      }
07664      , {{      240,      240,      240,      190,      240} /* UA,CG,E,C,E */
07665      , {      240,      240,      240,      190,      240} /* UA,CG,E,C,A */
07666      , {      220,      220,      220,      190,      220} /* UA,CG,E,C,C */
07667      , {      240,      240,      240,      190,      240} /* UA,CG,E,C,G */
07668      , {      210,      210,      210,      170,      210} /* UA,CG,E,C,U */
07669      }
07670      , {{      190,      190,      190,      150,      190} /* UA,CG,E,G,E */
07671      , {      160,      100,      160,      80,      130} /* UA,CG,E,G,A */
07672      , {      190,      190,      190,      150,      190} /* UA,CG,E,G,C */
07673      , {      150,      70,      50,      150,      90} /* UA,CG,E,G,G */
07674      , {      190,      190,      190,      150,      190} /* UA,CG,E,G,U */
07675      }
07676      , {{      240,      240,      240,      190,      240} /* UA,CG,E,U,E */
07677      , {      240,      240,      240,      190,      240} /* UA,CG,E,U,A */
07678      , {      210,      210,      210,      170,      210} /* UA,CG,E,U,C */
07679      , {      240,      240,      240,      190,      240} /* UA,CG,E,U,G */
07680      , {      180,      180,      120,      90,      120} /* UA,CG,E,U,U */
07681      }
07682      }
07683      , {{{      240,      240,      240,      190,      240} /* UA,CG,A,E,E */
07684      , {      240,      240,      240,      140,      240} /* UA,CG,A,E,A */
07685      , {      220,      220,      220,      190,      220} /* UA,CG,A,E,C */
07686      , {      240,      240,      240,      140,      240} /* UA,CG,A,E,G */
07687      , {      210,      210,      210,      170,      210} /* UA,CG,A,E,U */
07688      }
07689      , {{      200,      200,      200,      100,      200} /* UA,CG,A,A,E */
07690      , {      200,      200,      200,      100,      200} /* UA,CG,A,A,A */
07691      , {      190,      190,      190,      100,      190} /* UA,CG,A,A,C */
07692      , {      100,      100,      100,      10,      100} /* UA,CG,A,A,G */
07693      , {      190,      190,      190,      100,      190} /* UA,CG,A,A,U */
07694      }
07695      , {{      240,      240,      240,      190,      240} /* UA,CG,A,C,E */
07696      , {      240,      240,      240,      140,      240} /* UA,CG,A,C,A */
07697      , {      220,      220,      220,      190,      220} /* UA,CG,A,C,C */
07698      , {      240,      240,      240,      140,      240} /* UA,CG,A,C,G */
07699      , {      210,      210,      210,      170,      210} /* UA,CG,A,C,U */
07700      }
07701      , {{      190,      190,      190,      100,      190} /* UA,CG,A,G,E */
07702      , {      100,      100,      100,      10,      100} /* UA,CG,A,G,A */
07703      , {      190,      190,      190,      100,      190} /* UA,CG,A,G,C */
07704      , {      80,      50,      50,      80,      50} /* UA,CG,A,G,G */
07705      , {      190,      190,      190,      100,      190} /* UA,CG,A,G,U */
07706      }
07707      , {{      240,      240,      240,      170,      240} /* UA,CG,A,U,E */
07708      , {      240,      240,      240,      140,      240} /* UA,CG,A,U,A */
07709      , {      210,      210,      210,      170,      210} /* UA,CG,A,U,C */
07710      , {      240,      240,      240,      140,      240} /* UA,CG,A,U,G */
07711      , {      180,      180,      120,      20,      120} /* UA,CG,A,U,U */
07712      }
07713      }
07714      , {{{      240,      190,      240,      190,      210} /* UA,CG,C,E,E */
07715      , {      240,      190,      240,      190,      210} /* UA,CG,C,E,A */
07716      , {      220,      180,      220,      180,      190} /* UA,CG,C,E,C */
07717      , {      240,      190,      240,      190,      210} /* UA,CG,C,E,G */
07718      , {      210,      160,      210,      160,      180} /* UA,CG,C,E,U */
07719      }

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07720 ,{{ 200, 150, 200, 150, 170} /* UA,CG,C,A,E */
07721 ,{ 200, 150, 200, 150, 170} /* UA,CG,C,A,A */
07722 ,{ 190, 150, 190, 150, 160} /* UA,CG,C,A,C */
07723 ,{ 160, 60, 160, 60, 130} /* UA,CG,C,A,G */
07724 ,{ 190, 150, 190, 150, 160} /* UA,CG,C,A,U */
07725 }
07726 ,{{ 240, 190, 240, 190, 210} /* UA,CG,C,C,E */
07727 ,{ 240, 190, 240, 190, 210} /* UA,CG,C,C,A */
07728 ,{ 220, 180, 220, 180, 190} /* UA,CG,C,C,C */
07729 ,{ 240, 190, 240, 190, 210} /* UA,CG,C,C,G */
07730 ,{ 210, 160, 210, 160, 180} /* UA,CG,C,C,U */
07731 }
07732 ,{{ 190, 150, 190, 150, 160} /* UA,CG,C,G,E */
07733 ,{ 160, 60, 160, 60, 130} /* UA,CG,C,G,A */
07734 ,{ 190, 150, 190, 150, 160} /* UA,CG,C,G,C */
07735 ,{ 50, 0, 50, 0, 20} /* UA,CG,C,G,G */
07736 ,{ 190, 150, 190, 150, 160} /* UA,CG,C,G,U */
07737 }
07738 ,{{ 240, 190, 240, 190, 210} /* UA,CG,C,U,E */
07739 ,{ 240, 190, 240, 190, 210} /* UA,CG,C,U,A */
07740 ,{ 210, 160, 210, 160, 180} /* UA,CG,C,U,C */
07741 ,{ 240, 190, 240, 190, 210} /* UA,CG,C,U,G */
07742 ,{ 120, 70, 120, 70, 90} /* UA,CG,C,U,U */
07743 }
07744 }
07745 ,{{{ 240, 180, 240, 150, 240} /* UA,CG,G,E,E */
07746 ,{ 240, 130, 240, 80, 240} /* UA,CG,G,E,A */
07747 ,{ 220, 180, 220, 70, 220} /* UA,CG,G,E,C */
07748 ,{ 240, 130, 240, 150, 240} /* UA,CG,G,E,G */
07749 ,{ 210, 160, 210, 90, 210} /* UA,CG,G,E,U */
07750 }
07751 ,{{ 200, 90, 200, 80, 200} /* UA,CG,G,A,E */
07752 ,{ 200, 90, 200, 40, 200} /* UA,CG,G,A,A */
07753 ,{ 190, 90, 190, 40, 190} /* UA,CG,G,A,C */
07754 ,{ 100, 0, 100, 80, 100} /* UA,CG,G,A,G */
07755 ,{ 190, 90, 190, 40, 190} /* UA,CG,G,A,U */
07756 }
07757 ,{{ 240, 180, 240, 80, 240} /* UA,CG,G,C,E */
07758 ,{ 240, 130, 240, 80, 240} /* UA,CG,G,C,A */
07759 ,{ 220, 180, 220, 70, 220} /* UA,CG,G,C,C */
07760 ,{ 240, 130, 240, 80, 240} /* UA,CG,G,C,G */
07761 ,{ 210, 160, 210, 50, 210} /* UA,CG,G,C,U */
07762 }
07763 ,{{ 190, 90, 190, 150, 190} /* UA,CG,G,G,E */
07764 ,{ 100, 0, 100, 80, 100} /* UA,CG,G,G,A */
07765 ,{ 190, 90, 190, 40, 190} /* UA,CG,G,G,C */
07766 ,{ 150, 70, 150, 50, 150} /* UA,CG,G,G,G */
07767 ,{ 190, 90, 190, 40, 190} /* UA,CG,G,G,U */
07768 }
07769 ,{{ 240, 160, 240, 90, 240} /* UA,CG,G,U,E */
07770 ,{ 240, 130, 240, 80, 240} /* UA,CG,G,U,A */
07771 ,{ 210, 160, 210, 50, 210} /* UA,CG,G,U,C */
07772 ,{ 240, 130, 240, 80, 240} /* UA,CG,G,U,G */
07773 ,{ 120, 10, 120, 90, 120} /* UA,CG,G,U,U */
07774 }
07775 }
07776 ,{{{ 240, 190, 240, 190, 170} /* UA,CG,U,E,E */
07777 ,{ 240, 190, 240, 190, 170} /* UA,CG,U,E,A */
07778 ,{ 220, 180, 220, 180, 140} /* UA,CG,U,E,C */
07779 ,{ 240, 190, 240, 190, 150} /* UA,CG,U,E,G */
07780 ,{ 210, 160, 210, 160, 120} /* UA,CG,U,E,U */
07781 }
07782 ,{{ 200, 150, 200, 150, 170} /* UA,CG,U,A,E */
07783 ,{ 200, 150, 200, 150, 170} /* UA,CG,U,A,A */
07784 ,{ 190, 150, 190, 150, 110} /* UA,CG,U,A,C */
07785 ,{ 160, 60, 160, 60, 20} /* UA,CG,U,A,G */
07786 ,{ 190, 150, 190, 150, 110} /* UA,CG,U,A,U */
07787 }
07788 ,{{ 240, 190, 240, 190, 150} /* UA,CG,U,C,E */
07789 ,{ 240, 190, 240, 190, 150} /* UA,CG,U,C,A */
07790 ,{ 220, 180, 220, 180, 140} /* UA,CG,U,C,C */
07791 ,{ 240, 190, 240, 190, 150} /* UA,CG,U,C,G */
07792 ,{ 210, 160, 210, 160, 120} /* UA,CG,U,C,U */
07793 }
07794 ,{{ 190, 150, 190, 150, 110} /* UA,CG,U,G,E */
07795 ,{ 160, 60, 160, 60, 20} /* UA,CG,U,G,A */
07796 ,{ 190, 150, 190, 150, 110} /* UA,CG,U,G,C */
07797 ,{ 90, 0, 90, 0, 90} /* UA,CG,U,G,G */
07798 ,{ 190, 150, 190, 150, 110} /* UA,CG,U,G,U */
07799 }
07800 ,{{ 240, 190, 240, 190, 150} /* UA,CG,U,U,E */
07801 ,{ 240, 190, 240, 190, 150} /* UA,CG,U,U,A */
07802 ,{ 210, 160, 210, 160, 120} /* UA,CG,U,U,C */
07803 ,{ 240, 190, 240, 190, 150} /* UA,CG,U,U,G */
07804 ,{ 120, 70, 120, 70, 30} /* UA,CG,U,U,U */
07805 }
07806 }

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07807    }
07808    ,{{{ 210, 210, 210, 170, 210} /* UA,GC,E,E,E */
07809    ,{ 210, 210, 210, 170, 210} /* UA,GC,E,E,A */
07810    ,{ 190, 190, 190, 160, 190} /* UA,GC,E,E,C */
07811    ,{ 180, 180, 180, 150, 180} /* UA,GC,E,E,G */
07812    ,{ 190, 190, 190, 150, 190} /* UA,GC,E,E,U */
07813    }
07814    ,{{{ 210, 210, 210, 170, 210} /* UA,GC,E,A,E */
07815    ,{ 210, 210, 210, 170, 210} /* UA,GC,E,A,A */
07816    ,{ 190, 190, 190, 140, 190} /* UA,GC,E,A,C */
07817    ,{ 70, 10, 70, -10, 40} /* UA,GC,E,A,G */
07818    ,{ 190, 190, 190, 140, 190} /* UA,GC,E,A,U */
07819    }
07820    ,{{{ 190, 190, 190, 150, 190} /* UA,GC,E,C,E */
07821    ,{ 180, 180, 180, 140, 180} /* UA,GC,E,C,A */
07822    ,{ 190, 190, 190, 150, 190} /* UA,GC,E,C,C */
07823    ,{ 180, 180, 180, 140, 180} /* UA,GC,E,C,G */
07824    ,{ 190, 190, 190, 150, 190} /* UA,GC,E,C,U */
07825    }
07826    ,{{{ 190, 190, 190, 150, 190} /* UA,GC,E,G,E */
07827    ,{ 130, 70, 130, 50, 100} /* UA,GC,E,G,A */
07828    ,{ 190, 190, 190, 140, 190} /* UA,GC,E,G,C */
07829    ,{ 150, 70, 50, 150, 90} /* UA,GC,E,G,G */
07830    ,{ 190, 190, 190, 140, 190} /* UA,GC,E,G,U */
07831    }
07832    ,{{{ 190, 190, 190, 160, 190} /* UA,GC,E,U,E */
07833    ,{ 180, 180, 180, 140, 180} /* UA,GC,E,U,A */
07834    ,{ 190, 190, 190, 160, 190} /* UA,GC,E,U,C */
07835    ,{ 180, 180, 180, 140, 180} /* UA,GC,E,U,G */
07836    ,{ 170, 170, 110, 90, 110} /* UA,GC,E,U,U */
07837    }
07838    }
07839    ,{{{ 210, 210, 210, 160, 210} /* UA,GC,A,E,E */
07840    ,{ 210, 210, 210, 120, 210} /* UA,GC,A,E,A */
07841    ,{ 190, 190, 190, 160, 190} /* UA,GC,A,E,C */
07842    ,{ 180, 180, 180, 90, 180} /* UA,GC,A,E,G */
07843    ,{ 190, 190, 190, 150, 190} /* UA,GC,A,E,U */
07844    }
07845    ,{{{ 210, 210, 210, 120, 210} /* UA,GC,A,A,E */
07846    ,{ 210, 210, 210, 120, 210} /* UA,GC,A,A,A */
07847    ,{ 190, 190, 190, 90, 190} /* UA,GC,A,A,C */
07848    ,{ 10, 10, 10, -80, 10} /* UA,GC,A,A,G */
07849    ,{ 190, 190, 190, 90, 190} /* UA,GC,A,A,U */
07850    }
07851    ,{{{ 190, 190, 190, 150, 190} /* UA,GC,A,C,E */
07852    ,{ 180, 180, 180, 90, 180} /* UA,GC,A,C,A */
07853    ,{ 190, 190, 190, 150, 190} /* UA,GC,A,C,C */
07854    ,{ 180, 180, 180, 90, 180} /* UA,GC,A,C,G */
07855    ,{ 190, 190, 190, 150, 190} /* UA,GC,A,C,U */
07856    }
07857    ,{{{ 190, 190, 190, 90, 190} /* UA,GC,A,G,E */
07858    ,{ 70, 70, 70, -20, 70} /* UA,GC,A,G,A */
07859    ,{ 190, 190, 190, 90, 190} /* UA,GC,A,G,C */
07860    ,{ 80, 50, 50, 80, 50} /* UA,GC,A,G,G */
07861    ,{ 190, 190, 190, 90, 190} /* UA,GC,A,G,U */
07862    }
07863    ,{{{ 190, 190, 190, 160, 190} /* UA,GC,A,U,E */
07864    ,{ 180, 180, 180, 90, 180} /* UA,GC,A,U,A */
07865    ,{ 190, 190, 190, 160, 190} /* UA,GC,A,U,C */
07866    ,{ 180, 180, 180, 90, 180} /* UA,GC,A,U,G */
07867    ,{ 170, 170, 110, 20, 110} /* UA,GC,A,U,U */
07868    }
07869    }
07870    ,{{{ 210, 170, 210, 170, 180} /* UA,GC,C,E,E */
07871    ,{ 210, 170, 210, 170, 180} /* UA,GC,C,E,A */
07872    ,{ 190, 150, 190, 150, 160} /* UA,GC,C,E,C */
07873    ,{ 180, 140, 180, 140, 150} /* UA,GC,C,E,G */
07874    ,{ 190, 140, 190, 140, 160} /* UA,GC,C,E,U */
07875    }
07876    ,{{{ 210, 170, 210, 170, 180} /* UA,GC,C,A,E */
07877    ,{ 210, 170, 210, 170, 180} /* UA,GC,C,A,A */
07878    ,{ 190, 140, 190, 140, 160} /* UA,GC,C,A,C */
07879    ,{ 70, -30, 70, -30, 40} /* UA,GC,C,A,G */
07880    ,{ 190, 140, 190, 140, 160} /* UA,GC,C,A,U */
07881    }
07882    ,{{{ 190, 140, 190, 140, 160} /* UA,GC,C,C,E */
07883    ,{ 180, 140, 180, 140, 150} /* UA,GC,C,C,A */
07884    ,{ 190, 140, 190, 140, 160} /* UA,GC,C,C,C */
07885    ,{ 180, 140, 180, 140, 150} /* UA,GC,C,C,G */
07886    ,{ 190, 140, 190, 140, 160} /* UA,GC,C,C,U */
07887    }
07888    ,{{{ 190, 140, 190, 140, 160} /* UA,GC,C,G,E */
07889    ,{ 130, 30, 130, 30, 100} /* UA,GC,C,G,A */
07890    ,{ 190, 140, 190, 140, 160} /* UA,GC,C,G,C */
07891    ,{ 50, 0, 50, 0, 20} /* UA,GC,C,G,G */
07892    ,{ 190, 140, 190, 140, 160} /* UA,GC,C,G,U */
07893    }

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```
07894 ,{{ 190, 150, 190, 150, 160} /* UA,GC,C,U,E */
07895 ,{ 180, 140, 180, 140, 150} /* UA,GC,C,U,A */
07896 ,{ 190, 150, 190, 150, 160} /* UA,GC,C,U,C */
07897 ,{ 180, 140, 180, 140, 150} /* UA,GC,C,U,G */
07898 ,{ 110, 70, 110, 70, 80} /* UA,GC,C,U,U */
07899 }
07900
07901 ,{{{ 210, 150, 210, 150, 210} /* UA,GC,G,E,E */
07902 ,{ 210, 110, 210, 60, 210} /* UA,GC,G,E,A */
07903 ,{ 190, 150, 190, 40, 190} /* UA,GC,G,E,C */
07904 ,{ 180, 80, 180, 150, 180} /* UA,GC,G,E,G */
07905 ,{ 190, 140, 190, 90, 190} /* UA,GC,G,E,U */
07906 }
07907 ,{{{ 210, 110, 210, 60, 210} /* UA,GC,G,A,E */
07908 ,{ 210, 110, 210, 60, 210} /* UA,GC,G,A,A */
07909 ,{ 190, 80, 190, 30, 190} /* UA,GC,G,A,C */
07910 ,{ 10, -90, 10, -10, 10} /* UA,GC,G,A,G */
07911 ,{ 190, 80, 190, 30, 190} /* UA,GC,G,A,U */
07912 }
07913 ,{{{ 190, 140, 190, 30, 190} /* UA,GC,G,C,E */
07914 ,{ 180, 80, 180, 30, 180} /* UA,GC,G,C,A */
07915 ,{ 190, 140, 190, 30, 190} /* UA,GC,G,C,C */
07916 ,{ 180, 80, 180, 30, 180} /* UA,GC,G,C,G */
07917 ,{ 190, 140, 190, 30, 190} /* UA,GC,G,C,U */
07918 }
07919 ,{{{ 190, 80, 190, 150, 190} /* UA,GC,G,G,E */
07920 ,{ 70, -30, 70, 50, 70} /* UA,GC,G,G,A */
07921 ,{ 190, 80, 190, 30, 190} /* UA,GC,G,G,C */
07922 ,{ 150, 70, 50, 150, 50} /* UA,GC,G,G,G */
07923 ,{ 190, 80, 190, 30, 190} /* UA,GC,G,G,U */
07924 }
07925 ,{{{ 190, 150, 190, 90, 190} /* UA,GC,G,U,E */
07926 ,{ 180, 80, 180, 30, 180} /* UA,GC,G,U,A */
07927 ,{ 190, 150, 190, 40, 190} /* UA,GC,G,U,C */
07928 ,{ 180, 80, 180, 30, 180} /* UA,GC,G,U,G */
07929 ,{ 110, 10, 110, 90, 110} /* UA,GC,G,U,U */
07930 }
07931 }
07932 ,{{{ 210, 170, 210, 170, 190} /* UA,GC,U,E,E */
07933 ,{ 210, 170, 210, 170, 190} /* UA,GC,U,E,A */
07934 ,{ 190, 150, 190, 150, 110} /* UA,GC,U,E,C */
07935 ,{ 180, 140, 180, 140, 100} /* UA,GC,U,E,G */
07936 ,{ 190, 140, 190, 140, 100} /* UA,GC,U,E,U */
07937 }
07938 ,{{{ 210, 170, 210, 170, 190} /* UA,GC,U,A,E */
07939 ,{ 210, 170, 210, 170, 190} /* UA,GC,U,A,A */
07940 ,{ 190, 140, 190, 140, 100} /* UA,GC,U,A,C */
07941 ,{ 70, -30, 70, -30, -70} /* UA,GC,U,A,G */
07942 ,{ 190, 140, 190, 140, 100} /* UA,GC,U,A,U */
07943 }
07944 ,{{{ 190, 140, 190, 140, 100} /* UA,GC,U,C,E */
07945 ,{ 180, 140, 180, 140, 100} /* UA,GC,U,C,A */
07946 ,{ 190, 140, 190, 140, 100} /* UA,GC,U,C,C */
07947 ,{ 180, 140, 180, 140, 100} /* UA,GC,U,C,G */
07948 ,{ 190, 140, 190, 140, 100} /* UA,GC,U,C,U */
07949 }
07950 ,{{{ 190, 140, 190, 140, 100} /* UA,GC,U,G,E */
07951 ,{ 130, 30, 130, 30, -10} /* UA,GC,U,G,A */
07952 ,{ 190, 140, 190, 140, 100} /* UA,GC,U,G,C */
07953 ,{ 90, 0, 50, 0, 90} /* UA,GC,U,G,G */
07954 ,{ 190, 140, 190, 140, 100} /* UA,GC,U,G,U */
07955 }
07956 ,{{{ 190, 150, 190, 150, 110} /* UA,GC,U,U,E */
07957 ,{ 180, 140, 180, 140, 100} /* UA,GC,U,U,A */
07958 ,{ 190, 150, 190, 150, 110} /* UA,GC,U,U,C */
07959 ,{ 180, 140, 180, 140, 100} /* UA,GC,U,U,G */
07960 ,{ 110, 70, 110, 70, 30} /* UA,GC,U,U,U */
07961 }
07962 }
07963 }
07964 ,{{{ 370, 370, 340, 300, 340} /* UA,GU,E,E,E */
07965 ,{ 340, 340, 340, 300, 340} /* UA,GU,E,E,A */
07966 ,{ 310, 310, 310, 270, 310} /* UA,GU,E,E,C */
07967 ,{ 310, 310, 310, 280, 310} /* UA,GU,E,E,G */
07968 ,{ 370, 370, 310, 280, 310} /* UA,GU,E,E,U */
07969 }
07970 ,{{{ 340, 340, 340, 300, 340} /* UA,GU,E,A,E */
07971 ,{ 340, 340, 340, 300, 340} /* UA,GU,E,A,A */
07972 ,{ 310, 310, 310, 260, 310} /* UA,GU,E,A,C */
07973 ,{ 290, 230, 290, 200, 260} /* UA,GU,E,A,G */
07974 ,{ 310, 310, 310, 260, 310} /* UA,GU,E,A,U */
07975 }
07976 ,{{{ 310, 310, 310, 270, 310} /* UA,GU,E,C,E */
07977 ,{ 310, 310, 310, 260, 310} /* UA,GU,E,C,A */
07978 ,{ 310, 310, 310, 270, 310} /* UA,GU,E,C,C */
07979 ,{ 310, 310, 310, 260, 310} /* UA,GU,E,C,G */
07980 ,{ 310, 310, 310, 270, 310} /* UA,GU,E,C,U */
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07981      }
07982      ,{{      330,      310,      330,      280,      310} /* UA, GU, E, G, E */
07983      ,{      330,      270,      330,      240,      300} /* UA, GU, E, G, A */
07984      ,{      310,      310,      310,      260,      310} /* UA, GU, E, G, C */
07985      ,{      280,      200,      180,      280,      220} /* UA, GU, E, G, G */
07986      ,{      310,      310,      310,      260,      310} /* UA, GU, E, G, U */
07987      }
07988      ,{{      370,      370,      310,      280,      310} /* UA, GU, E, U, E */
07989      ,{      310,      310,      310,      260,      310} /* UA, GU, E, U, A */
07990      ,{      310,      310,      310,      270,      310} /* UA, GU, E, U, C */
07991      ,{      310,      310,      310,      260,      310} /* UA, GU, E, U, G */
07992      ,{      370,      370,      310,      280,      310} /* UA, GU, E, U, U */
07993      }
07994      }
07995      ,{{{      370,      370,      340,      270,      340} /* UA, GU, A, E, E */
07996      ,{      340,      340,      340,      250,      340} /* UA, GU, A, E, A */
07997      ,{      310,      310,      310,      270,      310} /* UA, GU, A, E, C */
07998      ,{      310,      310,      310,      210,      310} /* UA, GU, A, E, G */
07999      ,{      370,      370,      310,      270,      310} /* UA, GU, A, E, U */
08000      }
08001      ,{{      340,      340,      340,      250,      340} /* UA, GU, A, A, E */
08002      ,{      340,      340,      340,      250,      340} /* UA, GU, A, A, A */
08003      ,{      310,      310,      310,      210,      310} /* UA, GU, A, A, C */
08004      ,{      230,      230,      230,      130,      230} /* UA, GU, A, A, G */
08005      ,{      310,      310,      310,      210,      310} /* UA, GU, A, A, U */
08006      }
08007      ,{{{      310,      310,      310,      270,      310} /* UA, GU, A, C, E */
08008      ,{      310,      310,      310,      210,      310} /* UA, GU, A, C, A */
08009      ,{      310,      310,      310,      270,      310} /* UA, GU, A, C, C */
08010      ,{      310,      310,      310,      210,      310} /* UA, GU, A, C, G */
08011      ,{      310,      310,      310,      270,      310} /* UA, GU, A, C, U */
08012      }
08013      ,{{{      310,      310,      310,      210,      310} /* UA, GU, A, G, E */
08014      ,{      270,      270,      270,      170,      270} /* UA, GU, A, G, A */
08015      ,{      310,      310,      310,      210,      310} /* UA, GU, A, G, C */
08016      ,{      210,      180,      180,      210,      180} /* UA, GU, A, G, G */
08017      ,{      310,      310,      310,      210,      310} /* UA, GU, A, G, U */
08018      }
08019      ,{{{      370,      370,      310,      270,      310} /* UA, GU, A, U, E */
08020      ,{      310,      310,      310,      210,      310} /* UA, GU, A, U, A */
08021      ,{      310,      310,      310,      270,      310} /* UA, GU, A, U, C */
08022      ,{      310,      310,      310,      210,      310} /* UA, GU, A, U, G */
08023      ,{      370,      370,      310,      210,      310} /* UA, GU, A, U, U */
08024      }
08025      }
08026      ,{{{      340,      300,      340,      300,      310} /* UA, GU, C, E, E */
08027      ,{      340,      300,      340,      300,      310} /* UA, GU, C, E, A */
08028      ,{      310,      260,      310,      260,      280} /* UA, GU, C, E, C */
08029      ,{      310,      260,      310,      260,      280} /* UA, GU, C, E, G */
08030      ,{      310,      260,      310,      260,      280} /* UA, GU, C, E, U */
08031      }
08032      ,{{{      340,      300,      340,      300,      310} /* UA, GU, C, A, E */
08033      ,{      340,      300,      340,      300,      310} /* UA, GU, C, A, A */
08034      ,{      310,      260,      310,      260,      280} /* UA, GU, C, A, C */
08035      ,{      290,      180,      290,      180,      260} /* UA, GU, C, A, G */
08036      ,{      310,      260,      310,      260,      280} /* UA, GU, C, A, U */
08037      }
08038      ,{{{      310,      260,      310,      260,      280} /* UA, GU, C, C, E */
08039      ,{      310,      260,      310,      260,      280} /* UA, GU, C, C, A */
08040      ,{      310,      260,      310,      260,      280} /* UA, GU, C, C, C */
08041      ,{      310,      260,      310,      260,      280} /* UA, GU, C, C, G */
08042      ,{      310,      260,      310,      260,      280} /* UA, GU, C, C, U */
08043      }
08044      ,{{{      330,      260,      330,      260,      300} /* UA, GU, C, G, E */
08045      ,{      330,      220,      330,      220,      300} /* UA, GU, C, G, A */
08046      ,{      310,      260,      310,      260,      280} /* UA, GU, C, G, C */
08047      ,{      180,      130,      180,      130,      150} /* UA, GU, C, G, G */
08048      ,{      310,      260,      310,      260,      280} /* UA, GU, C, G, U */
08049      }
08050      ,{{{      310,      260,      310,      260,      280} /* UA, GU, C, U, E */
08051      ,{      310,      260,      310,      260,      280} /* UA, GU, C, U, A */
08052      ,{      310,      260,      310,      260,      280} /* UA, GU, C, U, C */
08053      ,{      310,      260,      310,      260,      280} /* UA, GU, C, U, G */
08054      ,{      310,      260,      310,      260,      280} /* UA, GU, C, U, U */
08055      }
08056      }
08057      ,{{{      340,      260,      340,      280,      340} /* UA, GU, G, E, E */
08058      ,{      340,      240,      340,      240,      340} /* UA, GU, G, E, A */
08059      ,{      310,      260,      310,      150,      310} /* UA, GU, G, E, C */
08060      ,{      310,      200,      310,      280,      310} /* UA, GU, G, E, G */
08061      ,{      310,      260,      310,      280,      310} /* UA, GU, G, E, U */
08062      }
08063      ,{{{      340,      240,      340,      200,      340} /* UA, GU, G, A, E */
08064      ,{      340,      240,      340,      190,      340} /* UA, GU, G, A, A */
08065      ,{      310,      200,      310,      150,      310} /* UA, GU, G, A, C */
08066      ,{      230,      120,      230,      200,      230} /* UA, GU, G, A, G */
08067      ,{      310,      200,      310,      150,      310} /* UA, GU, G, A, U */

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08068     }
08069     ,{{    310,    260,    310,    150,    310} /* UA, GU, G, C, E */
08070     ,{{    310,    200,    310,    150,    310} /* UA, GU, G, C, A */
08071     ,{{    310,    260,    310,    150,    310} /* UA, GU, G, C, C */
08072     ,{{    310,    200,    310,    150,    310} /* UA, GU, G, C, G */
08073     ,{{    310,    260,    310,    150,    310} /* UA, GU, G, C, U */
08074     }
08075     ,{{    310,    200,    310,    280,    310} /* UA, GU, G, G, E */
08076     ,{{    270,    160,    270,    240,    270} /* UA, GU, G, G, A */
08077     ,{{    310,    200,    310,    150,    310} /* UA, GU, G, G, C */
08078     ,{{    280,    200,    180,    280,    180} /* UA, GU, G, G, G */
08079     ,{{    310,    200,    310,    150,    310} /* UA, GU, G, G, U */
08080     }
08081     ,{{    310,    260,    310,    280,    310} /* UA, GU, G, U, E */
08082     ,{{    310,    200,    310,    150,    310} /* UA, GU, G, U, A */
08083     ,{{    310,    260,    310,    150,    310} /* UA, GU, G, U, C */
08084     ,{{    310,    200,    310,    150,    310} /* UA, GU, G, U, G */
08085     ,{{    310,    200,    310,    280,    310} /* UA, GU, G, U, U */
08086     }
08087     }
08088     ,{{{    340,    300,    340,    300,    320} /* UA, GU, U, E, E */
08089     ,{{    340,    300,    340,    300,    320} /* UA, GU, U, E, A */
08090     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, E, C */
08091     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, E, G */
08092     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, E, U */
08093     }
08094     ,{{{    340,    300,    340,    300,    320} /* UA, GU, U, A, E */
08095     ,{{    340,    300,    340,    300,    320} /* UA, GU, U, A, A */
08096     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, A, C */
08097     ,{{    290,    180,    290,    140,    140} /* UA, GU, U, A, G */
08098     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, A, U */
08099     }
08100     ,{{{    310,    260,    310,    260,    220} /* UA, GU, U, C, E */
08101     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, C, A */
08102     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, C, C */
08103     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, C, G */
08104     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, C, U */
08105     }
08106     ,{{{    330,    260,    330,    260,    220} /* UA, GU, U, G, E */
08107     ,{{    330,    220,    330,    220,    180} /* UA, GU, U, G, A */
08108     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, G, C */
08109     ,{{    220,    130,    180,    130,    220} /* UA, GU, U, G, G */
08110     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, G, U */
08111     }
08112     ,{{{    310,    260,    310,    260,    220} /* UA, GU, U, U, E */
08113     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, U, A */
08114     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, U, C */
08115     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, U, G */
08116     ,{{    310,    260,    310,    260,    220} /* UA, GU, U, U, U */
08117     }
08118     }
08119     }
08120     ,{{{    370,    340,    370,    280,    340} /* UA, UG, E, E, E */
08121     ,{{    370,    310,    370,    280,    340} /* UA, UG, E, E, A */
08122     ,{{    280,    280,    280,    240,    280} /* UA, UG, E, E, C */
08123     ,{{    280,    280,    280,    250,    280} /* UA, UG, E, E, G */
08124     ,{{    340,    340,    280,    250,    280} /* UA, UG, E, E, U */
08125     }
08126     ,{{{    280,    280,    280,    230,    280} /* UA, UG, E, A, E */
08127     ,{{    240,    240,    240,    200,    240} /* UA, UG, E, A, A */
08128     ,{{    280,    280,    280,    230,    280} /* UA, UG, E, A, C */
08129     ,{{    200,    140,    200,    120,    170} /* UA, UG, E, A, G */
08130     ,{{    280,    280,    280,    230,    280} /* UA, UG, E, A, U */
08131     }
08132     ,{{{    280,    280,    280,    240,    280} /* UA, UG, E, C, E */
08133     ,{{    280,    280,    280,    230,    280} /* UA, UG, E, C, A */
08134     ,{{    280,    280,    280,    240,    280} /* UA, UG, E, C, C */
08135     ,{{    280,    280,    280,    230,    280} /* UA, UG, E, C, G */
08136     ,{{    280,    280,    280,    240,    280} /* UA, UG, E, C, U */
08137     }
08138     ,{{{    370,    310,    370,    280,    340} /* UA, UG, E, G, E */
08139     ,{{    370,    310,    370,    280,    340} /* UA, UG, E, G, A */
08140     ,{{    280,    280,    280,    230,    280} /* UA, UG, E, G, C */
08141     ,{{    250,    170,    150,    250,    190} /* UA, UG, E, G, G */
08142     ,{{    280,    280,    280,    230,    280} /* UA, UG, E, G, U */
08143     }
08144     ,{{{    340,    340,    280,    250,    280} /* UA, UG, E, U, E */
08145     ,{{    280,    280,    280,    230,    280} /* UA, UG, E, U, A */
08146     ,{{    280,    280,    280,    240,    280} /* UA, UG, E, U, C */
08147     ,{{    280,    280,    280,    230,    280} /* UA, UG, E, U, G */
08148     ,{{    340,    340,    280,    250,    280} /* UA, UG, E, U, U */
08149     }
08150     }
08151     ,{{{    340,    340,    310,    240,    310} /* UA, UG, A, E, E */
08152     ,{{    310,    310,    310,    210,    310} /* UA, UG, A, E, A */
08153     ,{{    280,    280,    280,    240,    280} /* UA, UG, A, E, C */
08154     ,{{    280,    280,    280,    180,    280} /* UA, UG, A, E, G */
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08155      , {      340,      340,      280,      240,      280} /* UA,UG,A,E,U */
08156      }
08157      , { {      280,      280,      280,      180,      280} /* UA,UG,A,A,E */
08158      , {      240,      240,      240,      150,      240} /* UA,UG,A,A,A */
08159      , {      280,      280,      280,      180,      280} /* UA,UG,A,A,C */
08160      , {      140,      140,      140,      50,      140} /* UA,UG,A,A,G */
08161      , {      280,      280,      280,      180,      280} /* UA,UG,A,A,U */
08162      }
08163      , { {      280,      280,      280,      240,      280} /* UA,UG,A,C,E */
08164      , {      280,      280,      280,      180,      280} /* UA,UG,A,C,A */
08165      , {      280,      280,      280,      240,      280} /* UA,UG,A,C,C */
08166      , {      280,      280,      280,      180,      280} /* UA,UG,A,C,G */
08167      , {      280,      280,      280,      240,      280} /* UA,UG,A,C,U */
08168      }
08169      , { {      310,      310,      310,      210,      310} /* UA,UG,A,G,E */
08170      , {      310,      310,      310,      210,      310} /* UA,UG,A,G,A */
08171      , {      280,      280,      280,      180,      280} /* UA,UG,A,G,C */
08172      , {      180,      150,      150,      180,      150} /* UA,UG,A,G,G */
08173      , {      280,      280,      280,      180,      280} /* UA,UG,A,G,U */
08174      }
08175      , { {      340,      340,      280,      240,      280} /* UA,UG,A,U,E */
08176      , {      280,      280,      280,      180,      280} /* UA,UG,A,U,A */
08177      , {      280,      280,      280,      240,      280} /* UA,UG,A,U,C */
08178      , {      280,      280,      280,      180,      280} /* UA,UG,A,U,G */
08179      , {      340,      340,      280,      180,      280} /* UA,UG,A,U,U */
08180      }
08181      }
08182      , { { {      370,      260,      370,      260,      340} /* UA,UG,C,E,E */
08183      , {      370,      260,      370,      260,      340} /* UA,UG,C,E,A */
08184      , {      280,      230,      280,      230,      250} /* UA,UG,C,E,C */
08185      , {      280,      230,      280,      230,      250} /* UA,UG,C,E,G */
08186      , {      280,      230,      280,      230,      250} /* UA,UG,C,E,U */
08187      }
08188      , { {      280,      230,      280,      230,      250} /* UA,UG,C,A,E */
08189      , {      240,      200,      240,      200,      210} /* UA,UG,C,A,A */
08190      , {      280,      230,      280,      230,      250} /* UA,UG,C,A,C */
08191      , {      200,      100,      200,      100,      170} /* UA,UG,C,A,G */
08192      , {      280,      230,      280,      230,      250} /* UA,UG,C,A,U */
08193      }
08194      , { {      280,      230,      280,      230,      250} /* UA,UG,C,C,E */
08195      , {      280,      230,      280,      230,      250} /* UA,UG,C,C,A */
08196      , {      280,      230,      280,      230,      250} /* UA,UG,C,C,C */
08197      , {      280,      230,      280,      230,      250} /* UA,UG,C,C,G */
08198      , {      280,      230,      280,      230,      250} /* UA,UG,C,C,U */
08199      }
08200      , { {      370,      260,      370,      260,      340} /* UA,UG,C,G,E */
08201      , {      370,      260,      370,      260,      340} /* UA,UG,C,G,A */
08202      , {      280,      230,      280,      230,      250} /* UA,UG,C,G,C */
08203      , {      150,      100,      150,      100,      120} /* UA,UG,C,G,G */
08204      , {      280,      230,      280,      230,      250} /* UA,UG,C,G,U */
08205      }
08206      , { {      280,      230,      280,      230,      250} /* UA,UG,C,U,E */
08207      , {      280,      230,      280,      230,      250} /* UA,UG,C,U,A */
08208      , {      280,      230,      280,      230,      250} /* UA,UG,C,U,C */
08209      , {      280,      230,      280,      230,      250} /* UA,UG,C,U,G */
08210      , {      280,      230,      280,      230,      250} /* UA,UG,C,U,U */
08211      }
08212      }
08213      , { { {      310,      230,      310,      280,      310} /* UA,UG,G,E,E */
08214      , {      310,      200,      310,      280,      310} /* UA,UG,G,E,A */
08215      , {      280,      230,      280,      120,      280} /* UA,UG,G,E,C */
08216      , {      280,      170,      280,      250,      280} /* UA,UG,G,E,G */
08217      , {      280,      230,      280,      250,      280} /* UA,UG,G,E,U */
08218      }
08219      , { {      280,      170,      280,      120,      280} /* UA,UG,G,A,E */
08220      , {      240,      140,      240,      90,      240} /* UA,UG,G,A,A */
08221      , {      280,      170,      280,      120,      280} /* UA,UG,G,A,C */
08222      , {      140,      40,      140,      120,      140} /* UA,UG,G,A,G */
08223      , {      280,      170,      280,      120,      280} /* UA,UG,G,A,U */
08224      }
08225      , { {      280,      230,      280,      120,      280} /* UA,UG,G,C,E */
08226      , {      280,      170,      280,      120,      280} /* UA,UG,G,C,A */
08227      , {      280,      230,      280,      120,      280} /* UA,UG,G,C,C */
08228      , {      280,      170,      280,      120,      280} /* UA,UG,G,C,G */
08229      , {      280,      230,      280,      120,      280} /* UA,UG,G,C,U */
08230      }
08231      , { {      310,      200,      310,      280,      310} /* UA,UG,G,G,E */
08232      , {      310,      200,      310,      280,      310} /* UA,UG,G,G,A */
08233      , {      280,      170,      280,      120,      280} /* UA,UG,G,G,C */
08234      , {      250,      170,      150,      250,      150} /* UA,UG,G,G,G */
08235      , {      280,      170,      280,      120,      280} /* UA,UG,G,G,U */
08236      }
08237      , { {      280,      230,      280,      250,      280} /* UA,UG,G,U,E */
08238      , {      280,      170,      280,      120,      280} /* UA,UG,G,U,A */
08239      , {      280,      230,      280,      120,      280} /* UA,UG,G,U,C */
08240      , {      280,      170,      280,      120,      280} /* UA,UG,G,U,G */
08241      , {      280,      170,      280,      250,      280} /* UA,UG,G,U,U */

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08242     }
08243     }
08244     ,{{ { 370, 260, 370, 260, 220} /* UA,UG,U,E,E */
08245     , { 370, 260, 370, 260, 220} /* UA,UG,U,E,A */
08246     , { 280, 230, 280, 230, 190} /* UA,UG,U,E,C */
08247     , { 280, 230, 280, 230, 190} /* UA,UG,U,E,G */
08248     , { 280, 230, 280, 230, 190} /* UA,UG,U,E,U */
08249     }
08250     ,{{ { 280, 230, 280, 230, 220} /* UA,UG,U,A,E */
08251     , { 240, 200, 240, 200, 220} /* UA,UG,U,A,A */
08252     , { 280, 230, 280, 230, 190} /* UA,UG,U,A,C */
08253     , { 200, 100, 200, 100, 60} /* UA,UG,U,A,G */
08254     , { 280, 230, 280, 230, 190} /* UA,UG,U,A,U */
08255     }
08256     ,{{ { 280, 230, 280, 230, 190} /* UA,UG,U,C,E */
08257     , { 280, 230, 280, 230, 190} /* UA,UG,U,C,A */
08258     , { 280, 230, 280, 230, 190} /* UA,UG,U,C,C */
08259     , { 280, 230, 280, 230, 190} /* UA,UG,U,C,G */
08260     , { 280, 230, 280, 230, 190} /* UA,UG,U,C,U */
08261     }
08262     ,{{ { 370, 260, 370, 260, 220} /* UA,UG,U,G,E */
08263     , { 370, 260, 370, 260, 220} /* UA,UG,U,G,A */
08264     , { 280, 230, 280, 230, 190} /* UA,UG,U,G,C */
08265     , { 190, 100, 150, 100, 190} /* UA,UG,U,G,G */
08266     , { 280, 230, 280, 230, 190} /* UA,UG,U,G,U */
08267     }
08268     ,{{ { 280, 230, 280, 230, 190} /* UA,UG,U,U,E */
08269     , { 280, 230, 280, 230, 190} /* UA,UG,U,U,A */
08270     , { 280, 230, 280, 230, 190} /* UA,UG,U,U,C */
08271     , { 280, 230, 280, 230, 190} /* UA,UG,U,U,G */
08272     , { 280, 230, 280, 230, 190} /* UA,UG,U,U,U */
08273     }
08274     }
08275     }
08276     ,{{{ { 280, 280, 280, 230, 280} /* UA,AU,E,E,E */
08277     , { 280, 280, 280, 230, 280} /* UA,AU,E,E,A */
08278     , { 260, 260, 260, 220, 260} /* UA,AU,E,E,C */
08279     , { 260, 260, 260, 220, 260} /* UA,AU,E,E,G */
08280     , { 260, 260, 260, 220, 260} /* UA,AU,E,E,U */
08281     }
08282     ,{{ { 280, 280, 280, 230, 280} /* UA,AU,E,A,E */
08283     , { 280, 280, 280, 230, 280} /* UA,AU,E,A,A */
08284     , { 250, 250, 250, 210, 250} /* UA,AU,E,A,C */
08285     , { 210, 150, 210, 130, 180} /* UA,AU,E,A,G */
08286     , { 250, 250, 250, 210, 250} /* UA,AU,E,A,U */
08287     }
08288     ,{{ { 260, 260, 260, 220, 260} /* UA,AU,E,C,E */
08289     , { 260, 260, 260, 220, 260} /* UA,AU,E,C,A */
08290     , { 260, 260, 260, 220, 260} /* UA,AU,E,C,C */
08291     , { 260, 260, 260, 220, 260} /* UA,AU,E,C,G */
08292     , { 260, 260, 260, 220, 260} /* UA,AU,E,C,U */
08293     }
08294     ,{{ { 280, 250, 280, 210, 250} /* UA,AU,E,G,E */
08295     , { 280, 220, 280, 200, 250} /* UA,AU,E,G,A */
08296     , { 250, 250, 250, 210, 250} /* UA,AU,E,G,C */
08297     , { 210, 130, 100, 210, 150} /* UA,AU,E,G,G */
08298     , { 250, 250, 250, 210, 250} /* UA,AU,E,G,U */
08299     }
08300     ,{{ { 260, 260, 260, 220, 260} /* UA,AU,E,U,E */
08301     , { 260, 260, 260, 220, 260} /* UA,AU,E,U,A */
08302     , { 260, 260, 260, 220, 260} /* UA,AU,E,U,C */
08303     , { 260, 260, 260, 220, 260} /* UA,AU,E,U,G */
08304     , { 230, 230, 170, 140, 170} /* UA,AU,E,U,U */
08305     }
08306     }
08307     ,{{{ { 280, 280, 280, 220, 280} /* UA,AU,A,E,E */
08308     , { 280, 280, 280, 180, 280} /* UA,AU,A,E,A */
08309     , { 260, 260, 260, 220, 260} /* UA,AU,A,E,C */
08310     , { 260, 260, 260, 170, 260} /* UA,AU,A,E,G */
08311     , { 260, 260, 260, 220, 260} /* UA,AU,A,E,U */
08312     }
08313     ,{{ { 280, 280, 280, 180, 280} /* UA,AU,A,A,E */
08314     , { 280, 280, 280, 180, 280} /* UA,AU,A,A,A */
08315     , { 250, 250, 250, 160, 250} /* UA,AU,A,A,C */
08316     , { 150, 150, 150, 60, 150} /* UA,AU,A,A,G */
08317     , { 250, 250, 250, 160, 250} /* UA,AU,A,A,U */
08318     }
08319     ,{{ { 260, 260, 260, 220, 260} /* UA,AU,A,C,E */
08320     , { 260, 260, 260, 170, 260} /* UA,AU,A,C,A */
08321     , { 260, 260, 260, 220, 260} /* UA,AU,A,C,C */
08322     , { 260, 260, 260, 170, 260} /* UA,AU,A,C,G */
08323     , { 260, 260, 260, 220, 260} /* UA,AU,A,C,U */
08324     }
08325     ,{{ { 250, 250, 250, 160, 250} /* UA,AU,A,G,E */
08326     , { 220, 220, 220, 130, 220} /* UA,AU,A,G,A */
08327     , { 250, 250, 250, 160, 250} /* UA,AU,A,G,C */
08328     , { 140, 100, 100, 140, 100} /* UA,AU,A,G,G */
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08329      , {      250,      250,      250,      160,      250} /* UA,AU,A,G,U */
08330      }
08331      , {{      260,      260,      260,      220,      260} /* UA,AU,A,U,E */
08332      , {      260,      260,      260,      170,      260} /* UA,AU,A,U,A */
08333      , {      260,      260,      260,      220,      260} /* UA,AU,A,U,C */
08334      , {      260,      260,      260,      170,      260} /* UA,AU,A,U,G */
08335      , {      230,      230,      170,      70,      170} /* UA,AU,A,U,U */
08336      }
08337      }
08338      , {{{      280,      230,      280,      230,      250} /* UA,AU,C,E,E */
08339      , {      280,      230,      280,      230,      250} /* UA,AU,C,E,A */
08340      , {      260,      210,      260,      210,      230} /* UA,AU,C,E,C */
08341      , {      260,      220,      260,      220,      230} /* UA,AU,C,E,G */
08342      , {      260,      210,      260,      210,      230} /* UA,AU,C,E,U */
08343      }
08344      , {{      280,      230,      280,      230,      250} /* UA,AU,C,A,E */
08345      , {      280,      230,      280,      230,      250} /* UA,AU,C,A,A */
08346      , {      250,      210,      250,      210,      220} /* UA,AU,C,A,C */
08347      , {      210,      110,      210,      110,      180} /* UA,AU,C,A,G */
08348      , {      250,      210,      250,      210,      220} /* UA,AU,C,A,U */
08349      }
08350      , {{      260,      220,      260,      220,      230} /* UA,AU,C,C,E */
08351      , {      260,      220,      260,      220,      230} /* UA,AU,C,C,A */
08352      , {      260,      210,      260,      210,      230} /* UA,AU,C,C,C */
08353      , {      260,      220,      260,      220,      230} /* UA,AU,C,C,G */
08354      , {      260,      210,      260,      210,      230} /* UA,AU,C,C,U */
08355      }
08356      , {{      280,      210,      280,      210,      250} /* UA,AU,C,G,E */
08357      , {      280,      180,      280,      180,      250} /* UA,AU,C,G,A */
08358      , {      250,      210,      250,      210,      220} /* UA,AU,C,G,C */
08359      , {      100,      60,      100,      60,      70} /* UA,AU,C,G,G */
08360      , {      250,      210,      250,      210,      220} /* UA,AU,C,G,U */
08361      }
08362      , {{      260,      220,      260,      220,      230} /* UA,AU,C,U,E */
08363      , {      260,      220,      260,      220,      230} /* UA,AU,C,U,A */
08364      , {      260,      210,      260,      210,      230} /* UA,AU,C,U,C */
08365      , {      260,      220,      260,      220,      230} /* UA,AU,C,U,G */
08366      , {      170,      120,      170,      120,      140} /* UA,AU,C,U,U */
08367      }
08368      }
08369      , {{{      280,      210,      280,      210,      280} /* UA,AU,G,E,E */
08370      , {      280,      170,      280,      200,      280} /* UA,AU,G,E,A */
08371      , {      260,      210,      260,      100,      260} /* UA,AU,G,E,C */
08372      , {      260,      160,      260,      210,      260} /* UA,AU,G,E,G */
08373      , {      260,      210,      260,      140,      260} /* UA,AU,G,E,U */
08374      }
08375      , {{      280,      170,      280,      130,      280} /* UA,AU,G,A,E */
08376      , {      280,      170,      280,      120,      280} /* UA,AU,G,A,A */
08377      , {      250,      150,      250,      100,      250} /* UA,AU,G,A,C */
08378      , {      150,      50,      150,      130,      150} /* UA,AU,G,A,G */
08379      , {      250,      150,      250,      100,      250} /* UA,AU,G,A,U */
08380      }
08381      , {{      260,      210,      260,      110,      260} /* UA,AU,G,C,E */
08382      , {      260,      160,      260,      110,      260} /* UA,AU,G,C,A */
08383      , {      260,      210,      260,      100,      260} /* UA,AU,G,C,C */
08384      , {      260,      160,      260,      110,      260} /* UA,AU,G,C,G */
08385      , {      260,      210,      260,      100,      260} /* UA,AU,G,C,U */
08386      }
08387      , {{      250,      150,      250,      210,      250} /* UA,AU,G,G,E */
08388      , {      220,      120,      220,      200,      220} /* UA,AU,G,G,A */
08389      , {      250,      150,      250,      100,      250} /* UA,AU,G,G,C */
08390      , {      210,      130,      100,      210,      100} /* UA,AU,G,G,G */
08391      , {      250,      150,      250,      100,      250} /* UA,AU,G,G,U */
08392      }
08393      , {{{      260,      210,      260,      140,      260} /* UA,AU,G,U,E */
08394      , {      260,      160,      260,      110,      260} /* UA,AU,G,U,A */
08395      , {      260,      210,      260,      100,      260} /* UA,AU,G,U,C */
08396      , {      260,      160,      260,      110,      260} /* UA,AU,G,U,G */
08397      , {      170,      60,      170,      140,      170} /* UA,AU,G,U,U */
08398      }
08399      }
08400      , {{{      280,      230,      280,      230,      250} /* UA,AU,U,E,E */
08401      , {      280,      230,      280,      230,      250} /* UA,AU,U,E,A */
08402      , {      260,      210,      260,      210,      170} /* UA,AU,U,E,C */
08403      , {      260,      220,      260,      220,      180} /* UA,AU,U,E,G */
08404      , {      260,      210,      260,      210,      170} /* UA,AU,U,E,U */
08405      }
08406      , {{      280,      230,      280,      230,      250} /* UA,AU,U,A,E */
08407      , {      280,      230,      280,      230,      250} /* UA,AU,U,A,A */
08408      , {      250,      210,      250,      210,      170} /* UA,AU,U,A,C */
08409      , {      210,      110,      210,      110,      70} /* UA,AU,U,A,G */
08410      , {      250,      210,      250,      210,      170} /* UA,AU,U,A,U */
08411      }
08412      , {{      260,      220,      260,      220,      180} /* UA,AU,U,C,E */
08413      , {      260,      220,      260,      220,      180} /* UA,AU,U,C,A */
08414      , {      260,      210,      260,      210,      170} /* UA,AU,U,C,C */
08415      , {      260,      220,      260,      220,      180} /* UA,AU,U,C,G */

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08416 , { 260, 210, 260, 210, 170} /* UA,AU,U,C,U */
08417 }
08418 , {{ 280, 210, 280, 210, 170} /* UA,AU,U,G,E */
08419 , { 280, 180, 280, 180, 140} /* UA,AU,U,G,A */
08420 , { 250, 210, 250, 210, 170} /* UA,AU,U,G,C */
08421 , { 150, 60, 100, 60, 150} /* UA,AU,U,G,G */
08422 , { 250, 210, 250, 210, 170} /* UA,AU,U,G,U */
08423 }
08424 , {{ 260, 220, 260, 220, 180} /* UA,AU,U,U,E */
08425 , { 260, 220, 260, 220, 180} /* UA,AU,U,U,A */
08426 , { 260, 210, 260, 210, 170} /* UA,AU,U,U,C */
08427 , { 260, 220, 260, 220, 180} /* UA,AU,U,U,G */
08428 , { 170, 120, 170, 120, 80} /* UA,AU,U,U,U */
08429 }
08430 }
08431 }
08432 , {{{ 280, 280, 280, 240, 280} /* UA,UA,E,E,E */
08433 , { 280, 280, 280, 230, 280} /* UA,UA,E,E,A */
08434 , { 280, 280, 280, 240, 280} /* UA,UA,E,E,C */
08435 , { 280, 280, 280, 230, 280} /* UA,UA,E,E,G */
08436 , { 280, 280, 280, 240, 280} /* UA,UA,E,E,U */
08437 }
08438 , {{ 280, 280, 280, 230, 280} /* UA,UA,E,A,E */
08439 , { 280, 280, 280, 230, 280} /* UA,UA,E,A,A */
08440 , { 230, 230, 230, 190, 230} /* UA,UA,E,A,C */
08441 , { 230, 170, 230, 150, 200} /* UA,UA,E,A,G */
08442 , { 230, 230, 230, 190, 230} /* UA,UA,E,A,U */
08443 }
08444 , {{ 280, 280, 280, 240, 280} /* UA,UA,E,C,E */
08445 , { 280, 280, 280, 230, 280} /* UA,UA,E,C,A */
08446 , { 280, 280, 280, 240, 280} /* UA,UA,E,C,C */
08447 , { 280, 280, 280, 230, 280} /* UA,UA,E,C,G */
08448 , { 280, 280, 280, 240, 280} /* UA,UA,E,C,U */
08449 }
08450 , {{ 240, 230, 240, 230, 230} /* UA,UA,E,G,E */
08451 , { 240, 180, 240, 160, 210} /* UA,UA,E,G,A */
08452 , { 230, 230, 230, 190, 230} /* UA,UA,E,G,C */
08453 , { 230, 150, 120, 230, 170} /* UA,UA,E,G,G */
08454 , { 230, 230, 230, 190, 230} /* UA,UA,E,G,U */
08455 }
08456 , {{ 280, 280, 280, 230, 280} /* UA,UA,E,U,E */
08457 , { 280, 280, 280, 230, 280} /* UA,UA,E,U,A */
08458 , { 250, 250, 250, 210, 250} /* UA,UA,E,U,C */
08459 , { 280, 280, 280, 230, 280} /* UA,UA,E,U,G */
08460 , { 250, 250, 190, 170, 190} /* UA,UA,E,U,U */
08461 }
08462 }
08463 , {{{ 280, 280, 280, 240, 280} /* UA,UA,A,E,E */
08464 , { 280, 280, 280, 180, 280} /* UA,UA,A,E,A */
08465 , { 280, 280, 280, 240, 280} /* UA,UA,A,E,C */
08466 , { 280, 280, 280, 180, 280} /* UA,UA,A,E,G */
08467 , { 280, 280, 280, 240, 280} /* UA,UA,A,E,U */
08468 }
08469 , {{ 280, 280, 280, 180, 280} /* UA,UA,A,A,E */
08470 , { 280, 280, 280, 180, 280} /* UA,UA,A,A,A */
08471 , { 230, 230, 230, 140, 230} /* UA,UA,A,A,C */
08472 , { 170, 170, 170, 80, 170} /* UA,UA,A,A,G */
08473 , { 230, 230, 230, 140, 230} /* UA,UA,A,A,U */
08474 }
08475 , {{{ 280, 280, 280, 240, 280} /* UA,UA,A,C,E */
08476 , { 280, 280, 280, 180, 280} /* UA,UA,A,C,A */
08477 , { 280, 280, 280, 240, 280} /* UA,UA,A,C,C */
08478 , { 280, 280, 280, 180, 280} /* UA,UA,A,C,G */
08479 , { 280, 280, 280, 240, 280} /* UA,UA,A,C,U */
08480 }
08481 , {{ 230, 230, 230, 160, 230} /* UA,UA,A,G,E */
08482 , { 180, 180, 180, 90, 180} /* UA,UA,A,G,A */
08483 , { 230, 230, 230, 140, 230} /* UA,UA,A,G,C */
08484 , { 160, 120, 120, 160, 120} /* UA,UA,A,G,G */
08485 , { 230, 230, 230, 140, 230} /* UA,UA,A,G,U */
08486 }
08487 , {{ 280, 280, 280, 210, 280} /* UA,UA,A,U,E */
08488 , { 280, 280, 280, 180, 280} /* UA,UA,A,U,A */
08489 , { 250, 250, 250, 210, 250} /* UA,UA,A,U,C */
08490 , { 280, 280, 280, 180, 280} /* UA,UA,A,U,G */
08491 , { 250, 250, 190, 100, 190} /* UA,UA,A,U,U */
08492 }
08493 }
08494 , {{{ 280, 230, 280, 230, 250} /* UA,UA,C,E,E */
08495 , { 280, 230, 280, 230, 250} /* UA,UA,C,E,A */
08496 , { 280, 230, 280, 230, 250} /* UA,UA,C,E,C */
08497 , { 280, 230, 280, 230, 250} /* UA,UA,C,E,G */
08498 , { 280, 230, 280, 230, 250} /* UA,UA,C,E,U */
08499 }
08500 , {{ 280, 230, 280, 230, 250} /* UA,UA,C,A,E */
08501 , { 280, 230, 280, 230, 250} /* UA,UA,C,A,A */
08502 , { 230, 190, 230, 190, 200} /* UA,UA,C,A,C */
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08503      , {      230,      130,      230,      130,      200} /* UA,UA,C,A,G */
08504      , {      230,      190,      230,      190,      200} /* UA,UA,C,A,U */
08505      }
08506      , {{      280,      230,      280,      230,      250} /* UA,UA,C,C,E */
08507      , {      280,      230,      280,      230,      250} /* UA,UA,C,C,A */
08508      , {      280,      230,      280,      230,      250} /* UA,UA,C,C,C */
08509      , {      280,      230,      280,      230,      250} /* UA,UA,C,C,G */
08510      , {      280,      230,      280,      230,      250} /* UA,UA,C,C,U */
08511      }
08512      , {{      240,      190,      240,      190,      210} /* UA,UA,C,G,E */
08513      , {      240,      140,      240,      140,      210} /* UA,UA,C,G,A */
08514      , {      230,      190,      230,      190,      200} /* UA,UA,C,G,C */
08515      , {      120,      80,      120,      80,      90} /* UA,UA,C,G,G */
08516      , {      230,      190,      230,      190,      200} /* UA,UA,C,G,U */
08517      }
08518      , {{      280,      230,      280,      230,      250} /* UA,UA,C,U,E */
08519      , {      280,      230,      280,      230,      250} /* UA,UA,C,U,A */
08520      , {      250,      200,      250,      200,      220} /* UA,UA,C,U,C */
08521      , {      280,      230,      280,      230,      250} /* UA,UA,C,U,G */
08522      , {      190,      150,      190,      150,      160} /* UA,UA,C,U,U */
08523      }
08524      }
08525      , {{{      280,      230,      280,      230,      280} /* UA,UA,G,E,E */
08526      , {      280,      170,      280,      160,      280} /* UA,UA,G,E,A */
08527      , {      280,      230,      280,      120,      280} /* UA,UA,G,E,C */
08528      , {      280,      170,      280,      230,      280} /* UA,UA,G,E,G */
08529      , {      280,      230,      280,      170,      280} /* UA,UA,G,E,U */
08530      }
08531      , {{      280,      170,      280,      150,      280} /* UA,UA,G,A,E */
08532      , {      280,      170,      280,      120,      280} /* UA,UA,G,A,A */
08533      , {      230,      130,      230,      80,      230} /* UA,UA,G,A,C */
08534      , {      170,      70,      170,      150,      170} /* UA,UA,G,A,G */
08535      , {      230,      130,      230,      80,      230} /* UA,UA,G,A,U */
08536      }
08537      , {{      280,      230,      280,      120,      280} /* UA,UA,G,C,E */
08538      , {      280,      170,      280,      120,      280} /* UA,UA,G,C,A */
08539      , {      280,      230,      280,      120,      280} /* UA,UA,G,C,C */
08540      , {      280,      170,      280,      120,      280} /* UA,UA,G,C,G */
08541      , {      280,      230,      280,      120,      280} /* UA,UA,G,C,U */
08542      }
08543      , {{      230,      150,      230,      230,      230} /* UA,UA,G,G,E */
08544      , {      180,      80,      180,      160,      180} /* UA,UA,G,G,A */
08545      , {      230,      130,      230,      80,      230} /* UA,UA,G,G,C */
08546      , {      230,      150,      120,      230,      120} /* UA,UA,G,G,G */
08547      , {      230,      130,      230,      80,      230} /* UA,UA,G,G,U */
08548      }
08549      , {{      280,      200,      280,      170,      280} /* UA,UA,G,U,E */
08550      , {      280,      170,      280,      120,      280} /* UA,UA,G,U,A */
08551      , {      250,      200,      250,      90,      250} /* UA,UA,G,U,C */
08552      , {      280,      170,      280,      120,      280} /* UA,UA,G,U,G */
08553      , {      190,      90,      190,      170,      190} /* UA,UA,G,U,U */
08554      }
08555      }
08556      , {{{      280,      230,      280,      230,      250} /* UA,UA,U,E,E */
08557      , {      280,      230,      280,      230,      250} /* UA,UA,U,E,A */
08558      , {      280,      230,      280,      230,      190} /* UA,UA,U,E,C */
08559      , {      280,      230,      280,      230,      190} /* UA,UA,U,E,G */
08560      , {      280,      230,      280,      230,      190} /* UA,UA,U,E,U */
08561      }
08562      , {{      280,      230,      280,      230,      250} /* UA,UA,U,A,E */
08563      , {      280,      230,      280,      230,      250} /* UA,UA,U,A,A */
08564      , {      230,      190,      230,      190,      150} /* UA,UA,U,A,C */
08565      , {      230,      130,      230,      130,      90} /* UA,UA,U,A,G */
08566      , {      230,      190,      230,      190,      150} /* UA,UA,U,A,U */
08567      }
08568      , {{      280,      230,      280,      230,      190} /* UA,UA,U,C,E */
08569      , {      280,      230,      280,      230,      190} /* UA,UA,U,C,A */
08570      , {      280,      230,      280,      230,      190} /* UA,UA,U,C,C */
08571      , {      280,      230,      280,      230,      190} /* UA,UA,U,C,G */
08572      , {      280,      230,      280,      230,      190} /* UA,UA,U,C,U */
08573      }
08574      , {{      240,      190,      240,      190,      170} /* UA,UA,U,G,E */
08575      , {      240,      140,      240,      140,      100} /* UA,UA,U,G,A */
08576      , {      230,      190,      230,      190,      150} /* UA,UA,U,G,C */
08577      , {      170,      80,      120,      80,      170} /* UA,UA,U,G,G */
08578      , {      230,      190,      230,      190,      150} /* UA,UA,U,G,U */
08579      }
08580      , {{      280,      230,      280,      230,      190} /* UA,UA,U,U,E */
08581      , {      280,      230,      280,      230,      190} /* UA,UA,U,U,A */
08582      , {      250,      200,      250,      200,      160} /* UA,UA,U,U,C */
08583      , {      280,      230,      280,      230,      190} /* UA,UA,U,U,G */
08584      , {      190,      150,      190,      150,      110} /* UA,UA,U,U,U */
08585      }
08586      }
08587      }
08588      , {{{      370,      370,      370,      300,      340} /* UA,NN,E,E,E */
08589      , {      370,      340,      370,      300,      340} /* UA,NN,E,E,A */

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08590      , {      310,      310,      310,      270,      310} /* UA,NN,E,E,C */
08591      , {      310,      310,      310,      280,      310} /* UA,NN,E,E,G */
08592      , {      370,      370,      310,      280,      310} /* UA,NN,E,E,U */
08593      }
08594      , { {      340,      340,      340,      300,      340} /* UA,NN,E,A,E */
08595      , {      340,      340,      340,      300,      340} /* UA,NN,E,A,A */
08596      , {      310,      310,      310,      260,      310} /* UA,NN,E,A,C */
08597      , {      290,      230,      290,      200,      260} /* UA,NN,E,A,G */
08598      , {      310,      310,      310,      260,      310} /* UA,NN,E,A,U */
08599      }
08600      , { {      310,      310,      310,      270,      310} /* UA,NN,E,C,E */
08601      , {      310,      310,      310,      260,      310} /* UA,NN,E,C,A */
08602      , {      310,      310,      310,      270,      310} /* UA,NN,E,C,C */
08603      , {      310,      310,      310,      260,      310} /* UA,NN,E,C,G */
08604      , {      310,      310,      310,      270,      310} /* UA,NN,E,C,U */
08605      }
08606      , { {      370,      310,      370,      280,      340} /* UA,NN,E,G,E */
08607      , {      370,      310,      370,      280,      340} /* UA,NN,E,G,A */
08608      , {      310,      310,      310,      260,      310} /* UA,NN,E,G,C */
08609      , {      280,      200,      180,      280,      220} /* UA,NN,E,G,G */
08610      , {      310,      310,      310,      260,      310} /* UA,NN,E,G,U */
08611      }
08612      , { {      370,      370,      310,      280,      310} /* UA,NN,E,U,E */
08613      , {      310,      310,      310,      260,      310} /* UA,NN,E,U,A */
08614      , {      310,      310,      310,      270,      310} /* UA,NN,E,U,C */
08615      , {      310,      310,      310,      260,      310} /* UA,NN,E,U,G */
08616      , {      370,      370,      310,      280,      310} /* UA,NN,E,U,U */
08617      }
08618      }
08619      , { { {      370,      370,      340,      270,      340} /* UA,NN,A,E,E */
08620      , {      340,      340,      340,      250,      340} /* UA,NN,A,E,A */
08621      , {      310,      310,      310,      270,      310} /* UA,NN,A,E,C */
08622      , {      310,      310,      310,      210,      310} /* UA,NN,A,E,G */
08623      , {      370,      370,      310,      270,      310} /* UA,NN,A,E,U */
08624      }
08625      , { {      340,      340,      340,      250,      340} /* UA,NN,A,A,E */
08626      , {      340,      340,      340,      250,      340} /* UA,NN,A,A,A */
08627      , {      310,      310,      310,      210,      310} /* UA,NN,A,A,C */
08628      , {      230,      230,      230,      130,      230} /* UA,NN,A,A,G */
08629      , {      310,      310,      310,      210,      310} /* UA,NN,A,A,U */
08630      }
08631      , { {      310,      310,      310,      270,      310} /* UA,NN,A,C,E */
08632      , {      310,      310,      310,      210,      310} /* UA,NN,A,C,A */
08633      , {      310,      310,      310,      270,      310} /* UA,NN,A,C,C */
08634      , {      310,      310,      310,      210,      310} /* UA,NN,A,C,G */
08635      , {      310,      310,      310,      270,      310} /* UA,NN,A,C,U */
08636      }
08637      , { {      310,      310,      310,      210,      310} /* UA,NN,A,G,E */
08638      , {      310,      310,      310,      210,      310} /* UA,NN,A,G,A */
08639      , {      310,      310,      310,      210,      310} /* UA,NN,A,G,C */
08640      , {      210,      180,      180,      210,      180} /* UA,NN,A,G,G */
08641      , {      310,      310,      310,      210,      310} /* UA,NN,A,G,U */
08642      }
08643      , { {      370,      370,      310,      270,      310} /* UA,NN,A,U,E */
08644      , {      310,      310,      310,      210,      310} /* UA,NN,A,U,A */
08645      , {      310,      310,      310,      270,      310} /* UA,NN,A,U,C */
08646      , {      310,      310,      310,      210,      310} /* UA,NN,A,U,G */
08647      , {      370,      370,      310,      210,      310} /* UA,NN,A,U,U */
08648      }
08649      }
08650      , { { {      370,      300,      370,      300,      340} /* UA,NN,C,E,E */
08651      , {      370,      300,      370,      300,      340} /* UA,NN,C,E,A */
08652      , {      310,      260,      310,      260,      280} /* UA,NN,C,E,C */
08653      , {      310,      260,      310,      260,      280} /* UA,NN,C,E,G */
08654      , {      310,      260,      310,      260,      280} /* UA,NN,C,E,U */
08655      }
08656      , { {      340,      300,      340,      300,      310} /* UA,NN,C,A,E */
08657      , {      340,      300,      340,      300,      310} /* UA,NN,C,A,A */
08658      , {      310,      260,      310,      260,      280} /* UA,NN,C,A,C */
08659      , {      290,      180,      290,      180,      260} /* UA,NN,C,A,G */
08660      , {      310,      260,      310,      260,      280} /* UA,NN,C,A,U */
08661      }
08662      , { {      310,      260,      310,      260,      280} /* UA,NN,C,C,E */
08663      , {      310,      260,      310,      260,      280} /* UA,NN,C,C,A */
08664      , {      310,      260,      310,      260,      280} /* UA,NN,C,C,C */
08665      , {      310,      260,      310,      260,      280} /* UA,NN,C,C,G */
08666      , {      310,      260,      310,      260,      280} /* UA,NN,C,C,U */
08667      }
08668      , { {      370,      260,      370,      260,      340} /* UA,NN,C,G,E */
08669      , {      370,      260,      370,      260,      340} /* UA,NN,C,G,A */
08670      , {      310,      260,      310,      260,      280} /* UA,NN,C,G,C */
08671      , {      180,      130,      180,      130,      150} /* UA,NN,C,G,G */
08672      , {      310,      260,      310,      260,      280} /* UA,NN,C,G,U */
08673      }
08674      , { {      310,      260,      310,      260,      280} /* UA,NN,C,U,E */
08675      , {      310,      260,      310,      260,      280} /* UA,NN,C,U,A */
08676      , {      310,      260,      310,      260,      280} /* UA,NN,C,U,C */

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08677      , {      310,      260,      310,      260,      280} /* UA, NN, C, U, G */
08678      , {      310,      260,      310,      260,      280} /* UA, NN, C, U, U */
08679      }
08680      }
08681      , {{ {      340,      260,      340,      280,      340} /* UA, NN, G, E, E */
08682      , {      340,      240,      340,      280,      340} /* UA, NN, G, E, A */
08683      , {      310,      260,      310,      150,      310} /* UA, NN, G, E, C */
08684      , {      310,      200,      310,      280,      310} /* UA, NN, G, E, G */
08685      , {      310,      260,      310,      280,      310} /* UA, NN, G, E, U */
08686      }
08687      , {{ {      340,      240,      340,      200,      340} /* UA, NN, G, A, E */
08688      , {      340,      240,      340,      190,      340} /* UA, NN, G, A, A */
08689      , {      310,      200,      310,      150,      310} /* UA, NN, G, A, C */
08690      , {      230,      120,      230,      200,      230} /* UA, NN, G, A, G */
08691      , {      310,      200,      310,      150,      310} /* UA, NN, G, A, U */
08692      }
08693      , {{ {      310,      260,      310,      150,      310} /* UA, NN, G, C, E */
08694      , {      310,      200,      310,      150,      310} /* UA, NN, G, C, A */
08695      , {      310,      260,      310,      150,      310} /* UA, NN, G, C, C */
08696      , {      310,      200,      310,      150,      310} /* UA, NN, G, C, G */
08697      , {      310,      260,      310,      150,      310} /* UA, NN, G, C, U */
08698      }
08699      , {{ {      310,      200,      310,      280,      310} /* UA, NN, G, G, E */
08700      , {      310,      200,      310,      280,      310} /* UA, NN, G, G, A */
08701      , {      310,      200,      310,      150,      310} /* UA, NN, G, G, C */
08702      , {      280,      200,      180,      280,      180} /* UA, NN, G, G, G */
08703      , {      310,      200,      310,      150,      310} /* UA, NN, G, G, U */
08704      }
08705      , {{ {      310,      260,      310,      280,      310} /* UA, NN, G, U, E */
08706      , {      310,      200,      310,      150,      310} /* UA, NN, G, U, A */
08707      , {      310,      260,      310,      150,      310} /* UA, NN, G, U, C */
08708      , {      310,      200,      310,      150,      310} /* UA, NN, G, U, G */
08709      , {      310,      200,      310,      280,      310} /* UA, NN, G, U, U */
08710      }
08711      }
08712      , {{ {      370,      300,      370,      300,      320} /* UA, NN, U, E, E */
08713      , {      370,      300,      370,      300,      320} /* UA, NN, U, E, A */
08714      , {      310,      260,      310,      260,      220} /* UA, NN, U, E, C */
08715      , {      310,      260,      310,      260,      220} /* UA, NN, U, E, G */
08716      , {      310,      260,      310,      260,      220} /* UA, NN, U, E, U */
08717      }
08718      , {{ {      340,      300,      340,      300,      320} /* UA, NN, U, A, E */
08719      , {      340,      300,      340,      300,      320} /* UA, NN, U, A, A */
08720      , {      310,      260,      310,      260,      220} /* UA, NN, U, A, C */
08721      , {      290,      180,      290,      180,      140} /* UA, NN, U, A, G */
08722      , {      310,      260,      310,      260,      220} /* UA, NN, U, A, U */
08723      }
08724      , {{ {      310,      260,      310,      260,      220} /* UA, NN, U, C, E */
08725      , {      310,      260,      310,      260,      220} /* UA, NN, U, C, A */
08726      , {      310,      260,      310,      260,      220} /* UA, NN, U, C, C */
08727      , {      310,      260,      310,      260,      220} /* UA, NN, U, C, G */
08728      , {      310,      260,      310,      260,      220} /* UA, NN, U, C, U */
08729      }
08730      , {{ {      370,      260,      370,      260,      220} /* UA, NN, U, G, E */
08731      , {      370,      260,      370,      260,      220} /* UA, NN, U, G, A */
08732      , {      310,      260,      310,      260,      220} /* UA, NN, U, G, C */
08733      , {      220,      130,      180,      130,      220} /* UA, NN, U, G, G */
08734      , {      310,      260,      310,      260,      220} /* UA, NN, U, G, U */
08735      }
08736      , {{ {      310,      260,      310,      260,      220} /* UA, NN, U, U, E */
08737      , {      310,      260,      310,      260,      220} /* UA, NN, U, U, A */
08738      , {      310,      260,      310,      260,      220} /* UA, NN, U, U, C */
08739      , {      310,      260,      310,      260,      220} /* UA, NN, U, U, G */
08740      , {      310,      260,      310,      260,      220} /* UA, NN, U, U, U */
08741      }
08742      }
08743      }
08744      }
08745      , {{{ {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, E, E */
08746      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, E, A */
08747      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, E, C */
08748      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, E, G */
08749      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, E, U */
08750      }
08751      , {{ {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, A, E */
08752      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, A, A */
08753      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, A, C */
08754      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, A, G */
08755      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, A, U */
08756      }
08757      , {{ {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, C, E */
08758      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, C, A */
08759      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, C, C */
08760      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, C, G */
08761      , {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, C, U */
08762      }
08763      , {{ {      INF,      INF,      INF,      INF,      INF} /* NN, NP, E, G, E */

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08764      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,A */
08765      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,C */
08766      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,G */
08767      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,U */
08768      }
08769      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,U,E */
08770      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,U,A */
08771      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,U,C */
08772      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,U,G */
08773      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,U,U */
08774      }
08775      }
08776      , { { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,E,E */
08777      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,E,A */
08778      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,E,C */
08779      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,E,G */
08780      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,E,U */
08781      }
08782      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,A,E */
08783      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,A,A */
08784      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,A,C */
08785      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,A,G */
08786      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,A,U */
08787      }
08788      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,C,E */
08789      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,C,A */
08790      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,C,C */
08791      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,C,G */
08792      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,C,U */
08793      }
08794      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,E */
08795      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,A */
08796      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,C */
08797      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,G */
08798      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,U */
08799      }
08800      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U,E */
08801      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U,A */
08802      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U,C */
08803      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U,G */
08804      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U,U */
08805      }
08806      }
08807      , { { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,E */
08808      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,A */
08809      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,C */
08810      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,G */
08811      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,U */
08812      }
08813      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,E */
08814      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,A */
08815      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,C */
08816      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,G */
08817      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,U */
08818      }
08819      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,E */
08820      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,A */
08821      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,C */
08822      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,G */
08823      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,U */
08824      }
08825      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,E */
08826      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,A */
08827      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,C */
08828      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,G */
08829      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,U */
08830      }
08831      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U,E */
08832      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U,A */
08833      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U,C */
08834      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U,G */
08835      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U,U */
08836      }
08837      }
08838      , { { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,E */
08839      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,A */
08840      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,C */
08841      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,G */
08842      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,U */
08843      }
08844      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,E */
08845      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,A */
08846      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,C */
08847      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,G */
08848      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,U */
08849      }
08850      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,E */

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08851      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,A */
08852      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,C */
08853      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,G */
08854      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,U */
08855      }
08856      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,E */
08857      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,A */
08858      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,C */
08859      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,G */
08860      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,U */
08861      }
08862      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U,E */
08863      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U,A */
08864      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U,C */
08865      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U,G */
08866      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U,U */
08867      }
08868      }
08869      , { { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,E,E */
08870      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,E,A */
08871      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,E,C */
08872      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,E,G */
08873      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,E,U */
08874      }
08875      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,A,E */
08876      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,A,A */
08877      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,A,C */
08878      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,A,G */
08879      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,A,U */
08880      }
08881      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,C,E */
08882      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,C,A */
08883      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,C,C */
08884      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,C,G */
08885      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,C,U */
08886      }
08887      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,G,E */
08888      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,G,A */
08889      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,G,C */
08890      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,G,G */
08891      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,G,U */
08892      }
08893      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,U,E */
08894      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,U,A */
08895      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,U,C */
08896      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,U,G */
08897      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U,U,U */
08898      }
08899      }
08900      }
08901      , { { { {      310,      300,      270,      310,      290} /* NN,CG,E,E,E */
08902      , {      300,      300,      270,      270,      290} /* NN,CG,E,E,A */
08903      , {      310,      290,      250,      310,      250} /* NN,CG,E,E,C */
08904      , {      300,      300,      270,      270,      270} /* NN,CG,E,E,G */
08905      , {      300,      270,      240,      300,      240} /* NN,CG,E,E,U */
08906      }
08907      , { {      290,      270,      230,      230,      290} /* NN,CG,E,A,E */
08908      , {      290,      270,      230,      230,      290} /* NN,CG,E,A,A */
08909      , {      260,      260,      220,      220,      220} /* NN,CG,E,A,C */
08910      , {      190,      170,      190,      130,      190} /* NN,CG,E,A,G */
08911      , {      260,      260,      220,      220,      220} /* NN,CG,E,A,U */
08912      }
08913      , { {      310,      300,      270,      310,      270} /* NN,CG,E,C,E */
08914      , {      300,      300,      270,      270,      270} /* NN,CG,E,C,A */
08915      , {      310,      290,      250,      310,      250} /* NN,CG,E,C,C */
08916      , {      300,      300,      270,      270,      270} /* NN,CG,E,C,G */
08917      , {      300,      270,      240,      300,      240} /* NN,CG,E,C,U */
08918      }
08919      , { {      260,      260,      220,      220,      220} /* NN,CG,E,G,E */
08920      , {      190,      170,      190,      130,      190} /* NN,CG,E,G,A */
08921      , {      260,      260,      220,      220,      220} /* NN,CG,E,G,C */
08922      , {      210,      130,      80,      210,      210} /* NN,CG,E,G,G */
08923      , {      260,      260,      220,      220,      220} /* NN,CG,E,G,U */
08924      }
08925      , { {      300,      300,      270,      300,      270} /* NN,CG,E,U,E */
08926      , {      300,      300,      270,      270,      270} /* NN,CG,E,U,A */
08927      , {      300,      270,      240,      300,      240} /* NN,CG,E,U,C */
08928      , {      300,      300,      270,      270,      270} /* NN,CG,E,U,G */
08929      , {      240,      240,      150,      150,      150} /* NN,CG,E,U,U */
08930      }
08931      }
08932      , { { {      310,      300,      270,      310,      270} /* NN,CG,A,E,E */
08933      , {      300,      300,      270,      270,      270} /* NN,CG,A,E,A */
08934      , {      310,      290,      250,      310,      250} /* NN,CG,A,E,C */
08935      , {      300,      300,      270,      270,      270} /* NN,CG,A,E,G */
08936      , {      300,      270,      240,      300,      240} /* NN,CG,A,E,U */
08937      }

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08938 ,{{ 270, 270, 230, 230, 230} /* NN,CG,A,A,E */
08939 ,{ 270, 270, 230, 230, 230} /* NN,CG,A,A,A */
08940 ,{ 260, 260, 220, 220, 220} /* NN,CG,A,A,C */
08941 ,{ 170, 170, 130, 130, 130} /* NN,CG,A,A,G */
08942 ,{ 260, 260, 220, 220, 220} /* NN,CG,A,A,U */
08943 }
08944 ,{{ 310, 300, 270, 310, 270} /* NN,CG,A,C,E */
08945 ,{ 300, 300, 270, 270, 270} /* NN,CG,A,C,A */
08946 ,{ 310, 290, 250, 310, 250} /* NN,CG,A,C,C */
08947 ,{ 300, 300, 270, 270, 270} /* NN,CG,A,C,G */
08948 ,{ 300, 270, 240, 300, 240} /* NN,CG,A,C,U */
08949 }
08950 ,{{ 260, 260, 220, 220, 220} /* NN,CG,A,G,E */
08951 ,{ 170, 170, 130, 130, 130} /* NN,CG,A,G,A */
08952 ,{ 260, 260, 220, 220, 220} /* NN,CG,A,G,C */
08953 ,{ 210, 110, 80, 210, 80} /* NN,CG,A,G,G */
08954 ,{ 260, 260, 220, 220, 220} /* NN,CG,A,G,U */
08955 }
08956 ,{{ 300, 300, 270, 300, 270} /* NN,CG,A,U,E */
08957 ,{ 300, 300, 270, 270, 270} /* NN,CG,A,U,A */
08958 ,{ 300, 270, 240, 300, 240} /* NN,CG,A,U,C */
08959 ,{ 300, 300, 270, 270, 270} /* NN,CG,A,U,G */
08960 ,{ 240, 240, 150, 150, 150} /* NN,CG,A,U,U */
08961 }
08962 }
08963 ,{{{ 270, 270, 270, 270, 270} /* NN,CG,C,E,E */
08964 ,{ 270, 270, 270, 270, 270} /* NN,CG,C,E,A */
08965 ,{ 250, 250, 250, 250, 250} /* NN,CG,C,E,C */
08966 ,{ 270, 270, 270, 270, 270} /* NN,CG,C,E,G */
08967 ,{ 240, 240, 240, 240, 240} /* NN,CG,C,E,U */
08968 }
08969 ,{{ 230, 230, 230, 230, 230} /* NN,CG,C,A,E */
08970 ,{ 230, 230, 230, 230, 230} /* NN,CG,C,A,A */
08971 ,{ 220, 220, 220, 220, 220} /* NN,CG,C,A,C */
08972 ,{ 190, 130, 190, 130, 190} /* NN,CG,C,A,G */
08973 ,{ 220, 220, 220, 220, 220} /* NN,CG,C,A,U */
08974 }
08975 ,{{ 270, 270, 270, 270, 270} /* NN,CG,C,C,E */
08976 ,{ 270, 270, 270, 270, 270} /* NN,CG,C,C,A */
08977 ,{ 250, 250, 250, 250, 250} /* NN,CG,C,C,C */
08978 ,{ 270, 270, 270, 270, 270} /* NN,CG,C,C,G */
08979 ,{ 240, 240, 240, 240, 240} /* NN,CG,C,C,U */
08980 }
08981 ,{{ 220, 220, 220, 220, 220} /* NN,CG,C,G,E */
08982 ,{ 190, 130, 190, 130, 190} /* NN,CG,C,G,A */
08983 ,{ 220, 220, 220, 220, 220} /* NN,CG,C,G,C */
08984 ,{ 80, 80, 80, 80, 80} /* NN,CG,C,G,G */
08985 ,{ 220, 220, 220, 220, 220} /* NN,CG,C,G,U */
08986 }
08987 ,{{ 270, 270, 270, 270, 270} /* NN,CG,C,U,E */
08988 ,{ 270, 270, 270, 270, 270} /* NN,CG,C,U,A */
08989 ,{ 240, 240, 240, 240, 240} /* NN,CG,C,U,C */
08990 ,{ 270, 270, 270, 270, 270} /* NN,CG,C,U,G */
08991 ,{ 150, 150, 150, 150, 150} /* NN,CG,C,U,U */
08992 }
08993 }
08994 ,{{{ 270, 230, 270, 210, 270} /* NN,CG,G,E,E */
08995 ,{ 270, 190, 270, 140, 270} /* NN,CG,G,E,A */
08996 ,{ 250, 230, 250, 120, 250} /* NN,CG,G,E,C */
08997 ,{ 270, 190, 270, 210, 270} /* NN,CG,G,E,G */
08998 ,{ 240, 220, 240, 150, 240} /* NN,CG,G,E,U */
08999 }
09000 ,{{ 230, 150, 230, 130, 230} /* NN,CG,G,A,E */
09001 ,{ 230, 150, 230, 100, 230} /* NN,CG,G,A,A */
09002 ,{ 220, 140, 220, 90, 220} /* NN,CG,G,A,C */
09003 ,{ 130, 50, 130, 130, 130} /* NN,CG,G,A,G */
09004 ,{ 220, 140, 220, 90, 220} /* NN,CG,G,A,U */
09005 }
09006 ,{{ 270, 230, 270, 140, 270} /* NN,CG,G,C,E */
09007 ,{ 270, 190, 270, 140, 270} /* NN,CG,G,C,A */
09008 ,{ 250, 230, 250, 120, 250} /* NN,CG,G,C,C */
09009 ,{ 270, 190, 270, 140, 270} /* NN,CG,G,C,G */
09010 ,{ 240, 220, 240, 110, 240} /* NN,CG,G,C,U */
09011 }
09012 ,{{ 220, 140, 220, 210, 220} /* NN,CG,G,G,E */
09013 ,{ 130, 50, 130, 130, 130} /* NN,CG,G,G,A */
09014 ,{ 220, 140, 220, 90, 220} /* NN,CG,G,G,C */
09015 ,{ 210, 130, 80, 210, 80} /* NN,CG,G,G,G */
09016 ,{ 220, 140, 220, 90, 220} /* NN,CG,G,G,U */
09017 }
09018 ,{{ 270, 220, 270, 150, 270} /* NN,CG,G,U,E */
09019 ,{ 270, 190, 270, 140, 270} /* NN,CG,G,U,A */
09020 ,{ 240, 220, 240, 110, 240} /* NN,CG,G,U,C */
09021 ,{ 270, 190, 270, 140, 270} /* NN,CG,G,U,G */
09022 ,{ 150, 70, 150, 150, 150} /* NN,CG,G,U,U */
09023 }
09024 }
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09025 ,{{{ 290, 270, 270, 270, 290} /* NN,CG,U,E,E */
09026 ,{ 290, 270, 270, 270, 290} /* NN,CG,U,E,A */
09027 ,{ 250, 250, 250, 250, 250} /* NN,CG,U,E,C */
09028 ,{ 270, 270, 270, 270, 270} /* NN,CG,U,E,G */
09029 ,{ 240, 240, 240, 240, 240} /* NN,CG,U,E,U */
09030 }
09031 ,{{{ 290, 230, 230, 230, 290} /* NN,CG,U,A,E */
09032 ,{ 290, 230, 230, 230, 290} /* NN,CG,U,A,A */
09033 ,{ 220, 220, 220, 220, 220} /* NN,CG,U,A,C */
09034 ,{ 190, 130, 190, 130, 130} /* NN,CG,U,A,G */
09035 ,{ 220, 220, 220, 220, 220} /* NN,CG,U,A,U */
09036 }
09037 ,{{{ 270, 270, 270, 270, 270} /* NN,CG,U,C,E */
09038 ,{ 270, 270, 270, 270, 270} /* NN,CG,U,C,A */
09039 ,{ 250, 250, 250, 250, 250} /* NN,CG,U,C,C */
09040 ,{ 270, 270, 270, 270, 270} /* NN,CG,U,C,G */
09041 ,{ 240, 240, 240, 240, 240} /* NN,CG,U,C,U */
09042 }
09043 ,{{{ 220, 220, 220, 220, 220} /* NN,CG,U,G,E */
09044 ,{ 190, 130, 190, 130, 130} /* NN,CG,U,G,A */
09045 ,{ 220, 220, 220, 220, 220} /* NN,CG,U,G,C */
09046 ,{ 210, 80, 80, 80, 210} /* NN,CG,U,G,G */
09047 ,{ 220, 220, 220, 220, 220} /* NN,CG,U,G,U */
09048 }
09049 ,{{{ 270, 270, 270, 270, 270} /* NN,CG,U,U,E */
09050 ,{ 270, 270, 270, 270, 270} /* NN,CG,U,U,A */
09051 ,{ 240, 240, 240, 240, 240} /* NN,CG,U,U,C */
09052 ,{ 270, 270, 270, 270, 270} /* NN,CG,U,U,G */
09053 ,{ 150, 150, 150, 150, 150} /* NN,CG,U,U,U */
09054 }
09055 }
09056 }
09057 ,{{{ 300, 280, 240, 280, 300} /* NN,GC,E,E,E */
09058 ,{ 300, 280, 240, 240, 300} /* NN,GC,E,E,A */
09059 ,{ 280, 260, 220, 280, 220} /* NN,GC,E,E,C */
09060 ,{ 250, 250, 210, 210, 210} /* NN,GC,E,E,G */
09061 ,{ 280, 250, 220, 280, 220} /* NN,GC,E,E,U */
09062 }
09063 ,{{{ 300, 280, 240, 240, 300} /* NN,GC,E,A,E */
09064 ,{ 300, 280, 240, 240, 300} /* NN,GC,E,A,A */
09065 ,{ 250, 250, 220, 220, 220} /* NN,GC,E,A,C */
09066 ,{ 100, 70, 100, 40, 100} /* NN,GC,E,A,G */
09067 ,{ 250, 250, 220, 220, 220} /* NN,GC,E,A,U */
09068 }
09069 ,{{{ 280, 250, 220, 280, 220} /* NN,GC,E,C,E */
09070 ,{ 250, 250, 210, 210, 210} /* NN,GC,E,C,A */
09071 ,{ 280, 250, 220, 280, 220} /* NN,GC,E,C,C */
09072 ,{ 250, 250, 210, 210, 210} /* NN,GC,E,C,G */
09073 ,{ 280, 250, 220, 280, 220} /* NN,GC,E,C,U */
09074 }
09075 ,{{{ 250, 250, 220, 220, 220} /* NN,GC,E,G,E */
09076 ,{ 160, 140, 160, 100, 160} /* NN,GC,E,G,A */
09077 ,{ 250, 250, 220, 220, 220} /* NN,GC,E,G,C */
09078 ,{ 210, 130, 80, 210, 210} /* NN,GC,E,G,G */
09079 ,{ 250, 250, 220, 220, 220} /* NN,GC,E,G,U */
09080 }
09081 ,{{{ 280, 260, 220, 280, 220} /* NN,GC,E,U,E */
09082 ,{ 250, 250, 210, 210, 210} /* NN,GC,E,U,A */
09083 ,{ 280, 260, 220, 280, 220} /* NN,GC,E,U,C */
09084 ,{ 250, 250, 210, 210, 210} /* NN,GC,E,U,G */
09085 ,{ 240, 240, 140, 140, 140} /* NN,GC,E,U,U */
09086 }
09087 }
09088 ,{{{ 280, 280, 240, 280, 240} /* NN,GC,A,E,E */
09089 ,{ 280, 280, 240, 240, 240} /* NN,GC,A,E,A */
09090 ,{ 280, 260, 220, 280, 220} /* NN,GC,A,E,C */
09091 ,{ 250, 250, 210, 210, 210} /* NN,GC,A,E,G */
09092 ,{ 280, 250, 220, 280, 220} /* NN,GC,A,E,U */
09093 }
09094 ,{{{ 280, 280, 240, 240, 240} /* NN,GC,A,A,E */
09095 ,{ 280, 280, 240, 240, 240} /* NN,GC,A,A,A */
09096 ,{ 250, 250, 220, 220, 220} /* NN,GC,A,A,C */
09097 ,{ 70, 70, 40, 40, 40} /* NN,GC,A,A,G */
09098 ,{ 250, 250, 220, 220, 220} /* NN,GC,A,A,U */
09099 }
09100 ,{{{ 280, 250, 220, 280, 220} /* NN,GC,A,C,E */
09101 ,{ 250, 250, 210, 210, 210} /* NN,GC,A,C,A */
09102 ,{ 280, 250, 220, 280, 220} /* NN,GC,A,C,C */
09103 ,{ 250, 250, 210, 210, 210} /* NN,GC,A,C,G */
09104 ,{ 280, 250, 220, 280, 220} /* NN,GC,A,C,U */
09105 }
09106 ,{{{ 250, 250, 220, 220, 220} /* NN,GC,A,G,E */
09107 ,{ 140, 140, 100, 100, 100} /* NN,GC,A,G,A */
09108 ,{ 250, 250, 220, 220, 220} /* NN,GC,A,G,C */
09109 ,{ 210, 110, 80, 210, 80} /* NN,GC,A,G,G */
09110 ,{ 250, 250, 220, 220, 220} /* NN,GC,A,G,U */
09111 }

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09112 ,{{ 280, 260, 220, 280, 220} /* NN,GC,A,U,E */
09113 ,{ 250, 250, 210, 210, 210} /* NN,GC,A,U,A */
09114 ,{ 280, 260, 220, 280, 220} /* NN,GC,A,U,C */
09115 ,{ 250, 250, 210, 210, 210} /* NN,GC,A,U,G */
09116 ,{ 240, 240, 140, 140, 140} /* NN,GC,A,U,U */
09117 }
09118
09119 ,{{{ 240, 240, 240, 240, 240} /* NN,GC,C,E,E */
09120 ,{ 240, 240, 240, 240, 240} /* NN,GC,C,E,A */
09121 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,E,C */
09122 ,{ 210, 210, 210, 210, 210} /* NN,GC,C,E,G */
09123 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,E,U */
09124 }
09125 ,{{{ 240, 240, 240, 240, 240} /* NN,GC,C,A,E */
09126 ,{ 240, 240, 240, 240, 240} /* NN,GC,C,A,A */
09127 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,A,C */
09128 ,{ 100, 40, 100, 40, 100} /* NN,GC,C,A,G */
09129 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,A,U */
09130 }
09131 ,{{{ 220, 220, 220, 220, 220} /* NN,GC,C,C,E */
09132 ,{ 210, 210, 210, 210, 210} /* NN,GC,C,C,A */
09133 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,C,C */
09134 ,{ 210, 210, 210, 210, 210} /* NN,GC,C,C,G */
09135 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,C,U */
09136 }
09137 ,{{{ 220, 220, 220, 220, 220} /* NN,GC,C,G,E */
09138 ,{ 160, 100, 160, 100, 160} /* NN,GC,C,G,A */
09139 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,G,C */
09140 ,{ 80, 80, 80, 80, 80} /* NN,GC,C,G,G */
09141 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,G,U */
09142 }
09143 ,{{{ 220, 220, 220, 220, 220} /* NN,GC,C,U,E */
09144 ,{ 210, 210, 210, 210, 210} /* NN,GC,C,U,A */
09145 ,{ 220, 220, 220, 220, 220} /* NN,GC,C,U,C */
09146 ,{ 210, 210, 210, 210, 210} /* NN,GC,C,U,G */
09147 ,{ 140, 140, 140, 140, 140} /* NN,GC,C,U,U */
09148 }
09149 }
09150 ,{{{ 240, 200, 240, 210, 240} /* NN,GC,G,E,E */
09151 ,{ 240, 160, 240, 110, 240} /* NN,GC,G,E,A */
09152 ,{ 220, 200, 220, 90, 220} /* NN,GC,G,E,C */
09153 ,{ 210, 130, 210, 210, 210} /* NN,GC,G,E,G */
09154 ,{ 220, 200, 220, 140, 220} /* NN,GC,G,E,U */
09155 }
09156 ,{{{ 240, 160, 240, 110, 240} /* NN,GC,G,A,E */
09157 ,{ 240, 160, 240, 110, 240} /* NN,GC,G,A,A */
09158 ,{ 220, 140, 220, 90, 220} /* NN,GC,G,A,C */
09159 ,{ 40, -40, 40, 40, 40} /* NN,GC,G,A,G */
09160 ,{ 220, 140, 220, 90, 220} /* NN,GC,G,A,U */
09161 }
09162 ,{{{ 220, 200, 220, 90, 220} /* NN,GC,G,C,E */
09163 ,{ 210, 130, 210, 80, 210} /* NN,GC,G,C,A */
09164 ,{ 220, 200, 220, 90, 220} /* NN,GC,G,C,C */
09165 ,{ 210, 130, 210, 80, 210} /* NN,GC,G,C,G */
09166 ,{ 220, 200, 220, 90, 220} /* NN,GC,G,C,U */
09167 }
09168 ,{{{ 220, 140, 220, 210, 220} /* NN,GC,G,G,E */
09169 ,{ 100, 20, 100, 100, 100} /* NN,GC,G,G,A */
09170 ,{ 220, 140, 220, 90, 220} /* NN,GC,G,G,C */
09171 ,{ 210, 130, 80, 210, 80} /* NN,GC,G,G,G */
09172 ,{ 220, 140, 220, 90, 220} /* NN,GC,G,G,U */
09173 }
09174 ,{{{ 220, 200, 220, 140, 220} /* NN,GC,G,U,E */
09175 ,{ 210, 130, 210, 80, 210} /* NN,GC,G,U,A */
09176 ,{ 220, 200, 220, 90, 220} /* NN,GC,G,U,C */
09177 ,{ 210, 130, 210, 80, 210} /* NN,GC,G,U,G */
09178 ,{ 140, 90, 140, 140, 140} /* NN,GC,G,U,U */
09179 }
09180
09181 ,{{{ 300, 240, 240, 240, 300} /* NN,GC,U,E,E */
09182 ,{ 300, 240, 240, 240, 300} /* NN,GC,U,E,A */
09183 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,E,C */
09184 ,{ 210, 210, 210, 210, 210} /* NN,GC,U,E,G */
09185 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,E,U */
09186 }
09187 ,{{{ 300, 240, 240, 240, 300} /* NN,GC,U,A,E */
09188 ,{ 300, 240, 240, 240, 300} /* NN,GC,U,A,A */
09189 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,A,C */
09190 ,{ 100, 40, 100, 40, 50} /* NN,GC,U,A,G */
09191 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,A,U */
09192 }
09193 ,{{{ 220, 220, 220, 220, 220} /* NN,GC,U,C,E */
09194 ,{ 210, 210, 210, 210, 210} /* NN,GC,U,C,A */
09195 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,C,C */
09196 ,{ 210, 210, 210, 210, 210} /* NN,GC,U,C,G */
09197 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,C,U */
09198 }

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09199 ,{{ 220, 220, 220, 220, 220} /* NN,GC,U,G,E */
09200 ,{ 160, 100, 160, 100, 140} /* NN,GC,U,G,A */
09201 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,G,C */
09202 ,{ 210, 80, 80, 80, 210} /* NN,GC,U,G,G */
09203 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,G,U */
09204 }
09205 ,{{ 220, 220, 220, 220, 220} /* NN,GC,U,U,E */
09206 ,{ 210, 210, 210, 210, 210} /* NN,GC,U,U,A */
09207 ,{ 220, 220, 220, 220, 220} /* NN,GC,U,U,C */
09208 ,{ 210, 210, 210, 210, 210} /* NN,GC,U,U,G */
09209 ,{ 140, 140, 140, 140, 140} /* NN,GC,U,U,U */
09210 }
09211 }
09212 }
09213 ,{{{ 430, 430, 370, 400, 430} /* NN,GU,E,E,E */
09214 ,{ 430, 410, 370, 370, 430} /* NN,GU,E,E,A */
09215 ,{ 400, 370, 340, 400, 340} /* NN,GU,E,E,C */
09216 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,E,G */
09217 ,{ 430, 430, 340, 400, 340} /* NN,GU,E,E,U */
09218 }
09219 ,{{ 430, 410, 370, 370, 430} /* NN,GU,E,A,E */
09220 ,{ 430, 410, 370, 370, 430} /* NN,GU,E,A,A */
09221 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,A,C */
09222 ,{ 320, 290, 320, 260, 320} /* NN,GU,E,A,G */
09223 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,A,U */
09224 }
09225 ,{{ 400, 370, 340, 400, 340} /* NN,GU,E,C,E */
09226 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,C,A */
09227 ,{ 400, 370, 340, 400, 340} /* NN,GU,E,C,C */
09228 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,C,G */
09229 ,{ 400, 370, 340, 400, 340} /* NN,GU,E,C,U */
09230 }
09231 ,{{ 370, 370, 360, 340, 360} /* NN,GU,E,G,E */
09232 ,{ 360, 360, 360, 300, 360} /* NN,GU,E,G,A */
09233 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,G,C */
09234 ,{ 340, 260, 210, 340, 340} /* NN,GU,E,G,G */
09235 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,G,U */
09236 }
09237 ,{{ 430, 430, 340, 400, 340} /* NN,GU,E,U,E */
09238 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,U,A */
09239 ,{ 400, 370, 340, 400, 340} /* NN,GU,E,U,C */
09240 ,{ 370, 370, 340, 340, 340} /* NN,GU,E,U,G */
09241 ,{ 430, 430, 340, 340, 340} /* NN,GU,E,U,U */
09242 }
09243 }
09244 ,{{{ 430, 430, 370, 400, 370} /* NN,GU,A,E,E */
09245 ,{ 410, 410, 370, 370, 370} /* NN,GU,A,E,A */
09246 ,{ 400, 370, 340, 400, 340} /* NN,GU,A,E,C */
09247 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,E,G */
09248 ,{ 430, 430, 340, 400, 340} /* NN,GU,A,E,U */
09249 }
09250 ,{{ 410, 410, 370, 370, 370} /* NN,GU,A,A,E */
09251 ,{ 410, 410, 370, 370, 370} /* NN,GU,A,A,A */
09252 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,A,C */
09253 ,{ 290, 290, 260, 260, 260} /* NN,GU,A,A,G */
09254 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,A,U */
09255 }
09256 ,{{ 400, 370, 340, 400, 340} /* NN,GU,A,C,E */
09257 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,C,A */
09258 ,{ 400, 370, 340, 400, 340} /* NN,GU,A,C,C */
09259 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,C,G */
09260 ,{ 400, 370, 340, 400, 340} /* NN,GU,A,C,U */
09261 }
09262 ,{{ 370, 370, 340, 340, 340} /* NN,GU,A,G,E */
09263 ,{ 360, 360, 300, 300, 300} /* NN,GU,A,G,A */
09264 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,G,C */
09265 ,{ 340, 240, 210, 340, 210} /* NN,GU,A,G,G */
09266 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,G,U */
09267 }
09268 ,{{ 430, 430, 340, 400, 340} /* NN,GU,A,U,E */
09269 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,U,A */
09270 ,{ 400, 370, 340, 400, 340} /* NN,GU,A,U,C */
09271 ,{ 370, 370, 340, 340, 340} /* NN,GU,A,U,G */
09272 ,{ 430, 430, 340, 340, 340} /* NN,GU,A,U,U */
09273 }
09274 }
09275 ,{{{ 370, 370, 370, 370, 370} /* NN,GU,C,E,E */
09276 ,{ 370, 370, 370, 370, 370} /* NN,GU,C,E,A */
09277 ,{ 340, 340, 340, 340, 340} /* NN,GU,C,E,C */
09278 ,{ 340, 340, 340, 340, 340} /* NN,GU,C,E,G */
09279 ,{ 340, 340, 340, 340, 340} /* NN,GU,C,E,U */
09280 }
09281 ,{{ 370, 370, 370, 370, 370} /* NN,GU,C,A,E */
09282 ,{ 370, 370, 370, 370, 370} /* NN,GU,C,A,A */
09283 ,{ 340, 340, 340, 340, 340} /* NN,GU,C,A,C */
09284 ,{ 320, 260, 320, 260, 320} /* NN,GU,C,A,G */
09285 ,{ 340, 340, 340, 340, 340} /* NN,GU,C,A,U */

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09286     }
09287     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, C, E */
09288     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, C, A */
09289     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, C, C */
09290     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, C, G */
09291     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, C, U */
09292     }
09293     ,{{    360,    340,    360,    340,    360} /* NN, GU, C, G, E */
09294     ,{{    360,    300,    360,    300,    360} /* NN, GU, C, G, A */
09295     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, G, C */
09296     ,{{    210,    210,    210,    210,    210} /* NN, GU, C, G, G */
09297     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, G, U */
09298     }
09299     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, U, E */
09300     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, U, A */
09301     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, U, C */
09302     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, U, G */
09303     ,{{    340,    340,    340,    340,    340} /* NN, GU, C, U, U */
09304     }
09305     }
09306     ,{{{    370,    320,    370,    340,    370} /* NN, GU, G, E, E */
09307     ,{{    370,    290,    370,    300,    370} /* NN, GU, G, E, A */
09308     ,{{    340,    320,    340,    210,    340} /* NN, GU, G, E, C */
09309     ,{{    340,    260,    340,    340,    340} /* NN, GU, G, E, G */
09310     ,{{    340,    320,    340,    340,    340} /* NN, GU, G, E, U */
09311     }
09312     ,{{{    370,    290,    370,    260,    370} /* NN, GU, G, A, E */
09313     ,{{    370,    290,    370,    240,    370} /* NN, GU, G, A, A */
09314     ,{{    340,    260,    340,    210,    340} /* NN, GU, G, A, C */
09315     ,{{    260,    180,    260,    260,    260} /* NN, GU, G, A, G */
09316     ,{{    340,    260,    340,    210,    340} /* NN, GU, G, A, U */
09317     }
09318     ,{{{    340,    320,    340,    210,    340} /* NN, GU, G, C, E */
09319     ,{{    340,    260,    340,    210,    340} /* NN, GU, G, C, A */
09320     ,{{    340,    320,    340,    210,    340} /* NN, GU, G, C, C */
09321     ,{{    340,    260,    340,    210,    340} /* NN, GU, G, C, G */
09322     ,{{    340,    320,    340,    210,    340} /* NN, GU, G, C, U */
09323     }
09324     ,{{{    340,    260,    340,    340,    340} /* NN, GU, G, G, E */
09325     ,{{    300,    220,    300,    300,    300} /* NN, GU, G, G, A */
09326     ,{{    340,    260,    340,    210,    340} /* NN, GU, G, G, C */
09327     ,{{    340,    260,    210,    340,    210} /* NN, GU, G, G, G */
09328     ,{{    340,    260,    340,    210,    340} /* NN, GU, G, G, U */
09329     }
09330     ,{{{    340,    320,    340,    340,    340} /* NN, GU, G, U, E */
09331     ,{{    340,    260,    340,    210,    340} /* NN, GU, G, U, A */
09332     ,{{    340,    320,    340,    210,    340} /* NN, GU, G, U, C */
09333     ,{{    340,    260,    340,    210,    340} /* NN, GU, G, U, G */
09334     ,{{    340,    260,    340,    340,    340} /* NN, GU, G, U, U */
09335     }
09336     }
09337     ,{{{    430,    370,    370,    370,    430} /* NN, GU, U, E, E */
09338     ,{{    430,    370,    370,    370,    430} /* NN, GU, U, E, A */
09339     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, E, C */
09340     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, E, G */
09341     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, E, U */
09342     }
09343     ,{{{    430,    370,    370,    370,    430} /* NN, GU, U, A, E */
09344     ,{{    430,    370,    370,    370,    430} /* NN, GU, U, A, A */
09345     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, A, C */
09346     ,{{    320,    260,    320,    260,    260} /* NN, GU, U, A, G */
09347     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, A, U */
09348     }
09349     ,{{{    340,    340,    340,    340,    340} /* NN, GU, U, C, E */
09350     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, C, A */
09351     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, C, C */
09352     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, C, G */
09353     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, C, U */
09354     }
09355     ,{{{    360,    340,    360,    340,    340} /* NN, GU, U, G, E */
09356     ,{{    360,    300,    360,    300,    300} /* NN, GU, U, G, A */
09357     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, G, C */
09358     ,{{    340,    210,    210,    210,    340} /* NN, GU, U, G, G */
09359     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, G, U */
09360     }
09361     ,{{{    340,    340,    340,    340,    340} /* NN, GU, U, U, E */
09362     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, U, A */
09363     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, U, C */
09364     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, U, G */
09365     ,{{    340,    340,    340,    340,    340} /* NN, GU, U, U, U */
09366     }
09367     }
09368     }
09369     ,{{{    400,    400,    400,    370,    400} /* NN, UG, E, E, E */
09370     ,{{    400,    370,    400,    360,    400} /* NN, UG, E, E, A */
09371     ,{{    370,    340,    310,    370,    310} /* NN, UG, E, E, C */
09372     ,{{    340,    340,    310,    310,    310} /* NN, UG, E, E, G */
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09373      , {      400,      400,      310,      370,      310} /* NN,UG,E,E,U */
09374      }
09375      , { {      360,      360,      310,      360,      330} /* NN,UG,E,A,E */
09376      , {      360,      360,      270,      360,      330} /* NN,UG,E,A,A */
09377      , {      340,      340,      310,      310,      310} /* NN,UG,E,A,C */
09378      , {      230,      220,      230,      170,      230} /* NN,UG,E,A,G */
09379      , {      340,      340,      310,      310,      310} /* NN,UG,E,A,U */
09380      }
09381      , { {      370,      340,      310,      370,      310} /* NN,UG,E,C,E */
09382      , {      340,      340,      310,      310,      310} /* NN,UG,E,C,A */
09383      , {      370,      340,      310,      370,      310} /* NN,UG,E,C,C */
09384      , {      340,      340,      310,      310,      310} /* NN,UG,E,C,G */
09385      , {      370,      340,      310,      370,      310} /* NN,UG,E,C,U */
09386      }
09387      , { {      400,      370,      400,      340,      400} /* NN,UG,E,G,E */
09388      , {      400,      370,      400,      340,      400} /* NN,UG,E,G,A */
09389      , {      340,      340,      310,      310,      310} /* NN,UG,E,G,C */
09390      , {      310,      230,      180,      310,      310} /* NN,UG,E,G,G */
09391      , {      340,      340,      310,      310,      310} /* NN,UG,E,G,U */
09392      }
09393      , { {      400,      400,      310,      370,      310} /* NN,UG,E,U,E */
09394      , {      340,      340,      310,      310,      310} /* NN,UG,E,U,A */
09395      , {      370,      340,      310,      370,      310} /* NN,UG,E,U,C */
09396      , {      340,      340,      310,      310,      310} /* NN,UG,E,U,G */
09397      , {      400,      400,      310,      310,      310} /* NN,UG,E,U,U */
09398      }
09399      }
09400      , { { {      400,      400,      340,      370,      340} /* NN,UG,A,E,E */
09401      , {      370,      370,      340,      360,      340} /* NN,UG,A,E,A */
09402      , {      370,      340,      310,      370,      310} /* NN,UG,A,E,C */
09403      , {      340,      340,      310,      310,      310} /* NN,UG,A,E,G */
09404      , {      400,      400,      310,      370,      310} /* NN,UG,A,E,U */
09405      }
09406      , { {      360,      360,      310,      360,      310} /* NN,UG,A,A,E */
09407      , {      360,      360,      270,      360,      270} /* NN,UG,A,A,A */
09408      , {      340,      340,      310,      310,      310} /* NN,UG,A,A,C */
09409      , {      220,      220,      170,      170,      170} /* NN,UG,A,A,G */
09410      , {      340,      340,      310,      310,      310} /* NN,UG,A,A,U */
09411      }
09412      , { {      370,      340,      310,      370,      310} /* NN,UG,A,C,E */
09413      , {      340,      340,      310,      310,      310} /* NN,UG,A,C,A */
09414      , {      370,      340,      310,      370,      310} /* NN,UG,A,C,C */
09415      , {      340,      340,      310,      310,      310} /* NN,UG,A,C,G */
09416      , {      370,      340,      310,      370,      310} /* NN,UG,A,C,U */
09417      }
09418      , { {      370,      370,      340,      340,      340} /* NN,UG,A,G,E */
09419      , {      370,      370,      340,      340,      340} /* NN,UG,A,G,A */
09420      , {      340,      340,      310,      310,      310} /* NN,UG,A,G,C */
09421      , {      310,      210,      180,      310,      180} /* NN,UG,A,G,G */
09422      , {      340,      340,      310,      310,      310} /* NN,UG,A,G,U */
09423      }
09424      , { {      400,      400,      310,      370,      310} /* NN,UG,A,U,E */
09425      , {      340,      340,      310,      310,      310} /* NN,UG,A,U,A */
09426      , {      370,      340,      310,      370,      310} /* NN,UG,A,U,C */
09427      , {      340,      340,      310,      310,      310} /* NN,UG,A,U,G */
09428      , {      400,      400,      310,      310,      310} /* NN,UG,A,U,U */
09429      }
09430      }
09431      , { { {      400,      340,      400,      340,      400} /* NN,UG,C,E,E */
09432      , {      400,      340,      400,      340,      400} /* NN,UG,C,E,A */
09433      , {      310,      310,      310,      310,      310} /* NN,UG,C,E,C */
09434      , {      310,      310,      310,      310,      310} /* NN,UG,C,E,G */
09435      , {      310,      310,      310,      310,      310} /* NN,UG,C,E,U */
09436      }
09437      , { {      310,      310,      310,      310,      310} /* NN,UG,C,A,E */
09438      , {      270,      270,      270,      270,      270} /* NN,UG,C,A,A */
09439      , {      310,      310,      310,      310,      310} /* NN,UG,C,A,C */
09440      , {      230,      170,      230,      170,      230} /* NN,UG,C,A,G */
09441      , {      310,      310,      310,      310,      310} /* NN,UG,C,A,U */
09442      }
09443      , { {      310,      310,      310,      310,      310} /* NN,UG,C,C,E */
09444      , {      310,      310,      310,      310,      310} /* NN,UG,C,C,A */
09445      , {      310,      310,      310,      310,      310} /* NN,UG,C,C,C */
09446      , {      310,      310,      310,      310,      310} /* NN,UG,C,C,G */
09447      , {      310,      310,      310,      310,      310} /* NN,UG,C,C,U */
09448      }
09449      , { {      400,      340,      400,      340,      400} /* NN,UG,C,G,E */
09450      , {      400,      340,      400,      340,      400} /* NN,UG,C,G,A */
09451      , {      310,      310,      310,      310,      310} /* NN,UG,C,G,C */
09452      , {      180,      180,      180,      180,      180} /* NN,UG,C,G,G */
09453      , {      310,      310,      310,      310,      310} /* NN,UG,C,G,U */
09454      }
09455      , { {      310,      310,      310,      310,      310} /* NN,UG,C,U,E */
09456      , {      310,      310,      310,      310,      310} /* NN,UG,C,U,A */
09457      , {      310,      310,      310,      310,      310} /* NN,UG,C,U,C */
09458      , {      310,      310,      310,      310,      310} /* NN,UG,C,U,G */
09459      , {      310,      310,      310,      310,      310} /* NN,UG,C,U,U */

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09460     }
09461     }
09462     ,{{{ 340, 290, 340, 340, 340} /* NN,UG,G,E,E */
09463     ,{ 340, 260, 340, 340, 340} /* NN,UG,G,E,A */
09464     ,{ 310, 290, 310, 180, 310} /* NN,UG,G,E,C */
09465     ,{ 310, 230, 310, 310, 310} /* NN,UG,G,E,G */
09466     ,{ 310, 290, 310, 310, 310} /* NN,UG,G,E,U */
09467     }
09468     ,{{{ 310, 230, 310, 180, 310} /* NN,UG,G,A,E */
09469     ,{ 270, 190, 270, 140, 270} /* NN,UG,G,A,A */
09470     ,{ 310, 230, 310, 180, 310} /* NN,UG,G,A,C */
09471     ,{ 170, 40, 170, 170, 170} /* NN,UG,G,A,G */
09472     ,{ 310, 230, 310, 180, 310} /* NN,UG,G,A,U */
09473     }
09474     ,{{{ 310, 290, 310, 180, 310} /* NN,UG,G,C,E */
09475     ,{ 310, 230, 310, 180, 310} /* NN,UG,G,C,A */
09476     ,{ 310, 290, 310, 180, 310} /* NN,UG,G,C,C */
09477     ,{ 310, 230, 310, 180, 310} /* NN,UG,G,C,G */
09478     ,{ 310, 290, 310, 180, 310} /* NN,UG,G,C,U */
09479     }
09480     ,{{{ 340, 260, 340, 340, 340} /* NN,UG,G,G,E */
09481     ,{ 340, 260, 340, 340, 340} /* NN,UG,G,G,A */
09482     ,{ 310, 230, 310, 180, 310} /* NN,UG,G,G,C */
09483     ,{ 310, 230, 180, 310, 180} /* NN,UG,G,G,G */
09484     ,{ 310, 230, 310, 180, 310} /* NN,UG,G,G,U */
09485     }
09486     ,{{{ 310, 290, 310, 310, 310} /* NN,UG,G,U,E */
09487     ,{ 310, 230, 310, 180, 310} /* NN,UG,G,U,A */
09488     ,{ 310, 290, 310, 180, 310} /* NN,UG,G,U,C */
09489     ,{ 310, 230, 310, 180, 310} /* NN,UG,G,U,G */
09490     ,{ 310, 230, 310, 310, 310} /* NN,UG,G,U,U */
09491     }
09492     }
09493     ,{{{ 400, 340, 400, 340, 340} /* NN,UG,U,E,E */
09494     ,{ 400, 340, 400, 340, 340} /* NN,UG,U,E,A */
09495     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,E,C */
09496     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,E,G */
09497     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,E,U */
09498     }
09499     ,{{{ 330, 310, 310, 310, 330} /* NN,UG,U,A,E */
09500     ,{ 330, 270, 270, 270, 330} /* NN,UG,U,A,A */
09501     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,A,C */
09502     ,{ 230, 170, 230, 170, 170} /* NN,UG,U,A,G */
09503     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,A,U */
09504     }
09505     ,{{{ 310, 310, 310, 310, 310} /* NN,UG,U,C,E */
09506     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,C,A */
09507     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,C,C */
09508     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,C,G */
09509     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,C,U */
09510     }
09511     ,{{{ 400, 340, 400, 340, 340} /* NN,UG,U,G,E */
09512     ,{ 400, 340, 400, 340, 340} /* NN,UG,U,G,A */
09513     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,G,C */
09514     ,{ 310, 180, 180, 180, 310} /* NN,UG,U,G,G */
09515     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,G,U */
09516     }
09517     ,{{{ 310, 310, 310, 310, 310} /* NN,UG,U,U,E */
09518     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,U,A */
09519     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,U,C */
09520     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,U,G */
09521     ,{ 310, 310, 310, 310, 310} /* NN,UG,U,U,U */
09522     }
09523     }
09524     }
09525     ,{{{ 370, 340, 310, 350, 370} /* NN,AU,E,E,E */
09526     ,{ 370, 340, 310, 310, 370} /* NN,AU,E,E,A */
09527     ,{ 350, 320, 290, 350, 290} /* NN,AU,E,E,C */
09528     ,{ 330, 330, 290, 290, 290} /* NN,AU,E,E,G */
09529     ,{ 350, 320, 290, 350, 290} /* NN,AU,E,E,U */
09530     }
09531     ,{{{ 370, 340, 310, 310, 370} /* NN,AU,E,A,E */
09532     ,{ 370, 340, 310, 310, 370} /* NN,AU,E,A,A */
09533     ,{ 320, 320, 280, 280, 280} /* NN,AU,E,A,C */
09534     ,{ 240, 220, 240, 180, 240} /* NN,AU,E,A,G */
09535     ,{ 320, 320, 280, 280, 280} /* NN,AU,E,A,U */
09536     }
09537     ,{{{ 350, 330, 290, 350, 290} /* NN,AU,E,C,E */
09538     ,{ 330, 330, 290, 290, 290} /* NN,AU,E,C,A */
09539     ,{ 350, 320, 290, 350, 290} /* NN,AU,E,C,C */
09540     ,{ 330, 330, 290, 290, 290} /* NN,AU,E,C,G */
09541     ,{ 350, 320, 290, 350, 290} /* NN,AU,E,C,U */
09542     }
09543     ,{{{ 320, 320, 310, 280, 310} /* NN,AU,E,G,E */
09544     ,{ 310, 290, 310, 250, 310} /* NN,AU,E,G,A */
09545     ,{ 320, 320, 280, 280, 280} /* NN,AU,E,G,C */
09546     ,{ 260, 180, 130, 260, 260} /* NN,AU,E,G,G */
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09547      , {      320,      320,      280,      280,      280} /* NN,AU,E,G,U */
09548      }
09549      , {{      350,      330,      290,      350,      290} /* NN,AU,E,U,E */
09550      , {      330,      330,      290,      290,      290} /* NN,AU,E,U,A */
09551      , {      350,      320,      290,      350,      290} /* NN,AU,E,U,C */
09552      , {      330,      330,      290,      290,      290} /* NN,AU,E,U,G */
09553      , {      290,      290,      200,      200,      200} /* NN,AU,E,U,U */
09554      }
09555      }
09556      , {{{      350,      340,      310,      350,      310} /* NN,AU,A,E,E */
09557      , {      340,      340,      310,      310,      310} /* NN,AU,A,E,A */
09558      , {      350,      320,      290,      350,      290} /* NN,AU,A,E,C */
09559      , {      330,      330,      290,      290,      290} /* NN,AU,A,E,G */
09560      , {      350,      320,      290,      350,      290} /* NN,AU,A,E,U */
09561      }
09562      , {{      340,      340,      310,      310,      310} /* NN,AU,A,A,E */
09563      , {      340,      340,      310,      310,      310} /* NN,AU,A,A,A */
09564      , {      320,      320,      280,      280,      280} /* NN,AU,A,A,C */
09565      , {      220,      220,      180,      180,      180} /* NN,AU,A,A,G */
09566      , {      320,      320,      280,      280,      280} /* NN,AU,A,A,U */
09567      }
09568      , {{{      350,      330,      290,      350,      290} /* NN,AU,A,C,E */
09569      , {      330,      330,      290,      290,      290} /* NN,AU,A,C,A */
09570      , {      350,      320,      290,      350,      290} /* NN,AU,A,C,C */
09571      , {      330,      330,      290,      290,      290} /* NN,AU,A,C,G */
09572      , {      350,      320,      290,      350,      290} /* NN,AU,A,C,U */
09573      }
09574      , {{{      320,      320,      280,      280,      280} /* NN,AU,A,G,E */
09575      , {      290,      290,      250,      250,      250} /* NN,AU,A,G,A */
09576      , {      320,      320,      280,      280,      280} /* NN,AU,A,G,C */
09577      , {      260,      170,      130,      260,      130} /* NN,AU,A,G,G */
09578      , {      320,      320,      280,      280,      280} /* NN,AU,A,G,U */
09579      }
09580      , {{{      350,      330,      290,      350,      290} /* NN,AU,A,U,E */
09581      , {      330,      330,      290,      290,      290} /* NN,AU,A,U,A */
09582      , {      350,      320,      290,      350,      290} /* NN,AU,A,U,C */
09583      , {      330,      330,      290,      290,      290} /* NN,AU,A,U,G */
09584      , {      290,      290,      200,      200,      200} /* NN,AU,A,U,U */
09585      }
09586      }
09587      , {{{      310,      310,      310,      310,      310} /* NN,AU,C,E,E */
09588      , {      310,      310,      310,      310,      310} /* NN,AU,C,E,A */
09589      , {      290,      290,      290,      290,      290} /* NN,AU,C,E,C */
09590      , {      290,      290,      290,      290,      290} /* NN,AU,C,E,G */
09591      , {      290,      290,      290,      290,      290} /* NN,AU,C,E,U */
09592      }
09593      , {{{      310,      310,      310,      310,      310} /* NN,AU,C,A,E */
09594      , {      310,      310,      310,      310,      310} /* NN,AU,C,A,A */
09595      , {      280,      280,      280,      280,      280} /* NN,AU,C,A,C */
09596      , {      240,      180,      240,      180,      240} /* NN,AU,C,A,G */
09597      , {      280,      280,      280,      280,      280} /* NN,AU,C,A,U */
09598      }
09599      , {{{      290,      290,      290,      290,      290} /* NN,AU,C,C,E */
09600      , {      290,      290,      290,      290,      290} /* NN,AU,C,C,A */
09601      , {      290,      290,      290,      290,      290} /* NN,AU,C,C,C */
09602      , {      290,      290,      290,      290,      290} /* NN,AU,C,C,G */
09603      , {      290,      290,      290,      290,      290} /* NN,AU,C,C,U */
09604      }
09605      , {{{      310,      280,      310,      280,      310} /* NN,AU,C,G,E */
09606      , {      310,      250,      310,      250,      310} /* NN,AU,C,G,A */
09607      , {      280,      280,      280,      280,      280} /* NN,AU,C,G,C */
09608      , {      130,      130,      130,      130,      130} /* NN,AU,C,G,G */
09609      , {      280,      280,      280,      280,      280} /* NN,AU,C,G,U */
09610      }
09611      , {{{      290,      290,      290,      290,      290} /* NN,AU,C,U,E */
09612      , {      290,      290,      290,      290,      290} /* NN,AU,C,U,A */
09613      , {      290,      290,      290,      290,      290} /* NN,AU,C,U,C */
09614      , {      290,      290,      290,      290,      290} /* NN,AU,C,U,G */
09615      , {      200,      200,      200,      200,      200} /* NN,AU,C,U,U */
09616      }
09617      }
09618      , {{{      310,      270,      310,      260,      310} /* NN,AU,G,E,E */
09619      , {      310,      230,      310,      250,      310} /* NN,AU,G,E,A */
09620      , {      290,      270,      290,      160,      290} /* NN,AU,G,E,C */
09621      , {      290,      210,      290,      260,      290} /* NN,AU,G,E,G */
09622      , {      290,      270,      290,      200,      290} /* NN,AU,G,E,U */
09623      }
09624      , {{{      310,      230,      310,      180,      310} /* NN,AU,G,A,E */
09625      , {      310,      230,      310,      180,      310} /* NN,AU,G,A,A */
09626      , {      280,      200,      280,      150,      280} /* NN,AU,G,A,C */
09627      , {      180,      100,      180,      180,      180} /* NN,AU,G,A,G */
09628      , {      280,      200,      280,      150,      280} /* NN,AU,G,A,U */
09629      }
09630      , {{{      290,      270,      290,      160,      290} /* NN,AU,G,C,E */
09631      , {      290,      210,      290,      160,      290} /* NN,AU,G,C,A */
09632      , {      290,      270,      290,      160,      290} /* NN,AU,G,C,C */
09633      , {      290,      210,      290,      160,      290} /* NN,AU,G,C,G */

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09634 , { 290, 270, 290, 160, 290} /* NN, AU, G, C, U */
09635 }
09636 , { { 280, 200, 280, 260, 280} /* NN, AU, G, G, E */
09637 , { 250, 170, 250, 250, 250} /* NN, AU, G, G, A */
09638 , { 280, 200, 280, 150, 280} /* NN, AU, G, G, C */
09639 , { 260, 180, 130, 260, 130} /* NN, AU, G, G, G */
09640 , { 280, 200, 280, 150, 280} /* NN, AU, G, G, U */
09641 }
09642 , { { 290, 270, 290, 200, 290} /* NN, AU, G, U, E */
09643 , { 290, 210, 290, 160, 290} /* NN, AU, G, U, A */
09644 , { 290, 270, 290, 160, 290} /* NN, AU, G, U, C */
09645 , { 290, 210, 290, 160, 290} /* NN, AU, G, U, G */
09646 , { 200, 120, 200, 200, 200} /* NN, AU, G, U, U */
09647 }
09648 }
09649 , { { { 370, 310, 310, 310, 370} /* NN, AU, U, E, E */
09650 , { 370, 310, 310, 310, 370} /* NN, AU, U, E, A */
09651 , { 290, 290, 290, 290, 290} /* NN, AU, U, E, C */
09652 , { 290, 290, 290, 290, 290} /* NN, AU, U, E, G */
09653 , { 290, 290, 290, 290, 290} /* NN, AU, U, E, U */
09654 }
09655 , { { 370, 310, 310, 310, 370} /* NN, AU, U, A, E */
09656 , { 370, 310, 310, 310, 370} /* NN, AU, U, A, A */
09657 , { 280, 280, 280, 280, 280} /* NN, AU, U, A, C */
09658 , { 240, 180, 240, 180, 180} /* NN, AU, U, A, G */
09659 , { 280, 280, 280, 280, 280} /* NN, AU, U, A, U */
09660 }
09661 , { { 290, 290, 290, 290, 290} /* NN, AU, U, C, E */
09662 , { 290, 290, 290, 290, 290} /* NN, AU, U, C, A */
09663 , { 290, 290, 290, 290, 290} /* NN, AU, U, C, C */
09664 , { 290, 290, 290, 290, 290} /* NN, AU, U, C, G */
09665 , { 290, 290, 290, 290, 290} /* NN, AU, U, C, U */
09666 }
09667 , { { 310, 280, 310, 280, 280} /* NN, AU, U, G, E */
09668 , { 310, 250, 310, 250, 250} /* NN, AU, U, G, A */
09669 , { 280, 280, 280, 280, 280} /* NN, AU, U, G, C */
09670 , { 260, 130, 130, 130, 260} /* NN, AU, U, G, G */
09671 , { 280, 280, 280, 280, 280} /* NN, AU, U, G, U */
09672 }
09673 , { { 290, 290, 290, 290, 290} /* NN, AU, U, U, E */
09674 , { 290, 290, 290, 290, 290} /* NN, AU, U, U, A */
09675 , { 290, 290, 290, 290, 290} /* NN, AU, U, U, C */
09676 , { 290, 290, 290, 290, 290} /* NN, AU, U, U, G */
09677 , { 200, 200, 200, 200, 200} /* NN, AU, U, U, U */
09678 }
09679 }
09680 }
09681 , { { { 370, 340, 310, 370, 370} /* NN, UA, E, E, E */
09682 , { 370, 340, 310, 310, 370} /* NN, UA, E, E, A */
09683 , { 370, 340, 310, 370, 310} /* NN, UA, E, E, C */
09684 , { 340, 340, 310, 310, 310} /* NN, UA, E, E, G */
09685 , { 370, 340, 310, 370, 310} /* NN, UA, E, E, U */
09686 }
09687 , { { 370, 340, 310, 310, 370} /* NN, UA, E, A, E */
09688 , { 370, 340, 310, 310, 370} /* NN, UA, E, A, A */
09689 , { 300, 300, 260, 260, 260} /* NN, UA, E, A, C */
09690 , { 260, 240, 260, 200, 260} /* NN, UA, E, A, G */
09691 , { 300, 300, 260, 260, 260} /* NN, UA, E, A, U */
09692 }
09693 , { { 370, 340, 310, 370, 310} /* NN, UA, E, C, E */
09694 , { 340, 340, 310, 310, 310} /* NN, UA, E, C, A */
09695 , { 370, 340, 310, 370, 310} /* NN, UA, E, C, C */
09696 , { 340, 340, 310, 310, 310} /* NN, UA, E, C, G */
09697 , { 370, 340, 310, 370, 310} /* NN, UA, E, C, U */
09698 }
09699 , { { 300, 300, 270, 280, 280} /* NN, UA, E, G, E */
09700 , { 270, 250, 270, 210, 270} /* NN, UA, E, G, A */
09701 , { 300, 300, 260, 260, 260} /* NN, UA, E, G, C */
09702 , { 280, 200, 150, 280, 280} /* NN, UA, E, G, G */
09703 , { 300, 300, 260, 260, 260} /* NN, UA, E, G, U */
09704 }
09705 , { { 340, 340, 310, 340, 310} /* NN, UA, E, U, E */
09706 , { 340, 340, 310, 310, 310} /* NN, UA, E, U, A */
09707 , { 340, 310, 280, 340, 280} /* NN, UA, E, U, C */
09708 , { 340, 340, 310, 310, 310} /* NN, UA, E, U, G */
09709 , { 320, 320, 220, 220, 220} /* NN, UA, E, U, U */
09710 }
09711 }
09712 , { { { 370, 340, 310, 370, 310} /* NN, UA, A, E, E */
09713 , { 340, 340, 310, 310, 310} /* NN, UA, A, E, A */
09714 , { 370, 340, 310, 370, 310} /* NN, UA, A, E, C */
09715 , { 340, 340, 310, 310, 310} /* NN, UA, A, E, G */
09716 , { 370, 340, 310, 370, 310} /* NN, UA, A, E, U */
09717 }
09718 , { { 340, 340, 310, 310, 310} /* NN, UA, A, A, E */
09719 , { 340, 340, 310, 310, 310} /* NN, UA, A, A, A */
09720 , { 300, 300, 260, 260, 260} /* NN, UA, A, A, C */
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09721      , {      240,      240,      200,      200,      200} /* NN, UA, A, A, G */
09722      , {      300,      300,      260,      260,      260} /* NN, UA, A, A, U */
09723      }
09724      , { {      370,      340,      310,      370,      310} /* NN, UA, A, C, E */
09725      , {      340,      340,      310,      310,      310} /* NN, UA, A, C, A */
09726      , {      370,      340,      310,      370,      310} /* NN, UA, A, C, C */
09727      , {      340,      340,      310,      310,      310} /* NN, UA, A, C, G */
09728      , {      370,      340,      310,      370,      310} /* NN, UA, A, C, U */
09729      }
09730      , { {      300,      300,      260,      280,      260} /* NN, UA, A, G, E */
09731      , {      250,      250,      210,      210,      210} /* NN, UA, A, G, A */
09732      , {      300,      300,      260,      260,      260} /* NN, UA, A, G, C */
09733      , {      280,      190,      150,      280,      150} /* NN, UA, A, G, G */
09734      , {      300,      300,      260,      260,      260} /* NN, UA, A, G, U */
09735      }
09736      , { {      340,      340,      310,      340,      310} /* NN, UA, A, U, E */
09737      , {      340,      340,      310,      310,      310} /* NN, UA, A, U, A */
09738      , {      340,      310,      280,      340,      280} /* NN, UA, A, U, C */
09739      , {      340,      340,      310,      310,      310} /* NN, UA, A, U, G */
09740      , {      320,      320,      220,      220,      220} /* NN, UA, A, U, U */
09741      }
09742      }
09743      , { { {      310,      310,      310,      310,      310} /* NN, UA, C, E, E */
09744      , {      310,      310,      310,      310,      310} /* NN, UA, C, E, A */
09745      , {      310,      310,      310,      310,      310} /* NN, UA, C, E, C */
09746      , {      310,      310,      310,      310,      310} /* NN, UA, C, E, G */
09747      , {      310,      310,      310,      310,      310} /* NN, UA, C, E, U */
09748      }
09749      , { {      310,      310,      310,      310,      310} /* NN, UA, C, A, E */
09750      , {      310,      310,      310,      310,      310} /* NN, UA, C, A, A */
09751      , {      260,      260,      260,      260,      260} /* NN, UA, C, A, C */
09752      , {      260,      200,      260,      200,      260} /* NN, UA, C, A, G */
09753      , {      260,      260,      260,      260,      260} /* NN, UA, C, A, U */
09754      }
09755      , { {      310,      310,      310,      310,      310} /* NN, UA, C, C, E */
09756      , {      310,      310,      310,      310,      310} /* NN, UA, C, C, A */
09757      , {      310,      310,      310,      310,      310} /* NN, UA, C, C, C */
09758      , {      310,      310,      310,      310,      310} /* NN, UA, C, C, G */
09759      , {      310,      310,      310,      310,      310} /* NN, UA, C, C, U */
09760      }
09761      , { {      270,      260,      270,      260,      270} /* NN, UA, C, G, E */
09762      , {      270,      210,      270,      210,      270} /* NN, UA, C, G, A */
09763      , {      260,      260,      260,      260,      260} /* NN, UA, C, G, C */
09764      , {      150,      150,      150,      150,      150} /* NN, UA, C, G, G */
09765      , {      260,      260,      260,      260,      260} /* NN, UA, C, G, U */
09766      }
09767      , { {      310,      310,      310,      310,      310} /* NN, UA, C, U, E */
09768      , {      310,      310,      310,      310,      310} /* NN, UA, C, U, A */
09769      , {      280,      280,      280,      280,      280} /* NN, UA, C, U, C */
09770      , {      310,      310,      310,      310,      310} /* NN, UA, C, U, G */
09771      , {      220,      220,      220,      220,      220} /* NN, UA, C, U, U */
09772      }
09773      }
09774      , { { {      310,      290,      310,      280,      310} /* NN, UA, G, E, E */
09775      , {      310,      230,      310,      210,      310} /* NN, UA, G, E, A */
09776      , {      310,      290,      310,      180,      310} /* NN, UA, G, E, C */
09777      , {      310,      230,      310,      280,      310} /* NN, UA, G, E, G */
09778      , {      310,      290,      310,      220,      310} /* NN, UA, G, E, U */
09779      }
09780      , { {      310,      230,      310,      200,      310} /* NN, UA, G, A, E */
09781      , {      310,      230,      310,      180,      310} /* NN, UA, G, A, A */
09782      , {      260,      180,      260,      130,      260} /* NN, UA, G, A, C */
09783      , {      200,      120,      200,      200,      200} /* NN, UA, G, A, G */
09784      , {      260,      180,      260,      130,      260} /* NN, UA, G, A, U */
09785      }
09786      , { {      310,      290,      310,      180,      310} /* NN, UA, G, C, E */
09787      , {      310,      230,      310,      180,      310} /* NN, UA, G, C, A */
09788      , {      310,      290,      310,      180,      310} /* NN, UA, G, C, C */
09789      , {      310,      230,      310,      180,      310} /* NN, UA, G, C, G */
09790      , {      310,      290,      310,      180,      310} /* NN, UA, G, C, U */
09791      }
09792      , { {      280,      200,      260,      280,      260} /* NN, UA, G, G, E */
09793      , {      210,      130,      210,      210,      210} /* NN, UA, G, G, A */
09794      , {      260,      180,      260,      130,      260} /* NN, UA, G, G, C */
09795      , {      280,      200,      150,      280,      150} /* NN, UA, G, G, G */
09796      , {      260,      180,      260,      130,      260} /* NN, UA, G, G, U */
09797      }
09798      , { {      310,      260,      310,      220,      310} /* NN, UA, G, U, E */
09799      , {      310,      230,      310,      180,      310} /* NN, UA, G, U, A */
09800      , {      280,      260,      280,      150,      280} /* NN, UA, G, U, C */
09801      , {      310,      230,      310,      180,      310} /* NN, UA, G, U, G */
09802      , {      220,      140,      220,      220,      220} /* NN, UA, G, U, U */
09803      }
09804      }
09805      , { { {      370,      310,      310,      310,      370} /* NN, UA, U, E, E */
09806      , {      370,      310,      310,      310,      370} /* NN, UA, U, E, A */
09807      , {      310,      310,      310,      310,      310} /* NN, UA, U, E, C */

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```
09808 , { 310, 310, 310, 310, 310} /* NN,UA,U,E,G */
09809 , { 310, 310, 310, 310, 310} /* NN,UA,U,E,U */
09810 }
09811 , { { 370, 310, 310, 310, 370} /* NN,UA,U,A,E */
09812 , { 370, 310, 310, 310, 370} /* NN,UA,U,A,A */
09813 , { 260, 260, 260, 260, 260} /* NN,UA,U,A,C */
09814 , { 260, 200, 260, 200, 200} /* NN,UA,U,A,G */
09815 , { 260, 260, 260, 260, 260} /* NN,UA,U,A,U */
09816 }
09817 , { { 310, 310, 310, 310, 310} /* NN,UA,U,C,E */
09818 , { 310, 310, 310, 310, 310} /* NN,UA,U,C,A */
09819 , { 310, 310, 310, 310, 310} /* NN,UA,U,C,C */
09820 , { 310, 310, 310, 310, 310} /* NN,UA,U,C,G */
09821 , { 310, 310, 310, 310, 310} /* NN,UA,U,C,U */
09822 }
09823 , { { 280, 260, 270, 260, 280} /* NN,UA,U,G,E */
09824 , { 270, 210, 270, 210, 210} /* NN,UA,U,G,A */
09825 , { 260, 260, 260, 260, 260} /* NN,UA,U,G,C */
09826 , { 280, 150, 150, 150, 280} /* NN,UA,U,G,G */
09827 , { 260, 260, 260, 260, 260} /* NN,UA,U,G,U */
09828 }
09829 , { { 310, 310, 310, 310, 310} /* NN,UA,U,U,E */
09830 , { 310, 310, 310, 310, 310} /* NN,UA,U,U,A */
09831 , { 280, 280, 280, 280, 280} /* NN,UA,U,U,C */
09832 , { 310, 310, 310, 310, 310} /* NN,UA,U,U,G */
09833 , { 220, 220, 220, 220, 220} /* NN,UA,U,U,U */
09834 }
09835 }
09836 }
09837 , { { { 430, 430, 400, 400, 430} /* NN,NN,E,E,E */
09838 , { 430, 410, 400, 370, 430} /* NN,NN,E,E,A */
09839 , { 400, 370, 340, 400, 340} /* NN,NN,E,E,C */
09840 , { 370, 370, 340, 340, 340} /* NN,NN,E,E,G */
09841 , { 430, 430, 340, 400, 340} /* NN,NN,E,E,U */
09842 }
09843 , { { 430, 410, 370, 370, 430} /* NN,NN,E,A,E */
09844 , { 430, 410, 370, 370, 430} /* NN,NN,E,A,A */
09845 , { 370, 370, 340, 340, 340} /* NN,NN,E,A,C */
09846 , { 320, 290, 320, 260, 320} /* NN,NN,E,A,G */
09847 , { 370, 370, 340, 340, 340} /* NN,NN,E,A,U */
09848 }
09849 , { { 400, 370, 340, 400, 340} /* NN,NN,E,C,E */
09850 , { 370, 370, 340, 340, 340} /* NN,NN,E,C,A */
09851 , { 400, 370, 340, 400, 340} /* NN,NN,E,C,C */
09852 , { 370, 370, 340, 340, 340} /* NN,NN,E,C,G */
09853 , { 400, 370, 340, 400, 340} /* NN,NN,E,C,U */
09854 }
09855 , { { 400, 370, 400, 340, 400} /* NN,NN,E,G,E */
09856 , { 400, 370, 400, 340, 400} /* NN,NN,E,G,A */
09857 , { 370, 370, 340, 340, 340} /* NN,NN,E,G,C */
09858 , { 340, 260, 210, 340, 340} /* NN,NN,E,G,G */
09859 , { 370, 370, 340, 340, 340} /* NN,NN,E,G,U */
09860 }
09861 , { { 430, 430, 340, 400, 340} /* NN,NN,E,U,E */
09862 , { 370, 370, 340, 340, 340} /* NN,NN,E,U,A */
09863 , { 400, 370, 340, 400, 340} /* NN,NN,E,U,C */
09864 , { 370, 370, 340, 340, 340} /* NN,NN,E,U,G */
09865 , { 430, 430, 340, 340, 340} /* NN,NN,E,U,U */
09866 }
09867 }
09868 , { { { 430, 430, 370, 400, 370} /* NN,NN,A,E,E */
09869 , { 410, 410, 370, 370, 370} /* NN,NN,A,E,A */
09870 , { 400, 370, 340, 400, 340} /* NN,NN,A,E,C */
09871 , { 370, 370, 340, 340, 340} /* NN,NN,A,E,G */
09872 , { 430, 430, 340, 400, 340} /* NN,NN,A,E,U */
09873 }
09874 , { { 410, 410, 370, 370, 370} /* NN,NN,A,A,E */
09875 , { 410, 410, 370, 370, 370} /* NN,NN,A,A,A */
09876 , { 370, 370, 340, 340, 340} /* NN,NN,A,A,C */
09877 , { 290, 290, 260, 260, 260} /* NN,NN,A,A,G */
09878 , { 370, 370, 340, 340, 340} /* NN,NN,A,A,U */
09879 }
09880 , { { 400, 370, 340, 400, 340} /* NN,NN,A,C,E */
09881 , { 370, 370, 340, 340, 340} /* NN,NN,A,C,A */
09882 , { 400, 370, 340, 400, 340} /* NN,NN,A,C,C */
09883 , { 370, 370, 340, 340, 340} /* NN,NN,A,C,G */
09884 , { 400, 370, 340, 400, 340} /* NN,NN,A,C,U */
09885 }
09886 , { { 370, 370, 340, 340, 340} /* NN,NN,A,G,E */
09887 , { 370, 370, 340, 340, 340} /* NN,NN,A,G,A */
09888 , { 370, 370, 340, 340, 340} /* NN,NN,A,G,C */
09889 , { 340, 240, 210, 340, 210} /* NN,NN,A,G,G */
09890 , { 370, 370, 340, 340, 340} /* NN,NN,A,G,U */
09891 }
09892 , { { 430, 430, 340, 400, 340} /* NN,NN,A,U,E */
09893 , { 370, 370, 340, 340, 340} /* NN,NN,A,U,A */
09894 , { 400, 370, 340, 400, 340} /* NN,NN,A,U,C */
```

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09895 , { 370, 370, 340, 340, 340} /* NN,NN,A,U,G */
09896 , { 430, 430, 340, 340, 340} /* NN,NN,A,U,U */
09897 }
09898
09899 , {{{ 400, 370, 400, 370, 400} /* NN,NN,C,E,E */
09900 , { 400, 370, 400, 370, 400} /* NN,NN,C,E,A */
09901 , { 340, 340, 340, 340, 340} /* NN,NN,C,E,C */
09902 , { 340, 340, 340, 340, 340} /* NN,NN,C,E,G */
09903 , { 340, 340, 340, 340, 340} /* NN,NN,C,E,U */
09904 }
09905 , { { 370, 370, 370, 370, 370} /* NN,NN,C,A,E */
09906 , { 370, 370, 370, 370, 370} /* NN,NN,C,A,A */
09907 , { 340, 340, 340, 340, 340} /* NN,NN,C,A,C */
09908 , { 320, 260, 320, 260, 320} /* NN,NN,C,A,G */
09909 , { 340, 340, 340, 340, 340} /* NN,NN,C,A,U */
09910 }
09911 , { { 340, 340, 340, 340, 340} /* NN,NN,C,C,E */
09912 , { 340, 340, 340, 340, 340} /* NN,NN,C,C,A */
09913 , { 340, 340, 340, 340, 340} /* NN,NN,C,C,C */
09914 , { 340, 340, 340, 340, 340} /* NN,NN,C,C,G */
09915 , { 340, 340, 340, 340, 340} /* NN,NN,C,C,U */
09916 }
09917 , { { 400, 340, 400, 340, 400} /* NN,NN,C,G,E */
09918 , { 400, 340, 400, 340, 400} /* NN,NN,C,G,A */
09919 , { 340, 340, 340, 340, 340} /* NN,NN,C,G,C */
09920 , { 210, 210, 210, 210, 210} /* NN,NN,C,G,G */
09921 , { 340, 340, 340, 340, 340} /* NN,NN,C,G,U */
09922 }
09923 , { { 340, 340, 340, 340, 340} /* NN,NN,C,U,E */
09924 , { 340, 340, 340, 340, 340} /* NN,NN,C,U,A */
09925 , { 340, 340, 340, 340, 340} /* NN,NN,C,U,C */
09926 , { 340, 340, 340, 340, 340} /* NN,NN,C,U,G */
09927 , { 340, 340, 340, 340, 340} /* NN,NN,C,U,U */
09928 }
09929 }
09930 , {{{ 370, 320, 370, 340, 370} /* NN,NN,G,E,E */
09931 , { 370, 290, 370, 340, 370} /* NN,NN,G,E,A */
09932 , { 340, 320, 340, 210, 340} /* NN,NN,G,E,C */
09933 , { 340, 260, 340, 340, 340} /* NN,NN,G,E,G */
09934 , { 340, 320, 340, 340, 340} /* NN,NN,G,E,U */
09935 }
09936 , { { 370, 290, 370, 260, 370} /* NN,NN,G,A,E */
09937 , { 370, 290, 370, 240, 370} /* NN,NN,G,A,A */
09938 , { 340, 260, 340, 210, 340} /* NN,NN,G,A,C */
09939 , { 260, 180, 260, 260, 260} /* NN,NN,G,A,G */
09940 , { 340, 260, 340, 210, 340} /* NN,NN,G,A,U */
09941 }
09942 , { { 340, 320, 340, 210, 340} /* NN,NN,G,C,E */
09943 , { 340, 260, 340, 210, 340} /* NN,NN,G,C,A */
09944 , { 340, 320, 340, 210, 340} /* NN,NN,G,C,C */
09945 , { 340, 260, 340, 210, 340} /* NN,NN,G,C,G */
09946 , { 340, 320, 340, 210, 340} /* NN,NN,G,C,U */
09947 }
09948 , { { 340, 260, 340, 340, 340} /* NN,NN,G,G,E */
09949 , { 340, 260, 340, 340, 340} /* NN,NN,G,G,A */
09950 , { 340, 260, 340, 210, 340} /* NN,NN,G,G,C */
09951 , { 340, 260, 210, 340, 210} /* NN,NN,G,G,G */
09952 , { 340, 260, 340, 210, 340} /* NN,NN,G,G,U */
09953 }
09954 , { { 340, 320, 340, 340, 340} /* NN,NN,G,U,E */
09955 , { 340, 260, 340, 210, 340} /* NN,NN,G,U,A */
09956 , { 340, 320, 340, 210, 340} /* NN,NN,G,U,C */
09957 , { 340, 260, 340, 210, 340} /* NN,NN,G,U,G */
09958 , { 340, 260, 340, 340, 340} /* NN,NN,G,U,U */
09959 }
09960 }
09961 , {{{ 430, 370, 400, 370, 430} /* NN,NN,U,E,E */
09962 , { 430, 370, 400, 370, 430} /* NN,NN,U,E,A */
09963 , { 340, 340, 340, 340, 340} /* NN,NN,U,E,C */
09964 , { 340, 340, 340, 340, 340} /* NN,NN,U,E,G */
09965 , { 340, 340, 340, 340, 340} /* NN,NN,U,E,U */
09966 }
09967 , { { 430, 370, 370, 370, 430} /* NN,NN,U,A,E */
09968 , { 430, 370, 370, 370, 430} /* NN,NN,U,A,A */
09969 , { 340, 340, 340, 340, 340} /* NN,NN,U,A,C */
09970 , { 320, 260, 320, 260, 260} /* NN,NN,U,A,G */
09971 , { 340, 340, 340, 340, 340} /* NN,NN,U,A,U */
09972 }
09973 , { { 340, 340, 340, 340, 340} /* NN,NN,U,C,E */
09974 , { 340, 340, 340, 340, 340} /* NN,NN,U,C,A */
09975 , { 340, 340, 340, 340, 340} /* NN,NN,U,C,C */
09976 , { 340, 340, 340, 340, 340} /* NN,NN,U,C,G */
09977 , { 340, 340, 340, 340, 340} /* NN,NN,U,C,U */
09978 }
09979 , { { 400, 340, 400, 340, 340} /* NN,NN,U,G,E */
09980 , { 400, 340, 400, 340, 340} /* NN,NN,U,G,A */
09981 , { 340, 340, 340, 340, 340} /* NN,NN,U,G,C */

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```
09982      , {      340,      210,      210,      210,      340} /* NN,NN,U,G,G */
09983      , {      340,      340,      340,      340,      340} /* NN,NN,U,G,U */
09984      }
09985      , { {      340,      340,      340,      340,      340} /* NN,NN,U,U,E */
09986      , {      340,      340,      340,      340,      340} /* NN,NN,U,U,A */
09987      , {      340,      340,      340,      340,      340} /* NN,NN,U,U,C */
09988      , {      340,      340,      340,      340,      340} /* NN,NN,U,U,G */
09989      , {      340,      340,      340,      340,      340} /* NN,NN,U,U,U */
09990      }
09991      }
09992      }
09993      }
09994      };
09995
```

11.101 intl22_D.h

```
00001 PUBLIC int intl22_37_D[NBPAIRS+1][NBPAIRS+1][5][5][5][5] =
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00004      , { INF, INF, INF, INF, INF} /* NP,NP,E,E,C */
00005      , { INF, INF, INF, INF, INF} /* NP,NP,E,E,G */
00006      , { INF, INF, INF, INF, INF} /* NP,NP,E,E,T */
00007      }
00008      , { { INF, INF, INF, INF, INF} /* NP,NP,E,A,E */
00009      , { INF, INF, INF, INF, INF} /* NP,NP,E,A,A */
00010      , { INF, INF, INF, INF, INF} /* NP,NP,E,A,C */
00011      , { INF, INF, INF, INF, INF} /* NP,NP,E,A,G */
00012      , { INF, INF, INF, INF, INF} /* NP,NP,E,A,T */
00013      }
00014      , { { INF, INF, INF, INF, INF} /* NP,NP,E,C,E */
00015      , { INF, INF, INF, INF, INF} /* NP,NP,E,C,A */
00016      , { INF, INF, INF, INF, INF} /* NP,NP,E,C,C */
00017      , { INF, INF, INF, INF, INF} /* NP,NP,E,C,G */
00018      , { INF, INF, INF, INF, INF} /* NP,NP,E,C,T */
00019      }
00020      , { { INF, INF, INF, INF, INF} /* NP,NP,E,G,E */
00021      , { INF, INF, INF, INF, INF} /* NP,NP,E,G,A */
00022      , { INF, INF, INF, INF, INF} /* NP,NP,E,G,C */
00023      , { INF, INF, INF, INF, INF} /* NP,NP,E,G,G */
00024      , { INF, INF, INF, INF, INF} /* NP,NP,E,G,T */
00025      }
00026      , { { INF, INF, INF, INF, INF} /* NP,NP,E,T,E */
00027      , { INF, INF, INF, INF, INF} /* NP,NP,E,T,A */
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00029      , { INF, INF, INF, INF, INF} /* NP,NP,E,T,G */
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00031      }
00032      }
00033      , {{{ INF, INF, INF, INF, INF} /* NP,NP,A,E,E */
00034      , { INF, INF, INF, INF, INF} /* NP,NP,A,E,A */
00035      , { INF, INF, INF, INF, INF} /* NP,NP,A,E,C */
00036      , { INF, INF, INF, INF, INF} /* NP,NP,A,E,G */
00037      , { INF, INF, INF, INF, INF} /* NP,NP,A,E,T */
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00039      , { { INF, INF, INF, INF, INF} /* NP,NP,A,A,E */
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00044      }
00045      , {{{ INF, INF, INF, INF, INF} /* NP,NP,A,C,E */
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00047      , { INF, INF, INF, INF, INF} /* NP,NP,A,C,C */
00048      , { INF, INF, INF, INF, INF} /* NP,NP,A,C,G */
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00050      }
00051      , { { INF, INF, INF, INF, INF} /* NP,NP,A,G,E */
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00063      }
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00067      , { INF, INF, INF, INF, INF} /* NP,NP,C,E,G */
00068      , { INF, INF, INF, INF, INF} /* NP,NP,C,E,T */
```

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00069      }
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00073      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,A,G */
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00077      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,C,A */
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00079      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,C,G */
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00083      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,G,A */
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00085      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,G,G */
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00094      }
00095      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,E */
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00097      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,C */
00098      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,G */
00099      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,T */
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00101      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,E */
00102      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,A */
00103      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,C */
00104      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,G */
00105      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,T */
00106      }
00107      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,E */
00108      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,A */
00109      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,C */
00110      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,G */
00111      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,T */
00112      }
00113      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,E */
00114      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,A */
00115      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,C */
00116      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,G */
00117      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,T */
00118      }
00119      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,T,E */
00120      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,T,A */
00121      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,T,C */
00122      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,T,G */
00123      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,T,T */
00124      }
00125      }
00126      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,E,E */
00127      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,E,A */
00128      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,E,C */
00129      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,E,G */
00130      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,E,T */
00131      }
00132      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,A,E */
00133      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,A,A */
00134      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,A,C */
00135      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,A,G */
00136      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,A,T */
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00138      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,C,E */
00139      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,C,A */
00140      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,C,C */
00141      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,C,G */
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00143      }
00144      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,G,E */
00145      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,G,A */
00146      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,G,C */
00147      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,G,G */
00148      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,G,T */
00149      }
00150      ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,T,E */
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00152      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,T,C */
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00154      ,{      INF,      INF,      INF,      INF,      INF} /* NP,NP,T,T,T */
00155      }

```

```
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00157     }
00158     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,CG,E,E,E */
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00166     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,A,C */
00167     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,A,G */
00168     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,A,T */
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00172     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,C,C */
00173     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,C,G */
00174     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,C,T */
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00179     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,G,G */
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00181     }
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00183     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,T,A */
00184     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,T,C */
00185     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,T,G */
00186     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,E,T,T */
00187     }
00188     }
00189     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,CG,A,E,E */
00190     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,E,A */
00191     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,E,C */
00192     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,E,G */
00193     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,E,T */
00194     }
00195     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,CG,A,A,E */
00196     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,A,A */
00197     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,A,C */
00198     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,A,G */
00199     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,A,T */
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00201     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,CG,A,C,E */
00202     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,C,A */
00203     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,C,C */
00204     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,C,G */
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00214     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,A,T,A */
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00219     }
00220     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,CG,C,E,E */
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00222     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,E,C */
00223     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,E,G */
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00226     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,CG,C,A,E */
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00228     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,A,C */
00229     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,A,G */
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00232     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,CG,C,C,E */
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00234     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,C,C */
00235     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,C,G */
00236     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,C,T */
00237     }
00238     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,CG,C,G,E */
00239     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,G,A */
00240     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,G,C */
00241     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,G,G */
00242     ,{     INF,   INF,   INF,   INF,   INF} /* NP,CG,C,G,T */
```

```

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00246     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,C,T,C */
00247     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,C,T,G */
00248     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,C,T,T */
00249     }
00250     }
00251     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,CG,G,E,E */
00252     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,E,A */
00253     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,E,C */
00254     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,E,G */
00255     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,E,T */
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00265     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,C,C */
00266     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,C,G */
00267     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,C,T */
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00269     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,CG,G,G,E */
00270     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,G,A */
00271     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,G,C */
00272     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,G,G */
00273     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,G,T */
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00275     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,CG,G,T,E */
00276     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,T,A */
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00278     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,T,G */
00279     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,G,T,T */
00280     }
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00282     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,CG,T,E,E */
00283     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,T,E,A */
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00285     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,T,E,G */
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00296     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,T,C,C */
00297     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,T,C,G */
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00309     ,{     INF,    INF,    INF,    INF,    INF} /* NP,CG,T,T,G */
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00313     }
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00316     ,{     INF,    INF,    INF,    INF,    INF} /* NP,GC,E,E,C */
00317     ,{     INF,    INF,    INF,    INF,    INF} /* NP,GC,E,E,G */
00318     ,{     INF,    INF,    INF,    INF,    INF} /* NP,GC,E,E,T */
00319     }
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00323     ,{     INF,    INF,    INF,    INF,    INF} /* NP,GC,E,A,G */
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00326     ,{{{    INF,    INF,    INF,    INF,    INF} /* NP,GC,E,C,E */
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00328     ,{     INF,    INF,    INF,    INF,    INF} /* NP,GC,E,C,C */
00329     ,{     INF,    INF,    INF,    INF,    INF} /* NP,GC,E,C,G */

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00334 , { INF, INF, INF, INF, INF} /* NP,GC,E,G,C */
00335 , { INF, INF, INF, INF, INF} /* NP,GC,E,G,G */
00336 , { INF, INF, INF, INF, INF} /* NP,GC,E,G,T */
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00338 , { { INF, INF, INF, INF, INF} /* NP,GC,E,T,E */
00339 , { INF, INF, INF, INF, INF} /* NP,GC,E,T,A */
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00341 , { INF, INF, INF, INF, INF} /* NP,GC,E,T,G */
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00349 , { INF, INF, INF, INF, INF} /* NP,GC,A,E,T */
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00367 , { INF, INF, INF, INF, INF} /* NP,GC,A,G,T */
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00371 , { INF, INF, INF, INF, INF} /* NP,GC,A,T,C */
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00398 , { INF, INF, INF, INF, INF} /* NP,GC,C,G,T */
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00401 , { INF, INF, INF, INF, INF} /* NP,GC,C,T,A */
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00403 , { INF, INF, INF, INF, INF} /* NP,GC,C,T,G */
00404 , { INF, INF, INF, INF, INF} /* NP,GC,C,T,T */
00405 }
00406 }
00407 , { { { INF, INF, INF, INF, INF} /* NP,GC,G,E,E */
00408 , { INF, INF, INF, INF, INF} /* NP,GC,G,E,A */
00409 , { INF, INF, INF, INF, INF} /* NP,GC,G,E,C */
00410 , { INF, INF, INF, INF, INF} /* NP,GC,G,E,G */
00411 , { INF, INF, INF, INF, INF} /* NP,GC,G,E,T */
00412 }
00413 , { { INF, INF, INF, INF, INF} /* NP,GC,G,A,E */
00414 , { INF, INF, INF, INF, INF} /* NP,GC,G,A,A */
00415 , { INF, INF, INF, INF, INF} /* NP,GC,G,A,C */
00416 , { INF, INF, INF, INF, INF} /* NP,GC,G,A,G */

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00418      }
00419      , {{      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,C,E */
00420      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,C,A */
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00423      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,C,T */
00424      }
00425      , {{      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,G,E */
00426      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,G,A */
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00428      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,G,G */
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00430      }
00431      , {{      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,T,E */
00432      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,G,T,A */
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00437      }
00438      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,GC,T,E,E */
00439      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,T,E,A */
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00443      }
00444      , {{      INF,      INF,      INF,      INF,      INF} /* NP,GC,T,A,E */
00445      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,T,A,A */
00446      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,T,A,C */
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00457      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,T,G,A */
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00464      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,T,T,C */
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00588 , { INF, INF, INF, INF, INF} /* NP,GT,G,T,A */
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00590 , { INF, INF, INF, INF, INF} /* NP,GT,G,T,G */
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00704      , {      INF,      INF,      INF,      INF,      INF} /* NP, TG, C, C, T */
00705      }
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00857      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,C,A */
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00862      , {{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,G,E */
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01292     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,A,T */
01293     }
01294     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,A,C,E */
01295     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,C,A */
01296     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,C,C */
01297     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,C,G */
01298     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,C,T */
01299     }
01300     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,A,G,E */
01301     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,G,A */
01302     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,G,C */
01303     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,G,G */
01304     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,G,T */
01305     }
01306     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,A,T,E */
01307     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,T,A */
01308     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,T,C */
01309     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,T,G */
01310     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,A,T,T */
01311     }
01312     }
01313     ,{{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,E,E */
01314     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,E,A */
01315     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,E,C */
01316     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,E,G */
01317     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,E,T */
01318     }
01319     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,A,E */
01320     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,A,A */
01321     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,A,C */
01322     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,A,G */
01323     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,A,T */
01324     }
01325     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,C,E */
01326     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,C,A */
01327     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,C,C */
01328     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,C,G */
01329     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,C,T */
01330     }
01331     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,G,E */
01332     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,G,A */
01333     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,G,C */
01334     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,G,G */
01335     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,G,T */
01336     }
01337     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,C,T,E */
01338     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,T,A */
01339     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,T,C */
01340     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,T,G */
01341     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,C,T,T */
01342     }
01343     }
01344     ,{{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,E,E */
01345     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,E,A */
01346     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,E,C */
01347     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,E,G */
01348     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,E,T */
01349     }
01350     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,A,E */
01351     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,A,A */
01352     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,A,C */
01353     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,A,G */
01354     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,A,T */
01355     }
01356     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,C,E */
01357     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,C,A */
01358     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,C,C */
01359     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,C,G */
01360     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,C,T */
01361     }
01362     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,G,E */
01363     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,G,A */
01364     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,G,C */
01365     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,G,G */
01366     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,G,T */
01367     }
01368     ,{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,G,T,E */
01369     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,T,A */
01370     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,T,C */
01371     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,T,G */
01372     ,{     INF,    INF,    INF,    INF,    INF} /* CG,NP,G,T,T */
01373     }

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01374     }
01375     ,{{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,T,E,E */
01376     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,E,A */
01377     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,E,C */
01378     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,E,G */
01379     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,E,T */
01380     }
01381     ,{{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,T,A,E */
01382     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,A,A */
01383     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,A,C */
01384     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,A,G */
01385     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,A,T */
01386     }
01387     ,{{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,T,C,E */
01388     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,C,A */
01389     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,C,C */
01390     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,C,G */
01391     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,C,T */
01392     }
01393     ,{{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,T,G,E */
01394     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,G,A */
01395     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,G,C */
01396     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,G,G */
01397     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,G,T */
01398     }
01399     ,{{{    INF,    INF,    INF,    INF,    INF} /* CG,NP,T,T,E */
01400     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,T,A */
01401     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,T,C */
01402     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,T,G */
01403     ,{      INF,    INF,    INF,    INF,    INF} /* CG,NP,T,T,T */
01404     }
01405     }
01406     }
01407     ,{{{    270,    270,    240,    250,    250} /* CG,CG,E,E,E */
01408     ,{      250,    250,    220,    230,    230} /* CG,CG,E,E,A */
01409     ,{      240,    240,    210,    220,    220} /* CG,CG,E,E,C */
01410     ,{      240,    240,    210,    220,    220} /* CG,CG,E,E,G */
01411     ,{      270,    270,    240,    250,    250} /* CG,CG,E,E,T */
01412     }
01413     ,{{{    270,    270,    240,    250,    250} /* CG,CG,E,A,E */
01414     ,{      190,    190,    160,    170,    170} /* CG,CG,E,A,A */
01415     ,{      220,    220,    190,    200,    200} /* CG,CG,E,A,C */
01416     ,{      200,    200,    170,    180,    180} /* CG,CG,E,A,G */
01417     ,{      270,    270,    240,    250,    250} /* CG,CG,E,A,T */
01418     }
01419     ,{{{    240,    240,    210,    220,    220} /* CG,CG,E,C,E */
01420     ,{      220,    220,    190,    200,    200} /* CG,CG,E,C,A */
01421     ,{      240,    240,    210,    220,    220} /* CG,CG,E,C,C */
01422     ,{      180,    180,    150,    160,    160} /* CG,CG,E,C,G */
01423     ,{      220,    220,    190,    200,    200} /* CG,CG,E,C,T */
01424     }
01425     ,{{{    250,    250,    220,    230,    230} /* CG,CG,E,G,E */
01426     ,{      200,    200,    170,    180,    180} /* CG,CG,E,G,A */
01427     ,{      210,    210,    180,    190,    190} /* CG,CG,E,G,C */
01428     ,{      200,    200,    170,    180,    180} /* CG,CG,E,G,G */
01429     ,{      250,    250,    220,    230,    230} /* CG,CG,E,G,T */
01430     }
01431     ,{{{    250,    250,    220,    230,    230} /* CG,CG,E,T,E */
01432     ,{      250,    250,    220,    230,    230} /* CG,CG,E,T,A */
01433     ,{      220,    220,    190,    200,    200} /* CG,CG,E,T,C */
01434     ,{      240,    240,    210,    220,    220} /* CG,CG,E,T,G */
01435     ,{      200,    200,    170,    180,    180} /* CG,CG,E,T,T */
01436     }
01437     }
01438     ,{{{    250,    190,    220,    200,    250} /* CG,CG,A,E,E */
01439     ,{      230,    170,    200,    180,    230} /* CG,CG,A,E,A */
01440     ,{      220,    160,    190,    170,    220} /* CG,CG,A,E,C */
01441     ,{      220,    160,    190,    170,    220} /* CG,CG,A,E,G */
01442     ,{      250,    190,    220,    200,    250} /* CG,CG,A,E,T */
01443     }
01444     ,{{{    250,    190,    220,    200,    250} /* CG,CG,A,A,E */
01445     ,{      170,    110,    140,    120,    170} /* CG,CG,A,A,A */
01446     ,{      200,    140,    170,    150,    200} /* CG,CG,A,A,C */
01447     ,{      180,    120,    150,    130,    180} /* CG,CG,A,A,G */
01448     ,{      250,    190,    220,    200,    250} /* CG,CG,A,A,T */
01449     }
01450     ,{{{    220,    160,    190,    170,    220} /* CG,CG,A,C,E */
01451     ,{      200,    140,    170,    150,    200} /* CG,CG,A,C,A */
01452     ,{      220,    160,    190,    170,    220} /* CG,CG,A,C,C */
01453     ,{      160,    100,    130,    110,    160} /* CG,CG,A,C,G */
01454     ,{      200,    140,    170,    150,    200} /* CG,CG,A,C,T */
01455     }
01456     ,{{{    230,    170,    200,    180,    230} /* CG,CG,A,G,E */
01457     ,{      180,    120,    150,    130,    180} /* CG,CG,A,G,A */
01458     ,{      190,    130,    160,    140,    190} /* CG,CG,A,G,C */
01459     ,{      180,    120,    150,    130,    180} /* CG,CG,A,G,G */
01460     ,{      230,    170,    200,    180,    230} /* CG,CG,A,G,T */

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01461      }
01462      ,{{      230,      170,      200,      180,      230} /* CG,CG,A,T,E */
01463      ,{      230,      170,      200,      180,      230} /* CG,CG,A,T,A */
01464      ,{      200,      140,      170,      150,      200} /* CG,CG,A,T,C */
01465      ,{      220,      160,      190,      170,      220} /* CG,CG,A,T,G */
01466      ,{      180,      120,      150,      130,      180} /* CG,CG,A,T,T */
01467      }
01468      }
01469      ,{{{      240,      220,      240,      210,      220} /* CG,CG,C,E,E */
01470      ,{      220,      200,      220,      190,      200} /* CG,CG,C,E,A */
01471      ,{      210,      190,      210,      180,      190} /* CG,CG,C,E,C */
01472      ,{      210,      190,      210,      180,      190} /* CG,CG,C,E,G */
01473      ,{      240,      220,      240,      210,      220} /* CG,CG,C,E,T */
01474      }
01475      ,{{      240,      220,      240,      210,      220} /* CG,CG,C,A,E */
01476      ,{      160,      140,      160,      130,      140} /* CG,CG,C,A,A */
01477      ,{      190,      170,      190,      160,      170} /* CG,CG,C,A,C */
01478      ,{      170,      150,      170,      140,      150} /* CG,CG,C,A,G */
01479      ,{      240,      220,      240,      210,      220} /* CG,CG,C,A,T */
01480      }
01481      ,{{{      210,      190,      210,      180,      190} /* CG,CG,C,C,E */
01482      ,{      190,      170,      190,      160,      170} /* CG,CG,C,C,A */
01483      ,{      210,      190,      210,      180,      190} /* CG,CG,C,C,C */
01484      ,{      150,      130,      150,      120,      130} /* CG,CG,C,C,G */
01485      ,{      190,      170,      190,      160,      170} /* CG,CG,C,C,T */
01486      }
01487      ,{{{      220,      200,      220,      190,      200} /* CG,CG,C,G,E */
01488      ,{      170,      150,      170,      140,      150} /* CG,CG,C,G,A */
01489      ,{      180,      160,      180,      150,      160} /* CG,CG,C,G,C */
01490      ,{      170,      150,      170,      140,      150} /* CG,CG,C,G,G */
01491      ,{      220,      200,      220,      190,      200} /* CG,CG,C,G,T */
01492      }
01493      ,{{{      220,      200,      220,      190,      200} /* CG,CG,C,T,E */
01494      ,{      220,      200,      220,      190,      200} /* CG,CG,C,T,A */
01495      ,{      190,      170,      190,      160,      170} /* CG,CG,C,T,C */
01496      ,{      210,      190,      210,      180,      190} /* CG,CG,C,T,G */
01497      ,{      170,      150,      170,      140,      150} /* CG,CG,C,T,T */
01498      }
01499      }
01500      ,{{{      240,      200,      180,      200,      240} /* CG,CG,G,E,E */
01501      ,{      220,      180,      160,      180,      220} /* CG,CG,G,E,A */
01502      ,{      210,      170,      150,      170,      210} /* CG,CG,G,E,C */
01503      ,{      210,      170,      150,      170,      210} /* CG,CG,G,E,G */
01504      ,{      240,      200,      180,      200,      240} /* CG,CG,G,E,T */
01505      }
01506      ,{{{      240,      200,      180,      200,      240} /* CG,CG,G,A,E */
01507      ,{      160,      120,      100,      120,      160} /* CG,CG,G,A,A */
01508      ,{      190,      150,      130,      150,      190} /* CG,CG,G,A,C */
01509      ,{      170,      130,      110,      130,      170} /* CG,CG,G,A,G */
01510      ,{      240,      200,      180,      200,      240} /* CG,CG,G,A,T */
01511      }
01512      ,{{{      210,      170,      150,      170,      210} /* CG,CG,G,C,E */
01513      ,{      190,      150,      130,      150,      190} /* CG,CG,G,C,A */
01514      ,{      210,      170,      150,      170,      210} /* CG,CG,G,C,C */
01515      ,{      150,      110,      90,      110,      150} /* CG,CG,G,C,G */
01516      ,{      190,      150,      130,      150,      190} /* CG,CG,G,C,T */
01517      }
01518      ,{{{      220,      180,      160,      180,      220} /* CG,CG,G,G,E */
01519      ,{      170,      130,      110,      130,      170} /* CG,CG,G,G,A */
01520      ,{      180,      140,      120,      140,      180} /* CG,CG,G,G,C */
01521      ,{      170,      130,      110,      130,      170} /* CG,CG,G,G,G */
01522      ,{      220,      180,      160,      180,      220} /* CG,CG,G,G,T */
01523      }
01524      ,{{{      220,      180,      160,      180,      220} /* CG,CG,G,T,E */
01525      ,{      220,      180,      160,      180,      220} /* CG,CG,G,T,A */
01526      ,{      190,      150,      130,      150,      190} /* CG,CG,G,T,C */
01527      ,{      210,      170,      150,      170,      210} /* CG,CG,G,T,G */
01528      ,{      170,      130,      110,      130,      170} /* CG,CG,G,T,T */
01529      }
01530      }
01531      ,{{{      270,      270,      220,      250,      200} /* CG,CG,T,E,E */
01532      ,{      250,      250,      200,      230,      180} /* CG,CG,T,E,A */
01533      ,{      240,      240,      190,      220,      170} /* CG,CG,T,E,C */
01534      ,{      240,      240,      190,      220,      170} /* CG,CG,T,E,G */
01535      ,{      270,      270,      220,      250,      200} /* CG,CG,T,E,T */
01536      }
01537      ,{{{      270,      270,      220,      250,      200} /* CG,CG,T,A,E */
01538      ,{      190,      190,      140,      170,      120} /* CG,CG,T,A,A */
01539      ,{      220,      220,      170,      200,      150} /* CG,CG,T,A,C */
01540      ,{      200,      200,      150,      180,      130} /* CG,CG,T,A,G */
01541      ,{      270,      270,      220,      250,      200} /* CG,CG,T,A,T */
01542      }
01543      ,{{{      240,      240,      190,      220,      170} /* CG,CG,T,C,E */
01544      ,{      220,      220,      170,      200,      150} /* CG,CG,T,C,A */
01545      ,{      240,      240,      190,      220,      170} /* CG,CG,T,C,C */
01546      ,{      180,      180,      130,      160,      110} /* CG,CG,T,C,G */
01547      ,{      220,      220,      170,      200,      150} /* CG,CG,T,C,T */

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01548     }
01549     ,{{    250,    250,    200,    230,    180} /* CG,CG,T,G,E */
01550     ,{    200,    200,    150,    180,    130} /* CG,CG,T,G,A */
01551     ,{    210,    210,    160,    190,    140} /* CG,CG,T,G,C */
01552     ,{    200,    200,    150,    180,    130} /* CG,CG,T,G,G */
01553     ,{    250,    250,    200,    230,    180} /* CG,CG,T,G,T */
01554     }
01555     ,{{    250,    250,    200,    230,    180} /* CG,CG,T,T,E */
01556     ,{    250,    250,    200,    230,    180} /* CG,CG,T,T,A */
01557     ,{    220,    220,    170,    200,    150} /* CG,CG,T,T,C */
01558     ,{    240,    240,    190,    220,    170} /* CG,CG,T,T,G */
01559     ,{    200,    200,    150,    180,    130} /* CG,CG,T,T,T */
01560     }
01561     }
01562     }
01563     ,{{{    260,    260,    230,    240,    240} /* CG,GC,E,E,E */
01564     ,{    240,    240,    210,    220,    220} /* CG,GC,E,E,A */
01565     ,{    230,    230,    200,    210,    210} /* CG,GC,E,E,C */
01566     ,{    260,    260,    230,    240,    240} /* CG,GC,E,E,G */
01567     ,{    250,    250,    220,    230,    230} /* CG,GC,E,E,T */
01568     }
01569     ,{{    250,    250,    220,    230,    230} /* CG,GC,E,A,E */
01570     ,{    180,    180,    150,    160,    160} /* CG,GC,E,A,A */
01571     ,{    210,    210,    180,    190,    190} /* CG,GC,E,A,C */
01572     ,{    190,    190,    160,    170,    170} /* CG,GC,E,A,G */
01573     ,{    250,    250,    220,    230,    230} /* CG,GC,E,A,T */
01574     }
01575     ,{{    230,    230,    200,    210,    210} /* CG,GC,E,C,E */
01576     ,{    210,    210,    180,    190,    190} /* CG,GC,E,C,A */
01577     ,{    230,    230,    200,    210,    210} /* CG,GC,E,C,C */
01578     ,{    210,    210,    180,    190,    190} /* CG,GC,E,C,G */
01579     ,{    220,    220,    190,    200,    200} /* CG,GC,E,C,T */
01580     }
01581     ,{{    250,    250,    220,    230,    230} /* CG,GC,E,G,E */
01582     ,{    190,    190,    160,    170,    170} /* CG,GC,E,G,A */
01583     ,{    160,    160,    130,    140,    140} /* CG,GC,E,G,C */
01584     ,{    190,    190,    160,    170,    170} /* CG,GC,E,G,G */
01585     ,{    250,    250,    220,    230,    230} /* CG,GC,E,G,T */
01586     }
01587     ,{{    260,    260,    230,    240,    240} /* CG,GC,E,T,E */
01588     ,{    240,    240,    210,    220,    220} /* CG,GC,E,T,A */
01589     ,{    220,    220,    190,    200,    200} /* CG,GC,E,T,C */
01590     ,{    260,    260,    230,    240,    240} /* CG,GC,E,T,G */
01591     ,{    200,    200,    170,    180,    180} /* CG,GC,E,T,T */
01592     }
01593     }
01594     ,{{{    240,    180,    210,    190,    240} /* CG,GC,A,E,E */
01595     ,{    220,    160,    190,    170,    220} /* CG,GC,A,E,A */
01596     ,{    210,    150,    180,    160,    210} /* CG,GC,A,E,C */
01597     ,{    240,    180,    210,    190,    240} /* CG,GC,A,E,G */
01598     ,{    230,    170,    200,    180,    230} /* CG,GC,A,E,T */
01599     }
01600     ,{{    230,    170,    200,    180,    230} /* CG,GC,A,A,E */
01601     ,{    160,    100,    130,    110,    160} /* CG,GC,A,A,A */
01602     ,{    190,    130,    160,    140,    190} /* CG,GC,A,A,C */
01603     ,{    170,    110,    140,    120,    170} /* CG,GC,A,A,G */
01604     ,{    230,    170,    200,    180,    230} /* CG,GC,A,A,T */
01605     }
01606     ,{{    210,    150,    180,    160,    210} /* CG,GC,A,C,E */
01607     ,{    190,    130,    160,    140,    190} /* CG,GC,A,C,A */
01608     ,{    210,    150,    180,    160,    210} /* CG,GC,A,C,C */
01609     ,{    190,    130,    160,    140,    190} /* CG,GC,A,C,G */
01610     ,{    200,    140,    170,    150,    200} /* CG,GC,A,C,T */
01611     }
01612     ,{{    230,    170,    200,    180,    230} /* CG,GC,A,G,E */
01613     ,{    170,    110,    140,    120,    170} /* CG,GC,A,G,A */
01614     ,{    140,    80,    110,    90,    140} /* CG,GC,A,G,C */
01615     ,{    170,    110,    140,    120,    170} /* CG,GC,A,G,G */
01616     ,{    230,    170,    200,    180,    230} /* CG,GC,A,G,T */
01617     }
01618     ,{{    240,    180,    210,    190,    240} /* CG,GC,A,T,E */
01619     ,{    220,    160,    190,    170,    220} /* CG,GC,A,T,A */
01620     ,{    200,    140,    170,    150,    200} /* CG,GC,A,T,C */
01621     ,{    240,    180,    210,    190,    240} /* CG,GC,A,T,G */
01622     ,{    180,    120,    150,    130,    180} /* CG,GC,A,T,T */
01623     }
01624     }
01625     ,{{{    230,    210,    230,    200,    210} /* CG,GC,C,E,E */
01626     ,{    210,    190,    210,    180,    190} /* CG,GC,C,E,A */
01627     ,{    200,    180,    200,    170,    180} /* CG,GC,C,E,C */
01628     ,{    230,    210,    230,    200,    210} /* CG,GC,C,E,G */
01629     ,{    220,    200,    220,    190,    200} /* CG,GC,C,E,T */
01630     }
01631     ,{{    220,    200,    220,    190,    200} /* CG,GC,C,A,E */
01632     ,{    150,    130,    150,    120,    130} /* CG,GC,C,A,A */
01633     ,{    180,    160,    180,    150,    160} /* CG,GC,C,A,C */
01634     ,{    160,    140,    160,    130,    140} /* CG,GC,C,A,G */
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01635      , {      220,      200,      220,      190,      200} /* CG,GC,C,A,T */
01636      }
01637      , {{      200,      180,      200,      170,      180} /* CG,GC,C,C,E */
01638      , {      180,      160,      180,      150,      160} /* CG,GC,C,C,A */
01639      , {      200,      180,      200,      170,      180} /* CG,GC,C,C,C */
01640      , {      180,      160,      180,      150,      160} /* CG,GC,C,C,G */
01641      , {      190,      170,      190,      160,      170} /* CG,GC,C,C,T */
01642      }
01643      , {{      220,      200,      220,      190,      200} /* CG,GC,C,G,E */
01644      , {      160,      140,      160,      130,      140} /* CG,GC,C,G,A */
01645      , {      130,      110,      130,      100,      110} /* CG,GC,C,G,C */
01646      , {      160,      140,      160,      130,      140} /* CG,GC,C,G,G */
01647      , {      220,      200,      220,      190,      200} /* CG,GC,C,G,T */
01648      }
01649      , {{      230,      210,      230,      200,      210} /* CG,GC,C,T,E */
01650      , {      210,      190,      210,      180,      190} /* CG,GC,C,T,A */
01651      , {      190,      170,      190,      160,      170} /* CG,GC,C,T,C */
01652      , {      230,      210,      230,      200,      210} /* CG,GC,C,T,G */
01653      , {      170,      150,      170,      140,      150} /* CG,GC,C,T,T */
01654      }
01655      }
01656      , {{{      230,      190,      170,      190,      230} /* CG,GC,G,E,E */
01657      , {      210,      170,      150,      170,      210} /* CG,GC,G,E,A */
01658      , {      200,      160,      140,      160,      200} /* CG,GC,G,E,C */
01659      , {      230,      190,      170,      190,      230} /* CG,GC,G,E,G */
01660      , {      220,      180,      160,      180,      220} /* CG,GC,G,E,T */
01661      }
01662      , {{      220,      180,      160,      180,      220} /* CG,GC,G,A,E */
01663      , {      150,      110,      90,      110,      150} /* CG,GC,G,A,A */
01664      , {      180,      140,      120,      140,      180} /* CG,GC,G,A,C */
01665      , {      160,      120,      100,      120,      160} /* CG,GC,G,A,G */
01666      , {      220,      180,      160,      180,      220} /* CG,GC,G,A,T */
01667      }
01668      , {{      200,      160,      140,      160,      200} /* CG,GC,G,C,E */
01669      , {      180,      140,      120,      140,      180} /* CG,GC,G,C,A */
01670      , {      200,      160,      140,      160,      200} /* CG,GC,G,C,C */
01671      , {      180,      140,      120,      140,      180} /* CG,GC,G,C,G */
01672      , {      190,      150,      130,      150,      190} /* CG,GC,G,C,T */
01673      }
01674      , {{      220,      180,      160,      180,      220} /* CG,GC,G,G,E */
01675      , {      160,      120,      100,      120,      160} /* CG,GC,G,G,A */
01676      , {      130,      90,      70,      90,      130} /* CG,GC,G,G,C */
01677      , {      160,      120,      100,      120,      160} /* CG,GC,G,G,G */
01678      , {      220,      180,      160,      180,      220} /* CG,GC,G,G,T */
01679      }
01680      , {{      230,      190,      170,      190,      230} /* CG,GC,G,T,E */
01681      , {      210,      170,      150,      170,      210} /* CG,GC,G,T,A */
01682      , {      190,      150,      130,      150,      190} /* CG,GC,G,T,C */
01683      , {      230,      190,      170,      190,      230} /* CG,GC,G,T,G */
01684      , {      170,      130,      110,      130,      170} /* CG,GC,G,T,T */
01685      }
01686      }
01687      , {{{      260,      260,      210,      240,      190} /* CG,GC,T,E,E */
01688      , {      240,      240,      190,      220,      170} /* CG,GC,T,E,A */
01689      , {      230,      230,      180,      210,      160} /* CG,GC,T,E,C */
01690      , {      260,      260,      210,      240,      190} /* CG,GC,T,E,G */
01691      , {      250,      250,      200,      230,      180} /* CG,GC,T,E,T */
01692      }
01693      , {{      250,      250,      200,      230,      180} /* CG,GC,T,A,E */
01694      , {      180,      180,      130,      160,      110} /* CG,GC,T,A,A */
01695      , {      210,      210,      160,      190,      140} /* CG,GC,T,A,C */
01696      , {      190,      190,      140,      170,      120} /* CG,GC,T,A,G */
01697      , {      250,      250,      200,      230,      180} /* CG,GC,T,A,T */
01698      }
01699      , {{{      230,      230,      180,      210,      160} /* CG,GC,T,C,E */
01700      , {      210,      210,      160,      190,      140} /* CG,GC,T,C,A */
01701      , {      230,      230,      180,      210,      160} /* CG,GC,T,C,C */
01702      , {      210,      210,      160,      190,      140} /* CG,GC,T,C,G */
01703      , {      220,      220,      170,      200,      150} /* CG,GC,T,C,T */
01704      }
01705      , {{{      250,      250,      200,      230,      180} /* CG,GC,T,G,E */
01706      , {      190,      190,      140,      170,      120} /* CG,GC,T,G,A */
01707      , {      160,      160,      110,      140,      90} /* CG,GC,T,G,C */
01708      , {      190,      190,      140,      170,      120} /* CG,GC,T,G,G */
01709      , {      250,      250,      200,      230,      180} /* CG,GC,T,G,T */
01710      }
01711      , {{      260,      260,      210,      240,      190} /* CG,GC,T,T,E */
01712      , {      240,      240,      190,      220,      170} /* CG,GC,T,T,A */
01713      , {      220,      220,      170,      200,      150} /* CG,GC,T,T,C */
01714      , {      260,      260,      210,      240,      190} /* CG,GC,T,T,G */
01715      , {      200,      200,      150,      180,      130} /* CG,GC,T,T,T */
01716      }
01717      }
01718      }
01719      , {{{      290,      290,      260,      270,      270} /* CG,GT,E,E,E */
01720      , {      270,      270,      240,      250,      250} /* CG,GT,E,E,A */
01721      , {      270,      270,      240,      250,      250} /* CG,GT,E,E,C */

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01722      , {      290,      290,      260,      270,      270} /* CG,GT,E,E,G */
01723      , {      290,      290,      260,      270,      270} /* CG,GT,E,E,T */
01724      }
01725      , {{      290,      290,      260,      270,      270} /* CG,GT,E,A,E */
01726      , {      240,      240,      210,      220,      220} /* CG,GT,E,A,A */
01727      , {      270,      270,      240,      250,      250} /* CG,GT,E,A,C */
01728      , {      240,      240,      210,      220,      220} /* CG,GT,E,A,G */
01729      , {      290,      290,      260,      270,      270} /* CG,GT,E,A,T */
01730      }
01731      , {{      270,      270,      240,      250,      250} /* CG,GT,E,C,E */
01732      , {      270,      270,      240,      250,      250} /* CG,GT,E,C,A */
01733      , {      270,      270,      240,      250,      250} /* CG,GT,E,C,C */
01734      , {      250,      250,      220,      230,      230} /* CG,GT,E,C,G */
01735      , {      270,      270,      240,      250,      250} /* CG,GT,E,C,T */
01736      }
01737      , {{      290,      290,      260,      270,      270} /* CG,GT,E,G,E */
01738      , {      240,      240,      210,      220,      220} /* CG,GT,E,G,A */
01739      , {      250,      250,      220,      230,      230} /* CG,GT,E,G,C */
01740      , {      240,      240,      210,      220,      220} /* CG,GT,E,G,G */
01741      , {      290,      290,      260,      270,      270} /* CG,GT,E,G,T */
01742      }
01743      , {{      290,      290,      260,      270,      270} /* CG,GT,E,T,E */
01744      , {      270,      270,      240,      250,      250} /* CG,GT,E,T,A */
01745      , {      270,      270,      240,      250,      250} /* CG,GT,E,T,C */
01746      , {      290,      290,      260,      270,      270} /* CG,GT,E,T,G */
01747      , {      270,      270,      240,      250,      250} /* CG,GT,E,T,T */
01748      }
01749      }
01750      , {{{      270,      210,      240,      220,      270} /* CG,GT,A,E,E */
01751      , {      250,      190,      220,      200,      250} /* CG,GT,A,E,A */
01752      , {      250,      190,      220,      200,      250} /* CG,GT,A,E,C */
01753      , {      270,      210,      240,      220,      270} /* CG,GT,A,E,G */
01754      , {      270,      210,      240,      220,      270} /* CG,GT,A,E,T */
01755      }
01756      , {{      270,      210,      240,      220,      270} /* CG,GT,A,A,E */
01757      , {      220,      160,      190,      170,      220} /* CG,GT,A,A,A */
01758      , {      250,      190,      220,      200,      250} /* CG,GT,A,A,C */
01759      , {      220,      160,      190,      170,      220} /* CG,GT,A,A,G */
01760      , {      270,      210,      240,      220,      270} /* CG,GT,A,A,T */
01761      }
01762      , {{      250,      190,      220,      200,      250} /* CG,GT,A,C,E */
01763      , {      250,      190,      220,      200,      250} /* CG,GT,A,C,A */
01764      , {      250,      190,      220,      200,      250} /* CG,GT,A,C,C */
01765      , {      230,      170,      200,      180,      230} /* CG,GT,A,C,G */
01766      , {      250,      190,      220,      200,      250} /* CG,GT,A,C,T */
01767      }
01768      , {{      270,      210,      240,      220,      270} /* CG,GT,A,G,E */
01769      , {      220,      160,      190,      170,      220} /* CG,GT,A,G,A */
01770      , {      230,      170,      200,      180,      230} /* CG,GT,A,G,C */
01771      , {      220,      160,      190,      170,      220} /* CG,GT,A,G,G */
01772      , {      270,      210,      240,      220,      270} /* CG,GT,A,G,T */
01773      }
01774      , {{      270,      210,      240,      220,      270} /* CG,GT,A,T,E */
01775      , {      250,      190,      220,      200,      250} /* CG,GT,A,T,A */
01776      , {      250,      190,      220,      200,      250} /* CG,GT,A,T,C */
01777      , {      270,      210,      240,      220,      270} /* CG,GT,A,T,G */
01778      , {      250,      190,      220,      200,      250} /* CG,GT,A,T,T */
01779      }
01780      }
01781      , {{{      260,      240,      260,      230,      240} /* CG,GT,C,E,E */
01782      , {      240,      220,      240,      210,      220} /* CG,GT,C,E,A */
01783      , {      240,      220,      240,      210,      220} /* CG,GT,C,E,C */
01784      , {      260,      240,      260,      230,      240} /* CG,GT,C,E,G */
01785      , {      260,      240,      260,      230,      240} /* CG,GT,C,E,T */
01786      }
01787      , {{      260,      240,      260,      230,      240} /* CG,GT,C,A,E */
01788      , {      210,      190,      210,      180,      190} /* CG,GT,C,A,A */
01789      , {      240,      220,      240,      210,      220} /* CG,GT,C,A,C */
01790      , {      210,      190,      210,      180,      190} /* CG,GT,C,A,G */
01791      , {      260,      240,      260,      230,      240} /* CG,GT,C,A,T */
01792      }
01793      , {{      240,      220,      240,      210,      220} /* CG,GT,C,C,E */
01794      , {      240,      220,      240,      210,      220} /* CG,GT,C,C,A */
01795      , {      240,      220,      240,      210,      220} /* CG,GT,C,C,C */
01796      , {      220,      200,      220,      190,      200} /* CG,GT,C,C,G */
01797      , {      240,      220,      240,      210,      220} /* CG,GT,C,C,T */
01798      }
01799      , {{      260,      240,      260,      230,      240} /* CG,GT,C,G,E */
01800      , {      210,      190,      210,      180,      190} /* CG,GT,C,G,A */
01801      , {      220,      200,      220,      190,      200} /* CG,GT,C,G,C */
01802      , {      210,      190,      210,      180,      190} /* CG,GT,C,G,G */
01803      , {      260,      240,      260,      230,      240} /* CG,GT,C,G,T */
01804      }
01805      , {{      260,      240,      260,      230,      240} /* CG,GT,C,T,E */
01806      , {      240,      220,      240,      210,      220} /* CG,GT,C,T,A */
01807      , {      240,      220,      240,      210,      220} /* CG,GT,C,T,C */
01808      , {      260,      240,      260,      230,      240} /* CG,GT,C,T,G */

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01809      , {      240,      220,      240,      210,      220} /* CG,GT,C,T,T */
01810      }
01811      }
01812      ,{{{      260,      220,      200,      220,      260} /* CG,GT,G,E,E */
01813      , {      240,      200,      180,      200,      240} /* CG,GT,G,E,A */
01814      , {      240,      200,      180,      200,      240} /* CG,GT,G,E,C */
01815      , {      260,      220,      200,      220,      260} /* CG,GT,G,E,G */
01816      , {      260,      220,      200,      220,      260} /* CG,GT,G,E,T */
01817      }
01818      ,{{{      260,      220,      200,      220,      260} /* CG,GT,G,A,E */
01819      , {      210,      170,      150,      170,      210} /* CG,GT,G,A,A */
01820      , {      240,      200,      180,      200,      240} /* CG,GT,G,A,C */
01821      , {      210,      170,      150,      170,      210} /* CG,GT,G,A,G */
01822      , {      260,      220,      200,      220,      260} /* CG,GT,G,A,T */
01823      }
01824      ,{{{      240,      200,      180,      200,      240} /* CG,GT,G,C,E */
01825      , {      240,      200,      180,      200,      240} /* CG,GT,G,C,A */
01826      , {      240,      200,      180,      200,      240} /* CG,GT,G,C,C */
01827      , {      220,      180,      160,      180,      220} /* CG,GT,G,C,G */
01828      , {      240,      200,      180,      200,      240} /* CG,GT,G,C,T */
01829      }
01830      ,{{{      260,      220,      200,      220,      260} /* CG,GT,G,G,E */
01831      , {      210,      170,      150,      170,      210} /* CG,GT,G,G,A */
01832      , {      220,      180,      160,      180,      220} /* CG,GT,G,G,C */
01833      , {      210,      170,      150,      170,      210} /* CG,GT,G,G,G */
01834      , {      260,      220,      200,      220,      260} /* CG,GT,G,G,T */
01835      }
01836      ,{{{      260,      220,      200,      220,      260} /* CG,GT,G,T,E */
01837      , {      240,      200,      180,      200,      240} /* CG,GT,G,T,A */
01838      , {      240,      200,      180,      200,      240} /* CG,GT,G,T,C */
01839      , {      260,      220,      200,      220,      260} /* CG,GT,G,T,G */
01840      , {      240,      200,      180,      200,      240} /* CG,GT,G,T,T */
01841      }
01842      }
01843      ,{{{      290,      290,      240,      270,      220} /* CG,GT,T,E,E */
01844      , {      270,      270,      220,      250,      200} /* CG,GT,T,E,A */
01845      , {      270,      270,      220,      250,      200} /* CG,GT,T,E,C */
01846      , {      290,      290,      240,      270,      220} /* CG,GT,T,E,G */
01847      , {      290,      290,      240,      270,      220} /* CG,GT,T,E,T */
01848      }
01849      ,{{{      290,      290,      240,      270,      220} /* CG,GT,T,A,E */
01850      , {      240,      240,      190,      220,      170} /* CG,GT,T,A,A */
01851      , {      270,      270,      220,      250,      200} /* CG,GT,T,A,C */
01852      , {      240,      240,      190,      220,      170} /* CG,GT,T,A,G */
01853      , {      290,      290,      240,      270,      220} /* CG,GT,T,A,T */
01854      }
01855      ,{{{      270,      270,      220,      250,      200} /* CG,GT,T,C,E */
01856      , {      270,      270,      220,      250,      200} /* CG,GT,T,C,A */
01857      , {      270,      270,      220,      250,      200} /* CG,GT,T,C,C */
01858      , {      250,      250,      200,      230,      180} /* CG,GT,T,C,G */
01859      , {      270,      270,      220,      250,      200} /* CG,GT,T,C,T */
01860      }
01861      ,{{{      290,      290,      240,      270,      220} /* CG,GT,T,G,E */
01862      , {      240,      240,      190,      220,      170} /* CG,GT,T,G,A */
01863      , {      250,      250,      200,      230,      180} /* CG,GT,T,G,C */
01864      , {      240,      240,      190,      220,      170} /* CG,GT,T,G,G */
01865      , {      290,      290,      240,      270,      220} /* CG,GT,T,G,T */
01866      }
01867      ,{{{      290,      290,      240,      270,      220} /* CG,GT,T,T,E */
01868      , {      270,      270,      220,      250,      200} /* CG,GT,T,T,A */
01869      , {      270,      270,      220,      250,      200} /* CG,GT,T,T,C */
01870      , {      290,      290,      240,      270,      220} /* CG,GT,T,T,G */
01871      , {      270,      270,      220,      250,      200} /* CG,GT,T,T,T */
01872      }
01873      }
01874      }
01875      ,{{{      290,      290,      260,      270,      270} /* CG,TG,E,E,E */
01876      , {      290,      290,      260,      270,      270} /* CG,TG,E,E,A */
01877      , {      270,      270,      240,      250,      250} /* CG,TG,E,E,C */
01878      , {      290,      290,      260,      270,      270} /* CG,TG,E,E,G */
01879      , {      290,      290,      260,      270,      270} /* CG,TG,E,E,T */
01880      }
01881      ,{{{      290,      290,      260,      270,      270} /* CG,TG,E,A,E */
01882      , {      240,      240,      210,      220,      220} /* CG,TG,E,A,A */
01883      , {      270,      270,      240,      250,      250} /* CG,TG,E,A,C */
01884      , {      240,      240,      210,      220,      220} /* CG,TG,E,A,G */
01885      , {      290,      290,      260,      270,      270} /* CG,TG,E,A,T */
01886      }
01887      ,{{{      270,      270,      240,      250,      250} /* CG,TG,E,C,E */
01888      , {      270,      270,      240,      250,      250} /* CG,TG,E,C,A */
01889      , {      270,      270,      240,      250,      250} /* CG,TG,E,C,C */
01890      , {      240,      240,      210,      220,      220} /* CG,TG,E,C,G */
01891      , {      270,      270,      240,      250,      250} /* CG,TG,E,C,T */
01892      }
01893      ,{{{      290,      290,      260,      270,      270} /* CG,TG,E,G,E */
01894      , {      240,      240,      210,      220,      220} /* CG,TG,E,G,A */
01895      , {      260,      260,      230,      240,      240} /* CG,TG,E,G,C */

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01896 , { 240, 240, 210, 220, 220} /* CG, TG, E, G, G */
01897 , { 290, 290, 260, 270, 270} /* CG, TG, E, G, T */
01898 }
01899 , { { 290, 290, 260, 270, 270} /* CG, TG, E, T, E */
01900 , { 290, 290, 260, 270, 270} /* CG, TG, E, T, A */
01901 , { 270, 270, 240, 250, 250} /* CG, TG, E, T, C */
01902 , { 290, 290, 260, 270, 270} /* CG, TG, E, T, G */
01903 , { 270, 270, 240, 250, 250} /* CG, TG, E, T, T */
01904 }
01905 }
01906 , { { { 270, 210, 240, 220, 270} /* CG, TG, A, E, E */
01907 , { 270, 210, 240, 220, 270} /* CG, TG, A, E, A */
01908 , { 250, 190, 220, 200, 250} /* CG, TG, A, E, C */
01909 , { 270, 210, 240, 220, 270} /* CG, TG, A, E, G */
01910 , { 270, 210, 240, 220, 270} /* CG, TG, A, E, T */
01911 }
01912 , { { 270, 210, 240, 220, 270} /* CG, TG, A, A, E */
01913 , { 220, 160, 190, 170, 220} /* CG, TG, A, A, A */
01914 , { 250, 190, 220, 200, 250} /* CG, TG, A, A, C */
01915 , { 220, 160, 190, 170, 220} /* CG, TG, A, A, G */
01916 , { 270, 210, 240, 220, 270} /* CG, TG, A, A, T */
01917 }
01918 , { { 250, 190, 220, 200, 250} /* CG, TG, A, C, E */
01919 , { 250, 190, 220, 200, 250} /* CG, TG, A, C, A */
01920 , { 250, 190, 220, 200, 250} /* CG, TG, A, C, C */
01921 , { 220, 160, 190, 170, 220} /* CG, TG, A, C, G */
01922 , { 250, 190, 220, 200, 250} /* CG, TG, A, C, T */
01923 }
01924 , { { 270, 210, 240, 220, 270} /* CG, TG, A, G, E */
01925 , { 220, 160, 190, 170, 220} /* CG, TG, A, G, A */
01926 , { 240, 180, 210, 190, 240} /* CG, TG, A, G, C */
01927 , { 220, 160, 190, 170, 220} /* CG, TG, A, G, G */
01928 , { 270, 210, 240, 220, 270} /* CG, TG, A, G, T */
01929 }
01930 , { { 270, 210, 240, 220, 270} /* CG, TG, A, T, E */
01931 , { 270, 210, 240, 220, 270} /* CG, TG, A, T, A */
01932 , { 250, 190, 220, 200, 250} /* CG, TG, A, T, C */
01933 , { 270, 210, 240, 220, 270} /* CG, TG, A, T, G */
01934 , { 250, 190, 220, 200, 250} /* CG, TG, A, T, T */
01935 }
01936 }
01937 , { { { 260, 240, 260, 230, 240} /* CG, TG, C, E, E */
01938 , { 260, 240, 260, 230, 240} /* CG, TG, C, E, A */
01939 , { 240, 220, 240, 210, 220} /* CG, TG, C, E, C */
01940 , { 260, 240, 260, 230, 240} /* CG, TG, C, E, G */
01941 , { 260, 240, 260, 230, 240} /* CG, TG, C, E, T */
01942 }
01943 , { { 260, 240, 260, 230, 240} /* CG, TG, C, A, E */
01944 , { 210, 190, 210, 180, 190} /* CG, TG, C, A, A */
01945 , { 240, 220, 240, 210, 220} /* CG, TG, C, A, C */
01946 , { 210, 190, 210, 180, 190} /* CG, TG, C, A, G */
01947 , { 260, 240, 260, 230, 240} /* CG, TG, C, A, T */
01948 }
01949 , { { 240, 220, 240, 210, 220} /* CG, TG, C, C, E */
01950 , { 240, 220, 240, 210, 220} /* CG, TG, C, C, A */
01951 , { 240, 220, 240, 210, 220} /* CG, TG, C, C, C */
01952 , { 210, 190, 210, 180, 190} /* CG, TG, C, C, G */
01953 , { 240, 220, 240, 210, 220} /* CG, TG, C, C, T */
01954 }
01955 , { { 260, 240, 260, 230, 240} /* CG, TG, C, G, E */
01956 , { 210, 190, 210, 180, 190} /* CG, TG, C, G, A */
01957 , { 230, 210, 230, 200, 210} /* CG, TG, C, G, C */
01958 , { 210, 190, 210, 180, 190} /* CG, TG, C, G, G */
01959 , { 260, 240, 260, 230, 240} /* CG, TG, C, G, T */
01960 }
01961 , { { 260, 240, 260, 230, 240} /* CG, TG, C, T, E */
01962 , { 260, 240, 260, 230, 240} /* CG, TG, C, T, A */
01963 , { 240, 220, 240, 210, 220} /* CG, TG, C, T, C */
01964 , { 260, 240, 260, 230, 240} /* CG, TG, C, T, G */
01965 , { 240, 220, 240, 210, 220} /* CG, TG, C, T, T */
01966 }
01967 }
01968 , { { { 260, 220, 200, 220, 260} /* CG, TG, G, E, E */
01969 , { 260, 220, 200, 220, 260} /* CG, TG, G, E, A */
01970 , { 240, 200, 180, 200, 240} /* CG, TG, G, E, C */
01971 , { 260, 220, 200, 220, 260} /* CG, TG, G, E, G */
01972 , { 260, 220, 200, 220, 260} /* CG, TG, G, E, T */
01973 }
01974 , { { 260, 220, 200, 220, 260} /* CG, TG, G, A, E */
01975 , { 210, 170, 150, 170, 210} /* CG, TG, G, A, A */
01976 , { 240, 200, 180, 200, 240} /* CG, TG, G, A, C */
01977 , { 210, 170, 150, 170, 210} /* CG, TG, G, A, G */
01978 , { 260, 220, 200, 220, 260} /* CG, TG, G, A, T */
01979 }
01980 , { { 240, 200, 180, 200, 240} /* CG, TG, G, C, E */
01981 , { 240, 200, 180, 200, 240} /* CG, TG, G, C, A */
01982 , { 240, 200, 180, 200, 240} /* CG, TG, G, C, C */

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01983      , {      210,      170,      150,      170,      210} /* CG, TG, G, C, G */
01984      , {      240,      200,      180,      200,      240} /* CG, TG, G, C, T */
01985      }
01986      , {{      260,      220,      200,      220,      260} /* CG, TG, G, G, E */
01987      , {      210,      170,      150,      170,      210} /* CG, TG, G, G, A */
01988      , {      230,      190,      170,      190,      230} /* CG, TG, G, G, C */
01989      , {      210,      170,      150,      170,      210} /* CG, TG, G, G, G */
01990      , {      260,      220,      200,      220,      260} /* CG, TG, G, G, T */
01991      }
01992      , {{      260,      220,      200,      220,      260} /* CG, TG, G, T, E */
01993      , {      260,      220,      200,      220,      260} /* CG, TG, G, T, A */
01994      , {      240,      200,      180,      200,      240} /* CG, TG, G, T, C */
01995      , {      260,      220,      200,      220,      260} /* CG, TG, G, T, G */
01996      , {      240,      200,      180,      200,      240} /* CG, TG, G, T, T */
01997      }
01998      }
01999      , {{{      290,      290,      240,      270,      220} /* CG, TG, T, E, E */
02000      , {      290,      290,      240,      270,      220} /* CG, TG, T, E, A */
02001      , {      270,      270,      220,      250,      200} /* CG, TG, T, E, C */
02002      , {      290,      290,      240,      270,      220} /* CG, TG, T, E, G */
02003      , {      290,      290,      240,      270,      220} /* CG, TG, T, E, T */
02004      }
02005      , {{      290,      290,      240,      270,      220} /* CG, TG, T, A, E */
02006      , {      240,      240,      190,      220,      170} /* CG, TG, T, A, A */
02007      , {      270,      270,      220,      250,      200} /* CG, TG, T, A, C */
02008      , {      240,      240,      190,      220,      170} /* CG, TG, T, A, G */
02009      , {      290,      290,      240,      270,      220} /* CG, TG, T, A, T */
02010      }
02011      , {{{      270,      270,      220,      250,      200} /* CG, TG, T, C, E */
02012      , {      270,      270,      220,      250,      200} /* CG, TG, T, C, A */
02013      , {      270,      270,      220,      250,      200} /* CG, TG, T, C, C */
02014      , {      240,      240,      190,      220,      170} /* CG, TG, T, C, G */
02015      , {      270,      270,      220,      250,      200} /* CG, TG, T, C, T */
02016      }
02017      , {{      290,      290,      240,      270,      220} /* CG, TG, T, G, E */
02018      , {      240,      240,      190,      220,      170} /* CG, TG, T, G, A */
02019      , {      260,      260,      210,      240,      190} /* CG, TG, T, G, C */
02020      , {      240,      240,      190,      220,      170} /* CG, TG, T, G, G */
02021      , {      290,      290,      240,      270,      220} /* CG, TG, T, G, T */
02022      }
02023      , {{{      290,      290,      240,      270,      220} /* CG, TG, T, T, E */
02024      , {      290,      290,      240,      270,      220} /* CG, TG, T, T, A */
02025      , {      270,      270,      220,      250,      200} /* CG, TG, T, T, C */
02026      , {      290,      290,      240,      270,      220} /* CG, TG, T, T, G */
02027      , {      270,      270,      220,      250,      200} /* CG, TG, T, T, T */
02028      }
02029      }
02030      }
02031      , {{{ {      290,      290,      260,      270,      270} /* CG, AT, E, E, E */
02032      , {      290,      290,      260,      270,      270} /* CG, AT, E, E, A */
02033      , {      260,      260,      230,      240,      240} /* CG, AT, E, E, C */
02034      , {      290,      290,      260,      270,      270} /* CG, AT, E, E, G */
02035      , {      290,      290,      260,      270,      270} /* CG, AT, E, E, T */
02036      }
02037      , {{      290,      290,      260,      270,      270} /* CG, AT, E, A, E */
02038      , {      220,      220,      190,      200,      200} /* CG, AT, E, A, A */
02039      , {      240,      240,      210,      220,      220} /* CG, AT, E, A, C */
02040      , {      230,      230,      200,      210,      210} /* CG, AT, E, A, G */
02041      , {      290,      290,      260,      270,      270} /* CG, AT, E, A, T */
02042      }
02043      , {{      270,      270,      240,      250,      250} /* CG, AT, E, C, E */
02044      , {      240,      240,      210,      220,      220} /* CG, AT, E, C, A */
02045      , {      260,      260,      230,      240,      240} /* CG, AT, E, C, C */
02046      , {      270,      270,      240,      250,      250} /* CG, AT, E, C, G */
02047      , {      250,      250,      220,      230,      230} /* CG, AT, E, C, T */
02048      }
02049      , {{{      290,      290,      260,      270,      270} /* CG, AT, E, G, E */
02050      , {      230,      230,      200,      210,      210} /* CG, AT, E, G, A */
02051      , {      250,      250,      220,      230,      230} /* CG, AT, E, G, C */
02052      , {      230,      230,      200,      210,      210} /* CG, AT, E, G, G */
02053      , {      290,      290,      260,      270,      270} /* CG, AT, E, G, T */
02054      }
02055      , {{      290,      290,      260,      270,      270} /* CG, AT, E, T, E */
02056      , {      290,      290,      260,      270,      270} /* CG, AT, E, T, A */
02057      , {      250,      250,      220,      230,      230} /* CG, AT, E, T, C */
02058      , {      290,      290,      260,      270,      270} /* CG, AT, E, T, G */
02059      , {      230,      230,      200,      210,      210} /* CG, AT, E, T, T */
02060      }
02061      }
02062      , {{{ {      270,      210,      240,      220,      270} /* CG, AT, A, E, E */
02063      , {      270,      210,      240,      220,      270} /* CG, AT, A, E, A */
02064      , {      240,      180,      210,      190,      240} /* CG, AT, A, E, C */
02065      , {      270,      210,      240,      220,      270} /* CG, AT, A, E, G */
02066      , {      270,      210,      240,      220,      270} /* CG, AT, A, E, T */
02067      }
02068      , {{{      270,      210,      240,      220,      270} /* CG, AT, A, A, E */
02069      , {      200,      140,      170,      150,      200} /* CG, AT, A, A, A */

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02070      , {      220,      160,      190,      170,      220} /* CG,AT,A,A,C */
02071      , {      210,      150,      180,      160,      210} /* CG,AT,A,A,G */
02072      , {      270,      210,      240,      220,      270} /* CG,AT,A,A,T */
02073      }
02074      , {{      250,      190,      220,      200,      250} /* CG,AT,A,C,E */
02075      , {      220,      160,      190,      170,      220} /* CG,AT,A,C,A */
02076      , {      240,      180,      210,      190,      240} /* CG,AT,A,C,C */
02077      , {      250,      190,      220,      200,      250} /* CG,AT,A,C,G */
02078      , {      230,      170,      200,      180,      230} /* CG,AT,A,C,T */
02079      }
02080      , {{      270,      210,      240,      220,      270} /* CG,AT,A,G,E */
02081      , {      210,      150,      180,      160,      210} /* CG,AT,A,G,A */
02082      , {      230,      170,      200,      180,      230} /* CG,AT,A,G,C */
02083      , {      210,      150,      180,      160,      210} /* CG,AT,A,G,G */
02084      , {      270,      210,      240,      220,      270} /* CG,AT,A,G,T */
02085      }
02086      , {{      270,      210,      240,      220,      270} /* CG,AT,A,T,E */
02087      , {      270,      210,      240,      220,      270} /* CG,AT,A,T,A */
02088      , {      230,      170,      200,      180,      230} /* CG,AT,A,T,C */
02089      , {      270,      210,      240,      220,      270} /* CG,AT,A,T,G */
02090      , {      210,      150,      180,      160,      210} /* CG,AT,A,T,T */
02091      }
02092      }
02093      , {{{      260,      240,      260,      230,      240} /* CG,AT,C,E,E */
02094      , {      260,      240,      260,      230,      240} /* CG,AT,C,E,A */
02095      , {      230,      210,      230,      200,      210} /* CG,AT,C,E,C */
02096      , {      260,      240,      260,      230,      240} /* CG,AT,C,E,G */
02097      , {      260,      240,      260,      230,      240} /* CG,AT,C,E,T */
02098      }
02099      , {{      260,      240,      260,      230,      240} /* CG,AT,C,A,E */
02100      , {      190,      170,      190,      160,      170} /* CG,AT,C,A,A */
02101      , {      210,      190,      210,      180,      190} /* CG,AT,C,A,C */
02102      , {      200,      180,      200,      170,      180} /* CG,AT,C,A,G */
02103      , {      260,      240,      260,      230,      240} /* CG,AT,C,A,T */
02104      }
02105      , {{      240,      220,      240,      210,      220} /* CG,AT,C,C,E */
02106      , {      210,      190,      210,      180,      190} /* CG,AT,C,C,A */
02107      , {      230,      210,      230,      200,      210} /* CG,AT,C,C,C */
02108      , {      240,      220,      240,      210,      220} /* CG,AT,C,C,G */
02109      , {      220,      200,      220,      190,      200} /* CG,AT,C,C,T */
02110      }
02111      , {{      260,      240,      260,      230,      240} /* CG,AT,C,G,E */
02112      , {      200,      180,      200,      170,      180} /* CG,AT,C,G,A */
02113      , {      220,      200,      220,      190,      200} /* CG,AT,C,G,C */
02114      , {      200,      180,      200,      170,      180} /* CG,AT,C,G,G */
02115      , {      260,      240,      260,      230,      240} /* CG,AT,C,G,T */
02116      }
02117      , {{      260,      240,      260,      230,      240} /* CG,AT,C,T,E */
02118      , {      260,      240,      260,      230,      240} /* CG,AT,C,T,A */
02119      , {      220,      200,      220,      190,      200} /* CG,AT,C,T,C */
02120      , {      260,      240,      260,      230,      240} /* CG,AT,C,T,G */
02121      , {      200,      180,      200,      170,      180} /* CG,AT,C,T,T */
02122      }
02123      }
02124      , {{{      260,      220,      200,      220,      260} /* CG,AT,G,E,E */
02125      , {      260,      220,      200,      220,      260} /* CG,AT,G,E,A */
02126      , {      230,      190,      170,      190,      230} /* CG,AT,G,E,C */
02127      , {      260,      220,      200,      220,      260} /* CG,AT,G,E,G */
02128      , {      260,      220,      200,      220,      260} /* CG,AT,G,E,T */
02129      }
02130      , {{      260,      220,      200,      220,      260} /* CG,AT,G,A,E */
02131      , {      190,      150,      130,      150,      190} /* CG,AT,G,A,A */
02132      , {      210,      170,      150,      170,      210} /* CG,AT,G,A,C */
02133      , {      200,      160,      140,      160,      200} /* CG,AT,G,A,G */
02134      , {      260,      220,      200,      220,      260} /* CG,AT,G,A,T */
02135      }
02136      , {{      240,      200,      180,      200,      240} /* CG,AT,G,C,E */
02137      , {      210,      170,      150,      170,      210} /* CG,AT,G,C,A */
02138      , {      230,      190,      170,      190,      230} /* CG,AT,G,C,C */
02139      , {      240,      200,      180,      200,      240} /* CG,AT,G,C,G */
02140      , {      220,      180,      160,      180,      220} /* CG,AT,G,C,T */
02141      }
02142      , {{      260,      220,      200,      220,      260} /* CG,AT,G,G,E */
02143      , {      200,      160,      140,      160,      200} /* CG,AT,G,G,A */
02144      , {      220,      180,      160,      180,      220} /* CG,AT,G,G,C */
02145      , {      200,      160,      140,      160,      200} /* CG,AT,G,G,G */
02146      , {      260,      220,      200,      220,      260} /* CG,AT,G,G,T */
02147      }
02148      , {{      260,      220,      200,      220,      260} /* CG,AT,G,T,E */
02149      , {      260,      220,      200,      220,      260} /* CG,AT,G,T,A */
02150      , {      220,      180,      160,      180,      220} /* CG,AT,G,T,C */
02151      , {      260,      220,      200,      220,      260} /* CG,AT,G,T,G */
02152      , {      200,      160,      140,      160,      200} /* CG,AT,G,T,T */
02153      }
02154      }
02155      , {{{      290,      290,      240,      270,      220} /* CG,AT,T,E,E */
02156      , {      290,      290,      240,      270,      220} /* CG,AT,T,E,A */
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02157      , {      260,      260,      210,      240,      190} /* CG,AT,T,E,C */
02158      , {      290,      290,      240,      270,      220} /* CG,AT,T,E,G */
02159      , {      290,      290,      240,      270,      220} /* CG,AT,T,E,T */
02160      }
02161      , {{      290,      290,      240,      270,      220} /* CG,AT,T,A,E */
02162      , {      220,      220,      170,      200,      150} /* CG,AT,T,A,A */
02163      , {      240,      240,      190,      220,      170} /* CG,AT,T,A,C */
02164      , {      230,      230,      180,      210,      160} /* CG,AT,T,A,G */
02165      , {      290,      290,      240,      270,      220} /* CG,AT,T,A,T */
02166      }
02167      , {{      270,      270,      220,      250,      200} /* CG,AT,T,C,E */
02168      , {      240,      240,      190,      220,      170} /* CG,AT,T,C,A */
02169      , {      260,      260,      210,      240,      190} /* CG,AT,T,C,C */
02170      , {      270,      270,      220,      250,      200} /* CG,AT,T,C,G */
02171      , {      250,      250,      200,      230,      180} /* CG,AT,T,C,T */
02172      }
02173      , {{      290,      290,      240,      270,      220} /* CG,AT,T,G,E */
02174      , {      230,      230,      180,      210,      160} /* CG,AT,T,G,A */
02175      , {      250,      250,      200,      230,      180} /* CG,AT,T,G,C */
02176      , {      230,      230,      180,      210,      160} /* CG,AT,T,G,G */
02177      , {      290,      290,      240,      270,      220} /* CG,AT,T,G,T */
02178      }
02179      , {{      290,      290,      240,      270,      220} /* CG,AT,T,T,E */
02180      , {      290,      290,      240,      270,      220} /* CG,AT,T,T,A */
02181      , {      250,      250,      200,      230,      180} /* CG,AT,T,T,C */
02182      , {      290,      290,      240,      270,      220} /* CG,AT,T,T,G */
02183      , {      230,      230,      180,      210,      160} /* CG,AT,T,T,T */
02184      }
02185      }
02186      }
02187      , {{{      290,      290,      260,      270,      270} /* CG,TA,E,E,E */
02188      , {      290,      290,      260,      270,      270} /* CG,TA,E,E,A */
02189      , {      260,      260,      230,      240,      240} /* CG,TA,E,E,C */
02190      , {      290,      290,      260,      270,      270} /* CG,TA,E,E,G */
02191      , {      290,      290,      260,      270,      270} /* CG,TA,E,E,T */
02192      }
02193      , {{      290,      290,      260,      270,      270} /* CG,TA,E,A,E */
02194      , {      230,      230,      200,      210,      210} /* CG,TA,E,A,A */
02195      , {      240,      240,      210,      220,      220} /* CG,TA,E,A,C */
02196      , {      230,      230,      200,      210,      210} /* CG,TA,E,A,G */
02197      , {      290,      290,      260,      270,      270} /* CG,TA,E,A,T */
02198      }
02199      , {{      290,      290,      260,      270,      270} /* CG,TA,E,C,E */
02200      , {      240,      240,      210,      220,      220} /* CG,TA,E,C,A */
02201      , {      260,      260,      230,      240,      240} /* CG,TA,E,C,C */
02202      , {      290,      290,      260,      270,      270} /* CG,TA,E,C,G */
02203      , {      250,      250,      220,      230,      230} /* CG,TA,E,C,T */
02204      }
02205      , {{      280,      280,      250,      260,      260} /* CG,TA,E,G,E */
02206      , {      230,      230,      200,      210,      210} /* CG,TA,E,G,A */
02207      , {      240,      240,      210,      220,      220} /* CG,TA,E,G,C */
02208      , {      230,      230,      200,      210,      210} /* CG,TA,E,G,G */
02209      , {      280,      280,      250,      260,      260} /* CG,TA,E,G,T */
02210      }
02211      , {{      290,      290,      260,      270,      270} /* CG,TA,E,T,E */
02212      , {      290,      290,      260,      270,      270} /* CG,TA,E,T,A */
02213      , {      250,      250,      220,      230,      230} /* CG,TA,E,T,C */
02214      , {      290,      290,      260,      270,      270} /* CG,TA,E,T,G */
02215      , {      230,      230,      200,      210,      210} /* CG,TA,E,T,T */
02216      }
02217      }
02218      , {{{      270,      210,      240,      220,      270} /* CG,TA,A,E,E */
02219      , {      270,      210,      240,      220,      270} /* CG,TA,A,E,A */
02220      , {      240,      180,      210,      190,      240} /* CG,TA,A,E,C */
02221      , {      270,      210,      240,      220,      270} /* CG,TA,A,E,G */
02222      , {      270,      210,      240,      220,      270} /* CG,TA,A,E,T */
02223      }
02224      , {{      270,      210,      240,      220,      270} /* CG,TA,A,A,E */
02225      , {      210,      150,      180,      160,      210} /* CG,TA,A,A,A */
02226      , {      220,      160,      190,      170,      220} /* CG,TA,A,A,C */
02227      , {      210,      150,      180,      160,      210} /* CG,TA,A,A,G */
02228      , {      270,      210,      240,      220,      270} /* CG,TA,A,A,T */
02229      }
02230      , {{      270,      210,      240,      220,      270} /* CG,TA,A,C,E */
02231      , {      220,      160,      190,      170,      220} /* CG,TA,A,C,A */
02232      , {      240,      180,      210,      190,      240} /* CG,TA,A,C,C */
02233      , {      270,      210,      240,      220,      270} /* CG,TA,A,C,G */
02234      , {      230,      170,      200,      180,      230} /* CG,TA,A,C,T */
02235      }
02236      , {{      260,      200,      230,      210,      260} /* CG,TA,A,G,E */
02237      , {      210,      150,      180,      160,      210} /* CG,TA,A,G,A */
02238      , {      220,      160,      190,      170,      220} /* CG,TA,A,G,C */
02239      , {      210,      150,      180,      160,      210} /* CG,TA,A,G,G */
02240      , {      260,      200,      230,      210,      260} /* CG,TA,A,G,T */
02241      }
02242      , {{      270,      210,      240,      220,      270} /* CG,TA,A,T,E */
02243      , {      270,      210,      240,      220,      270} /* CG,TA,A,T,A */

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```
02244 , { 230, 170, 200, 180, 230} /* CG,TA,A,T,C */
02245 , { 270, 210, 240, 220, 270} /* CG,TA,A,T,G */
02246 , { 210, 150, 180, 160, 210} /* CG,TA,A,T,T */
02247 }
02248 }
02249 , {{ { 260, 240, 260, 230, 240} /* CG,TA,C,E,E */
02250 , { 260, 240, 260, 230, 240} /* CG,TA,C,E,A */
02251 , { 230, 210, 230, 200, 210} /* CG,TA,C,E,C */
02252 , { 260, 240, 260, 230, 240} /* CG,TA,C,E,G */
02253 , { 260, 240, 260, 230, 240} /* CG,TA,C,E,T */
02254 }
02255 , {{ { 260, 240, 260, 230, 240} /* CG,TA,C,A,E */
02256 , { 200, 180, 200, 170, 180} /* CG,TA,C,A,A */
02257 , { 210, 190, 210, 180, 190} /* CG,TA,C,A,C */
02258 , { 200, 180, 200, 170, 180} /* CG,TA,C,A,G */
02259 , { 260, 240, 260, 230, 240} /* CG,TA,C,A,T */
02260 }
02261 , {{ { 260, 240, 260, 230, 240} /* CG,TA,C,C,E */
02262 , { 210, 190, 210, 180, 190} /* CG,TA,C,C,A */
02263 , { 230, 210, 230, 200, 210} /* CG,TA,C,C,C */
02264 , { 260, 240, 260, 230, 240} /* CG,TA,C,C,G */
02265 , { 220, 200, 220, 190, 200} /* CG,TA,C,C,T */
02266 }
02267 , {{ { 250, 230, 250, 220, 230} /* CG,TA,C,G,E */
02268 , { 200, 180, 200, 170, 180} /* CG,TA,C,G,A */
02269 , { 210, 190, 210, 180, 190} /* CG,TA,C,G,C */
02270 , { 200, 180, 200, 170, 180} /* CG,TA,C,G,G */
02271 , { 250, 230, 250, 220, 230} /* CG,TA,C,G,T */
02272 }
02273 , {{ { 260, 240, 260, 230, 240} /* CG,TA,C,T,E */
02274 , { 260, 240, 260, 230, 240} /* CG,TA,C,T,A */
02275 , { 220, 200, 220, 190, 200} /* CG,TA,C,T,C */
02276 , { 260, 240, 260, 230, 240} /* CG,TA,C,T,G */
02277 , { 200, 180, 200, 170, 180} /* CG,TA,C,T,T */
02278 }
02279 }
02280 , {{ { 260, 220, 200, 220, 260} /* CG,TA,G,E,E */
02281 , { 260, 220, 200, 220, 260} /* CG,TA,G,E,A */
02282 , { 230, 190, 170, 190, 230} /* CG,TA,G,E,C */
02283 , { 260, 220, 200, 220, 260} /* CG,TA,G,E,G */
02284 , { 260, 220, 200, 220, 260} /* CG,TA,G,E,T */
02285 }
02286 , {{ { 260, 220, 200, 220, 260} /* CG,TA,G,A,E */
02287 , { 200, 160, 140, 160, 200} /* CG,TA,G,A,A */
02288 , { 210, 170, 150, 170, 210} /* CG,TA,G,A,C */
02289 , { 200, 160, 140, 160, 200} /* CG,TA,G,A,G */
02290 , { 260, 220, 200, 220, 260} /* CG,TA,G,A,T */
02291 }
02292 , {{ { 260, 220, 200, 220, 260} /* CG,TA,G,C,E */
02293 , { 210, 170, 150, 170, 210} /* CG,TA,G,C,A */
02294 , { 230, 190, 170, 190, 230} /* CG,TA,G,C,C */
02295 , { 260, 220, 200, 220, 260} /* CG,TA,G,C,G */
02296 , { 220, 180, 160, 180, 220} /* CG,TA,G,C,T */
02297 }
02298 , {{ { 250, 210, 190, 210, 250} /* CG,TA,G,G,E */
02299 , { 200, 160, 140, 160, 200} /* CG,TA,G,G,A */
02300 , { 210, 170, 150, 170, 210} /* CG,TA,G,G,C */
02301 , { 200, 160, 140, 160, 200} /* CG,TA,G,G,G */
02302 , { 250, 210, 190, 210, 250} /* CG,TA,G,G,T */
02303 }
02304 , {{ { 260, 220, 200, 220, 260} /* CG,TA,G,T,E */
02305 , { 260, 220, 200, 220, 260} /* CG,TA,G,T,A */
02306 , { 220, 180, 160, 180, 220} /* CG,TA,G,T,C */
02307 , { 260, 220, 200, 220, 260} /* CG,TA,G,T,G */
02308 , { 200, 160, 140, 160, 200} /* CG,TA,G,T,T */
02309 }
02310 }
02311 , {{ { 290, 290, 240, 270, 220} /* CG,TA,T,E,E */
02312 , { 290, 290, 240, 270, 220} /* CG,TA,T,E,A */
02313 , { 260, 260, 210, 240, 190} /* CG,TA,T,E,C */
02314 , { 290, 290, 240, 270, 220} /* CG,TA,T,E,G */
02315 , { 290, 290, 240, 270, 220} /* CG,TA,T,E,T */
02316 }
02317 , {{ { 290, 290, 240, 270, 220} /* CG,TA,T,A,E */
02318 , { 230, 230, 180, 210, 160} /* CG,TA,T,A,A */
02319 , { 240, 240, 190, 220, 170} /* CG,TA,T,A,C */
02320 , { 230, 230, 180, 210, 160} /* CG,TA,T,A,G */
02321 , { 290, 290, 240, 270, 220} /* CG,TA,T,A,T */
02322 }
02323 , {{ { 290, 290, 240, 270, 220} /* CG,TA,T,C,E */
02324 , { 240, 240, 190, 220, 170} /* CG,TA,T,C,A */
02325 , { 260, 260, 210, 240, 190} /* CG,TA,T,C,C */
02326 , { 290, 290, 240, 270, 220} /* CG,TA,T,C,G */
02327 , { 250, 250, 200, 230, 180} /* CG,TA,T,C,T */
02328 }
02329 , {{ { 280, 280, 230, 260, 210} /* CG,TA,T,G,E */
02330 , { 230, 230, 180, 210, 160} /* CG,TA,T,G,A */
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02331      , {      240,      240,      190,      220,      170} /* CG,TA,T,G,C */
02332      , {      230,      230,      180,      210,      160} /* CG,TA,T,G,G */
02333      , {      280,      280,      230,      260,      210} /* CG,TA,T,G,T */
02334      }
02335      , {{      290,      290,      240,      270,      220} /* CG,TA,T,T,E */
02336      , {      290,      290,      240,      270,      220} /* CG,TA,T,T,A */
02337      , {      250,      250,      200,      230,      180} /* CG,TA,T,T,C */
02338      , {      290,      290,      240,      270,      220} /* CG,TA,T,T,G */
02339      , {      230,      230,      180,      210,      160} /* CG,TA,T,T,T */
02340      }
02341      }
02342      }
02343      , {{{      290,      290,      260,      270,      270} /* CG,NN,E,E,E */
02344      , {      290,      290,      260,      270,      270} /* CG,NN,E,E,A */
02345      , {      270,      270,      240,      250,      250} /* CG,NN,E,E,C */
02346      , {      290,      290,      260,      270,      270} /* CG,NN,E,E,G */
02347      , {      290,      290,      260,      270,      270} /* CG,NN,E,E,T */
02348      }
02349      , {{      290,      290,      260,      270,      270} /* CG,NN,E,A,E */
02350      , {      240,      240,      210,      220,      220} /* CG,NN,E,A,A */
02351      , {      270,      270,      240,      250,      250} /* CG,NN,E,A,C */
02352      , {      240,      240,      210,      220,      220} /* CG,NN,E,A,G */
02353      , {      290,      290,      260,      270,      270} /* CG,NN,E,A,T */
02354      }
02355      , {{      290,      290,      260,      270,      270} /* CG,NN,E,C,E */
02356      , {      270,      270,      240,      250,      250} /* CG,NN,E,C,A */
02357      , {      270,      270,      240,      250,      250} /* CG,NN,E,C,C */
02358      , {      290,      290,      260,      270,      270} /* CG,NN,E,C,G */
02359      , {      270,      270,      240,      250,      250} /* CG,NN,E,C,T */
02360      }
02361      , {{      290,      290,      260,      270,      270} /* CG,NN,E,G,E */
02362      , {      240,      240,      210,      220,      220} /* CG,NN,E,G,A */
02363      , {      260,      260,      230,      240,      240} /* CG,NN,E,G,C */
02364      , {      240,      240,      210,      220,      220} /* CG,NN,E,G,G */
02365      , {      290,      290,      260,      270,      270} /* CG,NN,E,G,T */
02366      }
02367      , {{      290,      290,      260,      270,      270} /* CG,NN,E,T,E */
02368      , {      290,      290,      260,      270,      270} /* CG,NN,E,T,A */
02369      , {      270,      270,      240,      250,      250} /* CG,NN,E,T,C */
02370      , {      290,      290,      260,      270,      270} /* CG,NN,E,T,G */
02371      , {      270,      270,      240,      250,      250} /* CG,NN,E,T,T */
02372      }
02373      }
02374      , {{{      270,      210,      240,      220,      270} /* CG,NN,A,E,E */
02375      , {      270,      210,      240,      220,      270} /* CG,NN,A,E,A */
02376      , {      250,      190,      220,      200,      250} /* CG,NN,A,E,C */
02377      , {      270,      210,      240,      220,      270} /* CG,NN,A,E,G */
02378      , {      270,      210,      240,      220,      270} /* CG,NN,A,E,T */
02379      }
02380      , {{      270,      210,      240,      220,      270} /* CG,NN,A,A,E */
02381      , {      220,      160,      190,      170,      220} /* CG,NN,A,A,A */
02382      , {      250,      190,      220,      200,      250} /* CG,NN,A,A,C */
02383      , {      220,      160,      190,      170,      220} /* CG,NN,A,A,G */
02384      , {      270,      210,      240,      220,      270} /* CG,NN,A,A,T */
02385      }
02386      , {{      270,      210,      240,      220,      270} /* CG,NN,A,C,E */
02387      , {      250,      190,      220,      200,      250} /* CG,NN,A,C,A */
02388      , {      250,      190,      220,      200,      250} /* CG,NN,A,C,C */
02389      , {      270,      210,      240,      220,      270} /* CG,NN,A,C,G */
02390      , {      250,      190,      220,      200,      250} /* CG,NN,A,C,T */
02391      }
02392      , {{      270,      210,      240,      220,      270} /* CG,NN,A,G,E */
02393      , {      220,      160,      190,      170,      220} /* CG,NN,A,G,A */
02394      , {      240,      180,      210,      190,      240} /* CG,NN,A,G,C */
02395      , {      220,      160,      190,      170,      220} /* CG,NN,A,G,G */
02396      , {      270,      210,      240,      220,      270} /* CG,NN,A,G,T */
02397      }
02398      , {{      270,      210,      240,      220,      270} /* CG,NN,A,T,E */
02399      , {      270,      210,      240,      220,      270} /* CG,NN,A,T,A */
02400      , {      250,      190,      220,      200,      250} /* CG,NN,A,T,C */
02401      , {      270,      210,      240,      220,      270} /* CG,NN,A,T,G */
02402      , {      250,      190,      220,      200,      250} /* CG,NN,A,T,T */
02403      }
02404      }
02405      , {{{      260,      240,      260,      230,      240} /* CG,NN,C,E,E */
02406      , {      260,      240,      260,      230,      240} /* CG,NN,C,E,A */
02407      , {      240,      220,      240,      210,      220} /* CG,NN,C,E,C */
02408      , {      260,      240,      260,      230,      240} /* CG,NN,C,E,G */
02409      , {      260,      240,      260,      230,      240} /* CG,NN,C,E,T */
02410      }
02411      , {{      260,      240,      260,      230,      240} /* CG,NN,C,A,E */
02412      , {      210,      190,      210,      180,      190} /* CG,NN,C,A,A */
02413      , {      240,      220,      240,      210,      220} /* CG,NN,C,A,C */
02414      , {      210,      190,      210,      180,      190} /* CG,NN,C,A,G */
02415      , {      260,      240,      260,      230,      240} /* CG,NN,C,A,T */
02416      }
02417      , {{      260,      240,      260,      230,      240} /* CG,NN,C,C,E */

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02418 , { 240, 220, 240, 210, 220} /* CG,NN,C,C,A */
02419 , { 240, 220, 240, 210, 220} /* CG,NN,C,C,C */
02420 , { 260, 240, 260, 230, 240} /* CG,NN,C,C,G */
02421 , { 240, 220, 240, 210, 220} /* CG,NN,C,C,T */
02422 }
02423 , { { 260, 240, 260, 230, 240} /* CG,NN,C,G,E */
02424 , { 210, 190, 210, 180, 190} /* CG,NN,C,G,A */
02425 , { 230, 210, 230, 200, 210} /* CG,NN,C,G,C */
02426 , { 210, 190, 210, 180, 190} /* CG,NN,C,G,G */
02427 , { 260, 240, 260, 230, 240} /* CG,NN,C,G,T */
02428 }
02429 , { { 260, 240, 260, 230, 240} /* CG,NN,C,T,E */
02430 , { 260, 240, 260, 230, 240} /* CG,NN,C,T,A */
02431 , { 240, 220, 240, 210, 220} /* CG,NN,C,T,C */
02432 , { 260, 240, 260, 230, 240} /* CG,NN,C,T,G */
02433 , { 240, 220, 240, 210, 220} /* CG,NN,C,T,T */
02434 }
02435 }
02436 , { { { 260, 220, 200, 220, 260} /* CG,NN,G,E,E */
02437 , { 260, 220, 200, 220, 260} /* CG,NN,G,E,A */
02438 , { 240, 200, 180, 200, 240} /* CG,NN,G,E,C */
02439 , { 260, 220, 200, 220, 260} /* CG,NN,G,E,G */
02440 , { 260, 220, 200, 220, 260} /* CG,NN,G,E,T */
02441 }
02442 , { { 260, 220, 200, 220, 260} /* CG,NN,G,A,E */
02443 , { 210, 170, 150, 170, 210} /* CG,NN,G,A,A */
02444 , { 240, 200, 180, 200, 240} /* CG,NN,G,A,C */
02445 , { 210, 170, 150, 170, 210} /* CG,NN,G,A,G */
02446 , { 260, 220, 200, 220, 260} /* CG,NN,G,A,T */
02447 }
02448 , { { 260, 220, 200, 220, 260} /* CG,NN,G,C,E */
02449 , { 240, 200, 180, 200, 240} /* CG,NN,G,C,A */
02450 , { 240, 200, 180, 200, 240} /* CG,NN,G,C,C */
02451 , { 260, 220, 200, 220, 260} /* CG,NN,G,C,G */
02452 , { 240, 200, 180, 200, 240} /* CG,NN,G,C,T */
02453 }
02454 , { { 260, 220, 200, 220, 260} /* CG,NN,G,G,E */
02455 , { 210, 170, 150, 170, 210} /* CG,NN,G,G,A */
02456 , { 230, 190, 170, 190, 230} /* CG,NN,G,G,C */
02457 , { 210, 170, 150, 170, 210} /* CG,NN,G,G,G */
02458 , { 260, 220, 200, 220, 260} /* CG,NN,G,G,T */
02459 }
02460 , { { 260, 220, 200, 220, 260} /* CG,NN,G,T,E */
02461 , { 260, 220, 200, 220, 260} /* CG,NN,G,T,A */
02462 , { 240, 200, 180, 200, 240} /* CG,NN,G,T,C */
02463 , { 260, 220, 200, 220, 260} /* CG,NN,G,T,G */
02464 , { 240, 200, 180, 200, 240} /* CG,NN,G,T,T */
02465 }
02466 }
02467 , { { { 290, 290, 240, 270, 220} /* CG,NN,T,E,E */
02468 , { 290, 290, 240, 270, 220} /* CG,NN,T,E,A */
02469 , { 270, 270, 220, 250, 200} /* CG,NN,T,E,C */
02470 , { 290, 290, 240, 270, 220} /* CG,NN,T,E,G */
02471 , { 290, 290, 240, 270, 220} /* CG,NN,T,E,T */
02472 }
02473 , { { 290, 290, 240, 270, 220} /* CG,NN,T,A,E */
02474 , { 240, 240, 190, 220, 170} /* CG,NN,T,A,A */
02475 , { 270, 270, 220, 250, 200} /* CG,NN,T,A,C */
02476 , { 240, 240, 190, 220, 170} /* CG,NN,T,A,G */
02477 , { 290, 290, 240, 270, 220} /* CG,NN,T,A,T */
02478 }
02479 , { { { 290, 290, 240, 270, 220} /* CG,NN,T,C,E */
02480 , { 270, 270, 220, 250, 200} /* CG,NN,T,C,A */
02481 , { 270, 270, 220, 250, 200} /* CG,NN,T,C,C */
02482 , { 290, 290, 240, 270, 220} /* CG,NN,T,C,G */
02483 , { 270, 270, 220, 250, 200} /* CG,NN,T,C,T */
02484 }
02485 , { { 290, 290, 240, 270, 220} /* CG,NN,T,G,E */
02486 , { 240, 240, 190, 220, 170} /* CG,NN,T,G,A */
02487 , { 260, 260, 210, 240, 190} /* CG,NN,T,G,C */
02488 , { 240, 240, 190, 220, 170} /* CG,NN,T,G,G */
02489 , { 290, 290, 240, 270, 220} /* CG,NN,T,G,T */
02490 }
02491 , { { 290, 290, 240, 270, 220} /* CG,NN,T,T,E */
02492 , { 290, 290, 240, 270, 220} /* CG,NN,T,T,A */
02493 , { 270, 270, 220, 250, 200} /* CG,NN,T,T,C */
02494 , { 290, 290, 240, 270, 220} /* CG,NN,T,T,G */
02495 , { 270, 270, 220, 250, 200} /* CG,NN,T,T,T */
02496 }
02497 }
02498 }
02499 }
02500 , { { { { INF, INF, INF, INF, INF} /* GC,NP,E,E,E */
02501 , { INF, INF, INF, INF, INF} /* GC,NP,E,E,A */
02502 , { INF, INF, INF, INF, INF} /* GC,NP,E,E,C */
02503 , { INF, INF, INF, INF, INF} /* GC,NP,E,E,G */
02504 , { INF, INF, INF, INF, INF} /* GC,NP,E,E,T */
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02505     }
02506     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,E,A,E */
02507     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,A,A */
02508     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,A,C */
02509     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,A,G */
02510     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,A,T */
02511     }
02512     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,E,C,E */
02513     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,C,A */
02514     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,C,C */
02515     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,C,G */
02516     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,C,T */
02517     }
02518     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,E,G,E */
02519     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,G,A */
02520     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,G,C */
02521     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,G,G */
02522     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,G,T */
02523     }
02524     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,E,T,E */
02525     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,T,A */
02526     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,T,C */
02527     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,T,G */
02528     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,E,T,T */
02529     }
02530     }
02531     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,A,E,E */
02532     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,E,A */
02533     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,E,C */
02534     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,E,G */
02535     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,E,T */
02536     }
02537     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,A,A,E */
02538     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,A,A */
02539     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,A,C */
02540     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,A,G */
02541     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,A,T */
02542     }
02543     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,A,C,E */
02544     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,C,A */
02545     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,C,C */
02546     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,C,G */
02547     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,C,T */
02548     }
02549     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,A,G,E */
02550     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,G,A */
02551     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,G,C */
02552     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,G,G */
02553     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,G,T */
02554     }
02555     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,A,T,E */
02556     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,T,A */
02557     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,T,C */
02558     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,T,G */
02559     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,A,T,T */
02560     }
02561     }
02562     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,C,E,E */
02563     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,E,A */
02564     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,E,C */
02565     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,E,G */
02566     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,E,T */
02567     }
02568     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,C,A,E */
02569     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,A,A */
02570     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,A,C */
02571     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,A,G */
02572     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,A,T */
02573     }
02574     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,C,C,E */
02575     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,C,A */
02576     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,C,C */
02577     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,C,G */
02578     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,C,T */
02579     }
02580     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,C,G,E */
02581     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,G,A */
02582     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,G,C */
02583     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,G,G */
02584     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,G,T */
02585     }
02586     ,{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,C,T,E */
02587     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,T,A */
02588     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,T,C */
02589     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,T,G */
02590     ,{     INF,    INF,    INF,    INF,    INF} /* GC,NP,C,T,T */
02591     }

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02592     }
02593     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,G,E,E */
02594     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,E,A */
02595     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,E,C */
02596     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,E,G */
02597     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,E,T */
02598     }
02599     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,G,A,E */
02600     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,A,A */
02601     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,A,C */
02602     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,A,G */
02603     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,A,T */
02604     }
02605     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,G,C,E */
02606     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,C,A */
02607     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,C,C */
02608     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,C,G */
02609     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,C,T */
02610     }
02611     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,G,G,E */
02612     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,G,A */
02613     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,G,C */
02614     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,G,G */
02615     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,G,T */
02616     }
02617     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,G,T,E */
02618     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,T,A */
02619     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,T,C */
02620     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,T,G */
02621     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,G,T,T */
02622     }
02623     }
02624     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,T,E,E */
02625     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,E,A */
02626     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,E,C */
02627     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,E,G */
02628     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,E,T */
02629     }
02630     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,T,A,E */
02631     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,A,A */
02632     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,A,C */
02633     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,A,G */
02634     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,A,T */
02635     }
02636     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,T,C,E */
02637     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,C,A */
02638     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,C,C */
02639     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,C,G */
02640     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,C,T */
02641     }
02642     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,T,G,E */
02643     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,G,A */
02644     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,G,C */
02645     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,G,G */
02646     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,G,T */
02647     }
02648     ,{{{    INF,    INF,    INF,    INF,    INF} /* GC,NP,T,T,E */
02649     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,T,A */
02650     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,T,C */
02651     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,T,G */
02652     ,{      INF,    INF,    INF,    INF,    INF} /* GC,NP,T,T,T */
02653     }
02654     }
02655     }
02656     ,{{{    260,    250,    230,    250,    260} /* GC,CG,E,E,E */
02657     ,{      240,    230,    210,    230,    240} /* GC,CG,E,E,A */
02658     ,{      230,    220,    200,    220,    230} /* GC,CG,E,E,C */
02659     ,{      230,    220,    200,    220,    230} /* GC,CG,E,E,G */
02660     ,{      260,    250,    230,    250,    260} /* GC,CG,E,E,T */
02661     }
02662     ,{{{    260,    250,    230,    250,    260} /* GC,CG,E,A,E */
02663     ,{      180,    170,    150,    170,    180} /* GC,CG,E,A,A */
02664     ,{      210,    200,    180,    200,    210} /* GC,CG,E,A,C */
02665     ,{      190,    180,    160,    180,    190} /* GC,CG,E,A,G */
02666     ,{      260,    250,    230,    250,    260} /* GC,CG,E,A,T */
02667     }
02668     ,{{{    230,    220,    200,    220,    230} /* GC,CG,E,C,E */
02669     ,{      210,    200,    180,    200,    210} /* GC,CG,E,C,A */
02670     ,{      230,    220,    200,    220,    230} /* GC,CG,E,C,C */
02671     ,{      170,    160,    140,    160,    170} /* GC,CG,E,C,G */
02672     ,{      210,    200,    180,    200,    210} /* GC,CG,E,C,T */
02673     }
02674     ,{{{    240,    230,    210,    230,    240} /* GC,CG,E,G,E */
02675     ,{      190,    180,    160,    180,    190} /* GC,CG,E,G,A */
02676     ,{      200,    190,    170,    190,    200} /* GC,CG,E,G,C */
02677     ,{      190,    180,    160,    180,    190} /* GC,CG,E,G,G */
02678     ,{      240,    230,    210,    230,    240} /* GC,CG,E,G,T */

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02679      }
02680      ,{{      240,      230,      210,      230,      240} /* GC,CG,E,T,E */
02681      ,{      240,      230,      210,      230,      240} /* GC,CG,E,T,A */
02682      ,{      210,      200,      180,      200,      210} /* GC,CG,E,T,C */
02683      ,{      230,      220,      200,      220,      230} /* GC,CG,E,T,G */
02684      ,{      190,      180,      160,      180,      190} /* GC,CG,E,T,T */
02685      }
02686      }
02687      ,{{{      240,      180,      210,      190,      240} /* GC,CG,A,E,E */
02688      ,{      220,      160,      190,      170,      220} /* GC,CG,A,E,A */
02689      ,{      210,      150,      180,      160,      210} /* GC,CG,A,E,C */
02690      ,{      210,      150,      180,      160,      210} /* GC,CG,A,E,G */
02691      ,{      240,      180,      210,      190,      240} /* GC,CG,A,E,T */
02692      }
02693      ,{{      240,      180,      210,      190,      240} /* GC,CG,A,A,E */
02694      ,{      160,      100,      130,      110,      160} /* GC,CG,A,A,A */
02695      ,{      190,      130,      160,      140,      190} /* GC,CG,A,A,C */
02696      ,{      170,      110,      140,      120,      170} /* GC,CG,A,A,G */
02697      ,{      240,      180,      210,      190,      240} /* GC,CG,A,A,T */
02698      }
02699      ,{{{      210,      150,      180,      160,      210} /* GC,CG,A,C,E */
02700      ,{      190,      130,      160,      140,      190} /* GC,CG,A,C,A */
02701      ,{      210,      150,      180,      160,      210} /* GC,CG,A,C,C */
02702      ,{      150,      90,      120,      100,      150} /* GC,CG,A,C,G */
02703      ,{      190,      130,      160,      140,      190} /* GC,CG,A,C,T */
02704      }
02705      ,{{{      220,      160,      190,      170,      220} /* GC,CG,A,G,E */
02706      ,{      170,      110,      140,      120,      170} /* GC,CG,A,G,A */
02707      ,{      180,      120,      150,      130,      180} /* GC,CG,A,G,C */
02708      ,{      170,      110,      140,      120,      170} /* GC,CG,A,G,G */
02709      ,{      220,      160,      190,      170,      220} /* GC,CG,A,G,T */
02710      }
02711      ,{{{      220,      160,      190,      170,      220} /* GC,CG,A,T,E */
02712      ,{      220,      160,      190,      170,      220} /* GC,CG,A,T,A */
02713      ,{      190,      130,      160,      140,      190} /* GC,CG,A,T,C */
02714      ,{      210,      150,      180,      160,      210} /* GC,CG,A,T,G */
02715      ,{      170,      110,      140,      120,      170} /* GC,CG,A,T,T */
02716      }
02717      }
02718      ,{{{      230,      210,      230,      160,      220} /* GC,CG,C,E,E */
02719      ,{      210,      190,      210,      140,      200} /* GC,CG,C,E,A */
02720      ,{      200,      180,      200,      130,      190} /* GC,CG,C,E,C */
02721      ,{      200,      180,      200,      130,      190} /* GC,CG,C,E,G */
02722      ,{      230,      210,      230,      160,      220} /* GC,CG,C,E,T */
02723      }
02724      ,{{{      230,      210,      230,      160,      220} /* GC,CG,C,A,E */
02725      ,{      150,      130,      150,      80,      140} /* GC,CG,C,A,A */
02726      ,{      180,      160,      180,      110,      170} /* GC,CG,C,A,C */
02727      ,{      160,      140,      160,      90,      150} /* GC,CG,C,A,G */
02728      ,{      230,      210,      230,      160,      220} /* GC,CG,C,A,T */
02729      }
02730      ,{{{      200,      180,      200,      130,      190} /* GC,CG,C,C,E */
02731      ,{      180,      160,      180,      110,      170} /* GC,CG,C,C,A */
02732      ,{      200,      180,      200,      130,      190} /* GC,CG,C,C,C */
02733      ,{      140,      120,      140,      70,      130} /* GC,CG,C,C,G */
02734      ,{      180,      160,      180,      110,      170} /* GC,CG,C,C,T */
02735      }
02736      ,{{{      210,      190,      210,      140,      200} /* GC,CG,C,G,E */
02737      ,{      160,      140,      160,      90,      150} /* GC,CG,C,G,A */
02738      ,{      170,      150,      170,      100,      160} /* GC,CG,C,G,C */
02739      ,{      160,      140,      160,      90,      150} /* GC,CG,C,G,G */
02740      ,{      210,      190,      210,      140,      200} /* GC,CG,C,G,T */
02741      }
02742      ,{{{      210,      190,      210,      140,      200} /* GC,CG,C,T,E */
02743      ,{      210,      190,      210,      140,      200} /* GC,CG,C,T,A */
02744      ,{      180,      160,      180,      110,      170} /* GC,CG,C,T,C */
02745      ,{      200,      180,      200,      130,      190} /* GC,CG,C,T,G */
02746      ,{      160,      140,      160,      90,      150} /* GC,CG,C,T,T */
02747      }
02748      }
02749      ,{{{      260,      190,      210,      190,      260} /* GC,CG,G,E,E */
02750      ,{      240,      170,      190,      170,      240} /* GC,CG,G,E,A */
02751      ,{      230,      160,      180,      160,      230} /* GC,CG,G,E,C */
02752      ,{      230,      160,      180,      160,      230} /* GC,CG,G,E,G */
02753      ,{      260,      190,      210,      190,      260} /* GC,CG,G,E,T */
02754      }
02755      ,{{{      260,      190,      210,      190,      260} /* GC,CG,G,A,E */
02756      ,{      180,      110,      130,      110,      180} /* GC,CG,G,A,A */
02757      ,{      210,      140,      160,      140,      210} /* GC,CG,G,A,C */
02758      ,{      190,      120,      140,      120,      190} /* GC,CG,G,A,G */
02759      ,{      260,      190,      210,      190,      260} /* GC,CG,G,A,T */
02760      }
02761      ,{{{      230,      160,      180,      160,      230} /* GC,CG,G,C,E */
02762      ,{      210,      140,      160,      140,      210} /* GC,CG,G,C,A */
02763      ,{      230,      160,      180,      160,      230} /* GC,CG,G,C,C */
02764      ,{      170,      100,      120,      100,      170} /* GC,CG,G,C,G */
02765      ,{      210,      140,      160,      140,      210} /* GC,CG,G,C,T */

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02766     }
02767     ,{{      240,      170,      190,      170,      240} /* GC,CG,G,G,E */
02768     ,{      190,      120,      140,      120,      190} /* GC,CG,G,G,A */
02769     ,{      200,      130,      150,      130,      200} /* GC,CG,G,G,C */
02770     ,{      190,      120,      140,      120,      190} /* GC,CG,G,G,G */
02771     ,{      240,      170,      190,      170,      240} /* GC,CG,G,G,T */
02772     }
02773     ,{{      240,      170,      190,      170,      240} /* GC,CG,G,T,E */
02774     ,{      240,      170,      190,      170,      240} /* GC,CG,G,T,A */
02775     ,{      210,      140,      160,      140,      210} /* GC,CG,G,T,C */
02776     ,{      230,      160,      180,      160,      230} /* GC,CG,G,T,G */
02777     ,{      190,      120,      140,      120,      190} /* GC,CG,G,T,T */
02778     }
02779     }
02780     ,{{{      250,      250,      220,      250,      200} /* GC,CG,T,E,E */
02781     ,{      230,      230,      200,      230,      180} /* GC,CG,T,E,A */
02782     ,{      220,      220,      190,      220,      170} /* GC,CG,T,E,C */
02783     ,{      220,      220,      190,      220,      170} /* GC,CG,T,E,G */
02784     ,{      250,      250,      220,      250,      200} /* GC,CG,T,E,T */
02785     }
02786     ,{{      250,      250,      220,      250,      200} /* GC,CG,T,A,E */
02787     ,{      170,      170,      140,      170,      120} /* GC,CG,T,A,A */
02788     ,{      200,      200,      170,      200,      150} /* GC,CG,T,A,C */
02789     ,{      180,      180,      150,      180,      130} /* GC,CG,T,A,G */
02790     ,{      250,      250,      220,      250,      200} /* GC,CG,T,A,T */
02791     }
02792     ,{{{      220,      220,      190,      220,      170} /* GC,CG,T,C,E */
02793     ,{      200,      200,      170,      200,      150} /* GC,CG,T,C,A */
02794     ,{      220,      220,      190,      220,      170} /* GC,CG,T,C,C */
02795     ,{      160,      160,      130,      160,      110} /* GC,CG,T,C,G */
02796     ,{      200,      200,      170,      200,      150} /* GC,CG,T,C,T */
02797     }
02798     ,{{{      230,      230,      200,      230,      180} /* GC,CG,T,G,E */
02799     ,{      180,      180,      150,      180,      130} /* GC,CG,T,G,A */
02800     ,{      190,      190,      160,      190,      140} /* GC,CG,T,G,C */
02801     ,{      180,      180,      150,      180,      130} /* GC,CG,T,G,G */
02802     ,{      230,      230,      200,      230,      180} /* GC,CG,T,G,T */
02803     }
02804     ,{{{      230,      230,      200,      230,      180} /* GC,CG,T,T,E */
02805     ,{      230,      230,      200,      230,      180} /* GC,CG,T,T,A */
02806     ,{      200,      200,      170,      200,      150} /* GC,CG,T,T,C */
02807     ,{      220,      220,      190,      220,      170} /* GC,CG,T,T,G */
02808     ,{      180,      180,      150,      180,      130} /* GC,CG,T,T,T */
02809     }
02810     }
02811     }
02812     ,{{{      250,      240,      220,      240,      250} /* GC,GC,E,E,E */
02813     ,{      230,      220,      200,      220,      230} /* GC,GC,E,E,A */
02814     ,{      220,      210,      190,      210,      220} /* GC,GC,E,E,C */
02815     ,{      250,      240,      220,      240,      250} /* GC,GC,E,E,G */
02816     ,{      240,      230,      210,      230,      240} /* GC,GC,E,E,T */
02817     }
02818     ,{{{      240,      230,      210,      230,      240} /* GC,GC,E,A,E */
02819     ,{      170,      160,      140,      160,      170} /* GC,GC,E,A,A */
02820     ,{      200,      190,      170,      190,      200} /* GC,GC,E,A,C */
02821     ,{      180,      170,      150,      170,      180} /* GC,GC,E,A,G */
02822     ,{      240,      230,      210,      230,      240} /* GC,GC,E,A,T */
02823     }
02824     ,{{{      220,      210,      190,      210,      220} /* GC,GC,E,C,E */
02825     ,{      200,      190,      170,      190,      200} /* GC,GC,E,C,A */
02826     ,{      220,      210,      190,      210,      220} /* GC,GC,E,C,C */
02827     ,{      200,      190,      170,      190,      200} /* GC,GC,E,C,G */
02828     ,{      210,      200,      180,      200,      210} /* GC,GC,E,C,T */
02829     }
02830     ,{{{      240,      230,      210,      230,      240} /* GC,GC,E,G,E */
02831     ,{      180,      170,      150,      170,      180} /* GC,GC,E,G,A */
02832     ,{      150,      140,      120,      140,      150} /* GC,GC,E,G,C */
02833     ,{      180,      170,      150,      170,      180} /* GC,GC,E,G,G */
02834     ,{      240,      230,      210,      230,      240} /* GC,GC,E,G,T */
02835     }
02836     ,{{{      250,      240,      220,      240,      250} /* GC,GC,E,T,E */
02837     ,{      230,      220,      200,      220,      230} /* GC,GC,E,T,A */
02838     ,{      210,      200,      180,      200,      210} /* GC,GC,E,T,C */
02839     ,{      250,      240,      220,      240,      250} /* GC,GC,E,T,G */
02840     ,{      190,      180,      160,      180,      190} /* GC,GC,E,T,T */
02841     }
02842     }
02843     ,{{{      230,      170,      200,      180,      230} /* GC,GC,A,E,E */
02844     ,{      210,      150,      180,      160,      210} /* GC,GC,A,E,A */
02845     ,{      200,      140,      170,      150,      200} /* GC,GC,A,E,C */
02846     ,{      230,      170,      200,      180,      230} /* GC,GC,A,E,G */
02847     ,{      220,      160,      190,      170,      220} /* GC,GC,A,E,T */
02848     }
02849     ,{{{      220,      160,      190,      170,      220} /* GC,GC,A,A,E */
02850     ,{      150,      90,      120,      100,      150} /* GC,GC,A,A,A */
02851     ,{      180,      120,      150,      130,      180} /* GC,GC,A,A,C */
02852     ,{      160,      100,      130,      110,      160} /* GC,GC,A,A,G */

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02853      , {      220,      160,      190,      170,      220} /* GC,GC,A,A,T */
02854      }
02855      , { {      200,      140,      170,      150,      200} /* GC,GC,A,C,E */
02856      , {      180,      120,      150,      130,      180} /* GC,GC,A,C,A */
02857      , {      200,      140,      170,      150,      200} /* GC,GC,A,C,C */
02858      , {      180,      120,      150,      130,      180} /* GC,GC,A,C,G */
02859      , {      190,      130,      160,      140,      190} /* GC,GC,A,C,T */
02860      }
02861      , { {      220,      160,      190,      170,      220} /* GC,GC,A,G,E */
02862      , {      160,      100,      130,      110,      160} /* GC,GC,A,G,A */
02863      , {      130,      70,      100,      80,      130} /* GC,GC,A,G,C */
02864      , {      160,      100,      130,      110,      160} /* GC,GC,A,G,G */
02865      , {      220,      160,      190,      170,      220} /* GC,GC,A,G,T */
02866      }
02867      , { {      230,      170,      200,      180,      230} /* GC,GC,A,T,E */
02868      , {      210,      150,      180,      160,      210} /* GC,GC,A,T,A */
02869      , {      190,      130,      160,      140,      190} /* GC,GC,A,T,C */
02870      , {      230,      170,      200,      180,      230} /* GC,GC,A,T,G */
02871      , {      170,      110,      140,      120,      170} /* GC,GC,A,T,T */
02872      }
02873      }
02874      , { { {      220,      200,      220,      150,      210} /* GC,GC,C,E,E */
02875      , {      200,      180,      200,      130,      190} /* GC,GC,C,E,A */
02876      , {      190,      170,      190,      120,      180} /* GC,GC,C,E,C */
02877      , {      220,      200,      220,      150,      210} /* GC,GC,C,E,G */
02878      , {      210,      190,      210,      140,      200} /* GC,GC,C,E,T */
02879      }
02880      , { {      210,      190,      210,      140,      200} /* GC,GC,C,A,E */
02881      , {      140,      120,      140,      70,      130} /* GC,GC,C,A,A */
02882      , {      170,      150,      170,      100,      160} /* GC,GC,C,A,C */
02883      , {      150,      130,      150,      80,      140} /* GC,GC,C,A,G */
02884      , {      210,      190,      210,      140,      200} /* GC,GC,C,A,T */
02885      }
02886      , { {      190,      170,      190,      120,      180} /* GC,GC,C,C,E */
02887      , {      170,      150,      170,      100,      160} /* GC,GC,C,C,A */
02888      , {      190,      170,      190,      120,      180} /* GC,GC,C,C,C */
02889      , {      170,      150,      170,      100,      160} /* GC,GC,C,C,G */
02890      , {      180,      160,      180,      110,      170} /* GC,GC,C,C,T */
02891      }
02892      , { {      210,      190,      210,      140,      200} /* GC,GC,C,G,E */
02893      , {      150,      130,      150,      80,      140} /* GC,GC,C,G,A */
02894      , {      120,      100,      120,      50,      110} /* GC,GC,C,G,C */
02895      , {      150,      130,      150,      80,      140} /* GC,GC,C,G,G */
02896      , {      210,      190,      210,      140,      200} /* GC,GC,C,G,T */
02897      }
02898      , { {      220,      200,      220,      150,      210} /* GC,GC,C,T,E */
02899      , {      200,      180,      200,      130,      190} /* GC,GC,C,T,A */
02900      , {      180,      160,      180,      110,      170} /* GC,GC,C,T,C */
02901      , {      220,      200,      220,      150,      210} /* GC,GC,C,T,G */
02902      , {      160,      140,      160,      90,      150} /* GC,GC,C,T,T */
02903      }
02904      }
02905      , { { {      250,      180,      200,      180,      250} /* GC,GC,G,E,E */
02906      , {      230,      160,      180,      160,      230} /* GC,GC,G,E,A */
02907      , {      220,      150,      170,      150,      220} /* GC,GC,G,E,C */
02908      , {      250,      180,      200,      180,      250} /* GC,GC,G,E,G */
02909      , {      240,      170,      190,      170,      240} /* GC,GC,G,E,T */
02910      }
02911      , { {      240,      170,      190,      170,      240} /* GC,GC,G,A,E */
02912      , {      170,      100,      120,      100,      170} /* GC,GC,G,A,A */
02913      , {      200,      130,      150,      130,      200} /* GC,GC,G,A,C */
02914      , {      180,      110,      130,      110,      180} /* GC,GC,G,A,G */
02915      , {      240,      170,      190,      170,      240} /* GC,GC,G,A,T */
02916      }
02917      , { {      220,      150,      170,      150,      220} /* GC,GC,G,C,E */
02918      , {      200,      130,      150,      130,      200} /* GC,GC,G,C,A */
02919      , {      220,      150,      170,      150,      220} /* GC,GC,G,C,C */
02920      , {      200,      130,      150,      130,      200} /* GC,GC,G,C,G */
02921      , {      210,      140,      160,      140,      210} /* GC,GC,G,C,T */
02922      }
02923      , { {      240,      170,      190,      170,      240} /* GC,GC,G,G,E */
02924      , {      180,      110,      130,      110,      180} /* GC,GC,G,G,A */
02925      , {      150,      80,      100,      80,      150} /* GC,GC,G,G,C */
02926      , {      180,      110,      130,      110,      180} /* GC,GC,G,G,G */
02927      , {      240,      170,      190,      170,      240} /* GC,GC,G,G,T */
02928      }
02929      , { {      250,      180,      200,      180,      250} /* GC,GC,G,T,E */
02930      , {      230,      160,      180,      160,      230} /* GC,GC,G,T,A */
02931      , {      210,      140,      160,      140,      210} /* GC,GC,G,T,C */
02932      , {      250,      180,      200,      180,      250} /* GC,GC,G,T,G */
02933      , {      190,      120,      140,      120,      190} /* GC,GC,G,T,T */
02934      }
02935      }
02936      , { { {      240,      240,      210,      240,      190} /* GC,GC,T,E,E */
02937      , {      220,      220,      190,      220,      170} /* GC,GC,T,E,A */
02938      , {      210,      210,      180,      210,      160} /* GC,GC,T,E,C */
02939      , {      240,      240,      210,      240,      190} /* GC,GC,T,E,G */

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02940      , {      230,      230,      200,      230,      180} /* GC,GC,T,E,T */
02941      }
02942      , {{      230,      230,      200,      230,      180} /* GC,GC,T,A,E */
02943      , {      160,      160,      130,      160,      110} /* GC,GC,T,A,A */
02944      , {      190,      190,      160,      190,      140} /* GC,GC,T,A,C */
02945      , {      170,      170,      140,      170,      120} /* GC,GC,T,A,G */
02946      , {      230,      230,      200,      230,      180} /* GC,GC,T,A,T */
02947      }
02948      , {{      210,      210,      180,      210,      160} /* GC,GC,T,C,E */
02949      , {      190,      190,      160,      190,      140} /* GC,GC,T,C,A */
02950      , {      210,      210,      180,      210,      160} /* GC,GC,T,C,C */
02951      , {      190,      190,      160,      190,      140} /* GC,GC,T,C,G */
02952      , {      200,      200,      170,      200,      150} /* GC,GC,T,C,T */
02953      }
02954      , {{      230,      230,      200,      230,      180} /* GC,GC,T,G,E */
02955      , {      170,      170,      140,      170,      120} /* GC,GC,T,G,A */
02956      , {      140,      140,      110,      140,      90} /* GC,GC,T,G,C */
02957      , {      170,      170,      140,      170,      120} /* GC,GC,T,G,G */
02958      , {      230,      230,      200,      230,      180} /* GC,GC,T,G,T */
02959      }
02960      , {{      240,      240,      210,      240,      190} /* GC,GC,T,T,E */
02961      , {      220,      220,      190,      220,      170} /* GC,GC,T,T,A */
02962      , {      200,      200,      170,      200,      150} /* GC,GC,T,T,C */
02963      , {      240,      240,      210,      240,      190} /* GC,GC,T,T,G */
02964      , {      180,      180,      150,      180,      130} /* GC,GC,T,T,T */
02965      }
02966      }
02967      }
02968      , {{{      280,      270,      250,      270,      280} /* GC,GT,E,E,E */
02969      , {      260,      250,      230,      250,      260} /* GC,GT,E,E,A */
02970      , {      260,      250,      230,      250,      260} /* GC,GT,E,E,C */
02971      , {      280,      270,      250,      270,      280} /* GC,GT,E,E,G */
02972      , {      280,      270,      250,      270,      280} /* GC,GT,E,E,T */
02973      }
02974      , {{      280,      270,      250,      270,      280} /* GC,GT,E,A,E */
02975      , {      230,      220,      200,      220,      230} /* GC,GT,E,A,A */
02976      , {      260,      250,      230,      250,      260} /* GC,GT,E,A,C */
02977      , {      230,      220,      200,      220,      230} /* GC,GT,E,A,G */
02978      , {      280,      270,      250,      270,      280} /* GC,GT,E,A,T */
02979      }
02980      , {{{      260,      250,      230,      250,      260} /* GC,GT,E,C,E */
02981      , {      260,      250,      230,      250,      260} /* GC,GT,E,C,A */
02982      , {      260,      250,      230,      250,      260} /* GC,GT,E,C,C */
02983      , {      240,      230,      210,      230,      240} /* GC,GT,E,C,G */
02984      , {      260,      250,      230,      250,      260} /* GC,GT,E,C,T */
02985      }
02986      , {{{      280,      270,      250,      270,      280} /* GC,GT,E,G,E */
02987      , {      230,      220,      200,      220,      230} /* GC,GT,E,G,A */
02988      , {      240,      230,      210,      230,      240} /* GC,GT,E,G,C */
02989      , {      230,      220,      200,      220,      230} /* GC,GT,E,G,G */
02990      , {      280,      270,      250,      270,      280} /* GC,GT,E,G,T */
02991      }
02992      , {{{      280,      270,      250,      270,      280} /* GC,GT,E,T,E */
02993      , {      260,      250,      230,      250,      260} /* GC,GT,E,T,A */
02994      , {      260,      250,      230,      250,      260} /* GC,GT,E,T,C */
02995      , {      280,      270,      250,      270,      280} /* GC,GT,E,T,G */
02996      , {      260,      250,      230,      250,      260} /* GC,GT,E,T,T */
02997      }
02998      }
02999      , {{{      260,      200,      230,      210,      260} /* GC,GT,A,E,E */
03000      , {      240,      180,      210,      190,      240} /* GC,GT,A,E,A */
03001      , {      240,      180,      210,      190,      240} /* GC,GT,A,E,C */
03002      , {      260,      200,      230,      210,      260} /* GC,GT,A,E,G */
03003      , {      260,      200,      230,      210,      260} /* GC,GT,A,E,T */
03004      }
03005      , {{      260,      200,      230,      210,      260} /* GC,GT,A,A,E */
03006      , {      210,      150,      180,      160,      210} /* GC,GT,A,A,A */
03007      , {      240,      180,      210,      190,      240} /* GC,GT,A,A,C */
03008      , {      210,      150,      180,      160,      210} /* GC,GT,A,A,G */
03009      , {      260,      200,      230,      210,      260} /* GC,GT,A,A,T */
03010      }
03011      , {{{      240,      180,      210,      190,      240} /* GC,GT,A,C,E */
03012      , {      240,      180,      210,      190,      240} /* GC,GT,A,C,A */
03013      , {      240,      180,      210,      190,      240} /* GC,GT,A,C,C */
03014      , {      220,      160,      190,      170,      220} /* GC,GT,A,C,G */
03015      , {      240,      180,      210,      190,      240} /* GC,GT,A,C,T */
03016      }
03017      , {{{      260,      200,      230,      210,      260} /* GC,GT,A,G,E */
03018      , {      210,      150,      180,      160,      210} /* GC,GT,A,G,A */
03019      , {      220,      160,      190,      170,      220} /* GC,GT,A,G,C */
03020      , {      210,      150,      180,      160,      210} /* GC,GT,A,G,G */
03021      , {      260,      200,      230,      210,      260} /* GC,GT,A,G,T */
03022      }
03023      , {{{      260,      200,      230,      210,      260} /* GC,GT,A,T,E */
03024      , {      240,      180,      210,      190,      240} /* GC,GT,A,T,A */
03025      , {      240,      180,      210,      190,      240} /* GC,GT,A,T,C */
03026      , {      260,      200,      230,      210,      260} /* GC,GT,A,T,G */

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03027      , {      240,      180,      210,      190,      240} /* GC,GT,A,T,T */
03028      }
03029      }
03030      ,{{{      250,      230,      250,      180,      240} /* GC,GT,C,E,E */
03031      , {      230,      210,      230,      160,      220} /* GC,GT,C,E,A */
03032      , {      230,      210,      230,      160,      220} /* GC,GT,C,E,C */
03033      , {      250,      230,      250,      180,      240} /* GC,GT,C,E,G */
03034      , {      250,      230,      250,      180,      240} /* GC,GT,C,E,T */
03035      }
03036      ,{{{      250,      230,      250,      180,      240} /* GC,GT,C,A,E */
03037      , {      200,      180,      200,      130,      190} /* GC,GT,C,A,A */
03038      , {      230,      210,      230,      160,      220} /* GC,GT,C,A,C */
03039      , {      200,      180,      200,      130,      190} /* GC,GT,C,A,G */
03040      , {      250,      230,      250,      180,      240} /* GC,GT,C,A,T */
03041      }
03042      ,{{{      230,      210,      230,      160,      220} /* GC,GT,C,C,E */
03043      , {      230,      210,      230,      160,      220} /* GC,GT,C,C,A */
03044      , {      230,      210,      230,      160,      220} /* GC,GT,C,C,C */
03045      , {      210,      190,      210,      140,      200} /* GC,GT,C,C,G */
03046      , {      230,      210,      230,      160,      220} /* GC,GT,C,C,T */
03047      }
03048      ,{{{      250,      230,      250,      180,      240} /* GC,GT,C,G,E */
03049      , {      200,      180,      200,      130,      190} /* GC,GT,C,G,A */
03050      , {      210,      190,      210,      140,      200} /* GC,GT,C,G,C */
03051      , {      200,      180,      200,      130,      190} /* GC,GT,C,G,G */
03052      , {      250,      230,      250,      180,      240} /* GC,GT,C,G,T */
03053      }
03054      ,{{{      250,      230,      250,      180,      240} /* GC,GT,C,T,E */
03055      , {      230,      210,      230,      160,      220} /* GC,GT,C,T,A */
03056      , {      230,      210,      230,      160,      220} /* GC,GT,C,T,C */
03057      , {      250,      230,      250,      180,      240} /* GC,GT,C,T,G */
03058      , {      230,      210,      230,      160,      220} /* GC,GT,C,T,T */
03059      }
03060      }
03061      ,{{{      280,      210,      230,      210,      280} /* GC,GT,G,E,E */
03062      , {      260,      190,      210,      190,      260} /* GC,GT,G,E,A */
03063      , {      260,      190,      210,      190,      260} /* GC,GT,G,E,C */
03064      , {      280,      210,      230,      210,      280} /* GC,GT,G,E,G */
03065      , {      280,      210,      230,      210,      280} /* GC,GT,G,E,T */
03066      }
03067      ,{{{      280,      210,      230,      210,      280} /* GC,GT,G,A,E */
03068      , {      230,      160,      180,      160,      230} /* GC,GT,G,A,A */
03069      , {      260,      190,      210,      190,      260} /* GC,GT,G,A,C */
03070      , {      230,      160,      180,      160,      230} /* GC,GT,G,A,G */
03071      , {      280,      210,      230,      210,      280} /* GC,GT,G,A,T */
03072      }
03073      ,{{{      260,      190,      210,      190,      260} /* GC,GT,G,C,E */
03074      , {      260,      190,      210,      190,      260} /* GC,GT,G,C,A */
03075      , {      260,      190,      210,      190,      260} /* GC,GT,G,C,C */
03076      , {      240,      170,      190,      170,      240} /* GC,GT,G,C,G */
03077      , {      260,      190,      210,      190,      260} /* GC,GT,G,C,T */
03078      }
03079      ,{{{      280,      210,      230,      210,      280} /* GC,GT,G,G,E */
03080      , {      230,      160,      180,      160,      230} /* GC,GT,G,G,A */
03081      , {      240,      170,      190,      170,      240} /* GC,GT,G,G,C */
03082      , {      230,      160,      180,      160,      230} /* GC,GT,G,G,G */
03083      , {      280,      210,      230,      210,      280} /* GC,GT,G,G,T */
03084      }
03085      ,{{{      280,      210,      230,      210,      280} /* GC,GT,G,T,E */
03086      , {      260,      190,      210,      190,      260} /* GC,GT,G,T,A */
03087      , {      260,      190,      210,      190,      260} /* GC,GT,G,T,C */
03088      , {      280,      210,      230,      210,      280} /* GC,GT,G,T,G */
03089      , {      260,      190,      210,      190,      260} /* GC,GT,G,T,T */
03090      }
03091      }
03092      ,{{{      270,      270,      240,      270,      220} /* GC,GT,T,E,E */
03093      , {      250,      250,      220,      250,      200} /* GC,GT,T,E,A */
03094      , {      250,      250,      220,      250,      200} /* GC,GT,T,E,C */
03095      , {      270,      270,      240,      270,      220} /* GC,GT,T,E,G */
03096      , {      270,      270,      240,      270,      220} /* GC,GT,T,E,T */
03097      }
03098      ,{{{      270,      270,      240,      270,      220} /* GC,GT,T,A,E */
03099      , {      220,      220,      190,      220,      170} /* GC,GT,T,A,A */
03100      , {      250,      250,      220,      250,      200} /* GC,GT,T,A,C */
03101      , {      220,      220,      190,      220,      170} /* GC,GT,T,A,G */
03102      , {      270,      270,      240,      270,      220} /* GC,GT,T,A,T */
03103      }
03104      ,{{{      250,      250,      220,      250,      200} /* GC,GT,T,C,E */
03105      , {      250,      250,      220,      250,      200} /* GC,GT,T,C,A */
03106      , {      250,      250,      220,      250,      200} /* GC,GT,T,C,C */
03107      , {      230,      230,      200,      230,      180} /* GC,GT,T,C,G */
03108      , {      250,      250,      220,      250,      200} /* GC,GT,T,C,T */
03109      }
03110      ,{{{      270,      270,      240,      270,      220} /* GC,GT,T,G,E */
03111      , {      220,      220,      190,      220,      170} /* GC,GT,T,G,A */
03112      , {      230,      230,      200,      230,      180} /* GC,GT,T,G,C */
03113      , {      220,      220,      190,      220,      170} /* GC,GT,T,G,G */

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03114      , { 270, 270, 240, 270, 220} /* GC,GT,T,G,T */
03115      }
03116      , {{ 270, 270, 240, 270, 220} /* GC,GT,T,T,E */
03117      , { 250, 250, 220, 250, 200} /* GC,GT,T,T,A */
03118      , { 250, 250, 220, 250, 200} /* GC,GT,T,T,C */
03119      , { 270, 270, 240, 270, 220} /* GC,GT,T,T,G */
03120      , { 250, 250, 220, 250, 200} /* GC,GT,T,T,T */
03121      }
03122      }
03123      }
03124      , {{{ 280, 270, 250, 270, 280} /* GC,TG,E,E,E */
03125      , { 280, 270, 250, 270, 280} /* GC,TG,E,E,A */
03126      , { 260, 250, 230, 250, 260} /* GC,TG,E,E,C */
03127      , { 280, 270, 250, 270, 280} /* GC,TG,E,E,G */
03128      , { 280, 270, 250, 270, 280} /* GC,TG,E,E,T */
03129      }
03130      , {{ 280, 270, 250, 270, 280} /* GC,TG,E,A,E */
03131      , { 230, 220, 200, 220, 230} /* GC,TG,E,A,A */
03132      , { 260, 250, 230, 250, 260} /* GC,TG,E,A,C */
03133      , { 230, 220, 200, 220, 230} /* GC,TG,E,A,G */
03134      , { 280, 270, 250, 270, 280} /* GC,TG,E,A,T */
03135      }
03136      , {{ 260, 250, 230, 250, 260} /* GC,TG,E,C,E */
03137      , { 260, 250, 230, 250, 260} /* GC,TG,E,C,A */
03138      , { 260, 250, 230, 250, 260} /* GC,TG,E,C,C */
03139      , { 230, 220, 200, 220, 230} /* GC,TG,E,C,G */
03140      , { 260, 250, 230, 250, 260} /* GC,TG,E,C,T */
03141      }
03142      , {{{ 280, 270, 250, 270, 280} /* GC,TG,E,G,E */
03143      , { 230, 220, 200, 220, 230} /* GC,TG,E,G,A */
03144      , { 250, 240, 220, 240, 250} /* GC,TG,E,G,C */
03145      , { 230, 220, 200, 220, 230} /* GC,TG,E,G,G */
03146      , { 280, 270, 250, 270, 280} /* GC,TG,E,G,T */
03147      }
03148      , {{{ 280, 270, 250, 270, 280} /* GC,TG,E,T,E */
03149      , { 280, 270, 250, 270, 280} /* GC,TG,E,T,A */
03150      , { 260, 250, 230, 250, 260} /* GC,TG,E,T,C */
03151      , { 280, 270, 250, 270, 280} /* GC,TG,E,T,G */
03152      , { 260, 250, 230, 250, 260} /* GC,TG,E,T,T */
03153      }
03154      }
03155      , {{{ 260, 200, 230, 210, 260} /* GC,TG,A,E,E */
03156      , { 260, 200, 230, 210, 260} /* GC,TG,A,E,A */
03157      , { 240, 180, 210, 190, 240} /* GC,TG,A,E,C */
03158      , { 260, 200, 230, 210, 260} /* GC,TG,A,E,G */
03159      , { 260, 200, 230, 210, 260} /* GC,TG,A,E,T */
03160      }
03161      , {{{ 260, 200, 230, 210, 260} /* GC,TG,A,A,E */
03162      , { 210, 150, 180, 160, 210} /* GC,TG,A,A,A */
03163      , { 240, 180, 210, 190, 240} /* GC,TG,A,A,C */
03164      , { 210, 150, 180, 160, 210} /* GC,TG,A,A,G */
03165      , { 260, 200, 230, 210, 260} /* GC,TG,A,A,T */
03166      }
03167      , {{{ 240, 180, 210, 190, 240} /* GC,TG,A,C,E */
03168      , { 240, 180, 210, 190, 240} /* GC,TG,A,C,A */
03169      , { 240, 180, 210, 190, 240} /* GC,TG,A,C,C */
03170      , { 210, 150, 180, 160, 210} /* GC,TG,A,C,G */
03171      , { 240, 180, 210, 190, 240} /* GC,TG,A,C,T */
03172      }
03173      , {{{ 260, 200, 230, 210, 260} /* GC,TG,A,G,E */
03174      , { 210, 150, 180, 160, 210} /* GC,TG,A,G,A */
03175      , { 230, 170, 200, 180, 230} /* GC,TG,A,G,C */
03176      , { 210, 150, 180, 160, 210} /* GC,TG,A,G,G */
03177      , { 260, 200, 230, 210, 260} /* GC,TG,A,G,T */
03178      }
03179      , {{{ 260, 200, 230, 210, 260} /* GC,TG,A,T,E */
03180      , { 260, 200, 230, 210, 260} /* GC,TG,A,T,A */
03181      , { 240, 180, 210, 190, 240} /* GC,TG,A,T,C */
03182      , { 260, 200, 230, 210, 260} /* GC,TG,A,T,G */
03183      , { 240, 180, 210, 190, 240} /* GC,TG,A,T,T */
03184      }
03185      }
03186      , {{{ 250, 230, 250, 180, 240} /* GC,TG,C,E,E */
03187      , { 250, 230, 250, 180, 240} /* GC,TG,C,E,A */
03188      , { 230, 210, 230, 160, 220} /* GC,TG,C,E,C */
03189      , { 250, 230, 250, 180, 240} /* GC,TG,C,E,G */
03190      , { 250, 230, 250, 180, 240} /* GC,TG,C,E,T */
03191      }
03192      , {{{ 250, 230, 250, 180, 240} /* GC,TG,C,A,E */
03193      , { 200, 180, 200, 130, 190} /* GC,TG,C,A,A */
03194      , { 230, 210, 230, 160, 220} /* GC,TG,C,A,C */
03195      , { 200, 180, 200, 130, 190} /* GC,TG,C,A,G */
03196      , { 250, 230, 250, 180, 240} /* GC,TG,C,A,T */
03197      }
03198      , {{{ 230, 210, 230, 160, 220} /* GC,TG,C,C,E */
03199      , { 230, 210, 230, 160, 220} /* GC,TG,C,C,A */
03200      , { 230, 210, 230, 160, 220} /* GC,TG,C,C,C */

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03201      , {      200,      180,      200,      130,      190} /* GC, TG, C, C, G */
03202      , {      230,      210,      230,      160,      220} /* GC, TG, C, C, T */
03203      }
03204      , {{      250,      230,      250,      180,      240} /* GC, TG, C, G, E */
03205      , {      200,      180,      200,      130,      190} /* GC, TG, C, G, A */
03206      , {      220,      200,      220,      150,      210} /* GC, TG, C, G, C */
03207      , {      200,      180,      200,      130,      190} /* GC, TG, C, G, G */
03208      , {      250,      230,      250,      180,      240} /* GC, TG, C, G, T */
03209      }
03210      , {{      250,      230,      250,      180,      240} /* GC, TG, C, T, E */
03211      , {      250,      230,      250,      180,      240} /* GC, TG, C, T, A */
03212      , {      230,      210,      230,      160,      220} /* GC, TG, C, T, C */
03213      , {      250,      230,      250,      180,      240} /* GC, TG, C, T, G */
03214      , {      230,      210,      230,      160,      220} /* GC, TG, C, T, T */
03215      }
03216      }
03217      , {{{      280,      210,      230,      210,      280} /* GC, TG, G, E, E */
03218      , {      280,      210,      230,      210,      280} /* GC, TG, G, E, A */
03219      , {      260,      190,      210,      190,      260} /* GC, TG, G, E, C */
03220      , {      280,      210,      230,      210,      280} /* GC, TG, G, E, G */
03221      , {      280,      210,      230,      210,      280} /* GC, TG, G, E, T */
03222      }
03223      , {{      280,      210,      230,      210,      280} /* GC, TG, G, A, E */
03224      , {      230,      160,      180,      160,      230} /* GC, TG, G, A, A */
03225      , {      260,      190,      210,      190,      260} /* GC, TG, G, A, C */
03226      , {      230,      160,      180,      160,      230} /* GC, TG, G, A, G */
03227      , {      280,      210,      230,      210,      280} /* GC, TG, G, A, T */
03228      }
03229      , {{{      260,      190,      210,      190,      260} /* GC, TG, G, C, E */
03230      , {      260,      190,      210,      190,      260} /* GC, TG, G, C, A */
03231      , {      260,      190,      210,      190,      260} /* GC, TG, G, C, C */
03232      , {      230,      160,      180,      160,      230} /* GC, TG, G, C, G */
03233      , {      260,      190,      210,      190,      260} /* GC, TG, G, C, T */
03234      }
03235      , {{      280,      210,      230,      210,      280} /* GC, TG, G, G, E */
03236      , {      230,      160,      180,      160,      230} /* GC, TG, G, G, A */
03237      , {      250,      180,      200,      180,      250} /* GC, TG, G, G, C */
03238      , {      230,      160,      180,      160,      230} /* GC, TG, G, G, G */
03239      , {      280,      210,      230,      210,      280} /* GC, TG, G, G, T */
03240      }
03241      , {{{      280,      210,      230,      210,      280} /* GC, TG, G, T, E */
03242      , {      280,      210,      230,      210,      280} /* GC, TG, G, T, A */
03243      , {      260,      190,      210,      190,      260} /* GC, TG, G, T, C */
03244      , {      280,      210,      230,      210,      280} /* GC, TG, G, T, G */
03245      , {      260,      190,      210,      190,      260} /* GC, TG, G, T, T */
03246      }
03247      }
03248      , {{{      270,      270,      240,      270,      220} /* GC, TG, T, E, E */
03249      , {      270,      270,      240,      270,      220} /* GC, TG, T, E, A */
03250      , {      250,      250,      220,      250,      200} /* GC, TG, T, E, C */
03251      , {      270,      270,      240,      270,      220} /* GC, TG, T, E, G */
03252      , {      270,      270,      240,      270,      220} /* GC, TG, T, E, T */
03253      }
03254      , {{{      270,      270,      240,      270,      220} /* GC, TG, T, A, E */
03255      , {      220,      220,      190,      220,      170} /* GC, TG, T, A, A */
03256      , {      250,      250,      220,      250,      200} /* GC, TG, T, A, C */
03257      , {      220,      220,      190,      220,      170} /* GC, TG, T, A, G */
03258      , {      270,      270,      240,      270,      220} /* GC, TG, T, A, T */
03259      }
03260      , {{{      250,      250,      220,      250,      200} /* GC, TG, T, C, E */
03261      , {      250,      250,      220,      250,      200} /* GC, TG, T, C, A */
03262      , {      250,      250,      220,      250,      200} /* GC, TG, T, C, C */
03263      , {      220,      220,      190,      220,      170} /* GC, TG, T, C, G */
03264      , {      250,      250,      220,      250,      200} /* GC, TG, T, C, T */
03265      }
03266      , {{      270,      270,      240,      270,      220} /* GC, TG, T, G, E */
03267      , {      220,      220,      190,      220,      170} /* GC, TG, T, G, A */
03268      , {      240,      240,      210,      240,      190} /* GC, TG, T, G, C */
03269      , {      220,      220,      190,      220,      170} /* GC, TG, T, G, G */
03270      , {      270,      270,      240,      270,      220} /* GC, TG, T, G, T */
03271      }
03272      , {{{      270,      270,      240,      270,      220} /* GC, TG, T, T, E */
03273      , {      270,      270,      240,      270,      220} /* GC, TG, T, T, A */
03274      , {      250,      250,      220,      250,      200} /* GC, TG, T, T, C */
03275      , {      270,      270,      240,      270,      220} /* GC, TG, T, T, G */
03276      , {      250,      250,      220,      250,      200} /* GC, TG, T, T, T */
03277      }
03278      }
03279      }
03280      , {{{      280,      270,      250,      270,      280} /* GC, AT, E, E, E */
03281      , {      280,      270,      250,      270,      280} /* GC, AT, E, E, A */
03282      , {      250,      240,      220,      240,      250} /* GC, AT, E, E, C */
03283      , {      280,      270,      250,      270,      280} /* GC, AT, E, E, G */
03284      , {      280,      270,      250,      270,      280} /* GC, AT, E, E, T */
03285      }
03286      , {{      280,      270,      250,      270,      280} /* GC, AT, E, A, E */
03287      , {      210,      200,      180,      200,      210} /* GC, AT, E, A, A */

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03288 , { 230, 220, 200, 220, 230} /* GC,AT,E,A,C */
03289 , { 220, 210, 190, 210, 220} /* GC,AT,E,A,G */
03290 , { 280, 270, 250, 270, 280} /* GC,AT,E,A,T */
03291 }
03292 , {{ 260, 250, 230, 250, 260} /* GC,AT,E,C,E */
03293 , { 230, 220, 200, 220, 230} /* GC,AT,E,C,A */
03294 , { 250, 240, 220, 240, 250} /* GC,AT,E,C,C */
03295 , { 260, 250, 230, 250, 260} /* GC,AT,E,C,G */
03296 , { 240, 230, 210, 230, 240} /* GC,AT,E,C,T */
03297 }
03298 , {{ 280, 270, 250, 270, 280} /* GC,AT,E,G,E */
03299 , { 220, 210, 190, 210, 220} /* GC,AT,E,G,A */
03300 , { 240, 230, 210, 230, 240} /* GC,AT,E,G,C */
03301 , { 220, 210, 190, 210, 220} /* GC,AT,E,G,G */
03302 , { 280, 270, 250, 270, 280} /* GC,AT,E,G,T */
03303 }
03304 , {{ 280, 270, 250, 270, 280} /* GC,AT,E,T,E */
03305 , { 280, 270, 250, 270, 280} /* GC,AT,E,T,A */
03306 , { 240, 230, 210, 230, 240} /* GC,AT,E,T,C */
03307 , { 280, 270, 250, 270, 280} /* GC,AT,E,T,G */
03308 , { 220, 210, 190, 210, 220} /* GC,AT,E,T,T */
03309 }
03310 }
03311 , {{{ 260, 200, 230, 210, 260} /* GC,AT,A,E,E */
03312 , { 260, 200, 230, 210, 260} /* GC,AT,A,E,A */
03313 , { 230, 170, 200, 180, 230} /* GC,AT,A,E,C */
03314 , { 260, 200, 230, 210, 260} /* GC,AT,A,E,G */
03315 , { 260, 200, 230, 210, 260} /* GC,AT,A,E,T */
03316 }
03317 , {{ 260, 200, 230, 210, 260} /* GC,AT,A,A,E */
03318 , { 190, 130, 160, 140, 190} /* GC,AT,A,A,A */
03319 , { 210, 150, 180, 160, 210} /* GC,AT,A,A,C */
03320 , { 200, 140, 170, 150, 200} /* GC,AT,A,A,G */
03321 , { 260, 200, 230, 210, 260} /* GC,AT,A,A,T */
03322 }
03323 , {{ 240, 180, 210, 190, 240} /* GC,AT,A,C,E */
03324 , { 210, 150, 180, 160, 210} /* GC,AT,A,C,A */
03325 , { 230, 170, 200, 180, 230} /* GC,AT,A,C,C */
03326 , { 240, 180, 210, 190, 240} /* GC,AT,A,C,G */
03327 , { 220, 160, 190, 170, 220} /* GC,AT,A,C,T */
03328 }
03329 , {{ 260, 200, 230, 210, 260} /* GC,AT,A,G,E */
03330 , { 200, 140, 170, 150, 200} /* GC,AT,A,G,A */
03331 , { 220, 160, 190, 170, 220} /* GC,AT,A,G,C */
03332 , { 200, 140, 170, 150, 200} /* GC,AT,A,G,G */
03333 , { 260, 200, 230, 210, 260} /* GC,AT,A,G,T */
03334 }
03335 , {{ 260, 200, 230, 210, 260} /* GC,AT,A,T,E */
03336 , { 260, 200, 230, 210, 260} /* GC,AT,A,T,A */
03337 , { 220, 160, 190, 170, 220} /* GC,AT,A,T,C */
03338 , { 260, 200, 230, 210, 260} /* GC,AT,A,T,G */
03339 , { 200, 140, 170, 150, 200} /* GC,AT,A,T,T */
03340 }
03341 }
03342 , {{{ 250, 230, 250, 180, 240} /* GC,AT,C,E,E */
03343 , { 250, 230, 250, 180, 240} /* GC,AT,C,E,A */
03344 , { 220, 200, 220, 150, 210} /* GC,AT,C,E,C */
03345 , { 250, 230, 250, 180, 240} /* GC,AT,C,E,G */
03346 , { 250, 230, 250, 180, 240} /* GC,AT,C,E,T */
03347 }
03348 , {{ 250, 230, 250, 180, 240} /* GC,AT,C,A,E */
03349 , { 180, 160, 180, 110, 170} /* GC,AT,C,A,A */
03350 , { 200, 180, 200, 130, 190} /* GC,AT,C,A,C */
03351 , { 190, 170, 190, 120, 180} /* GC,AT,C,A,G */
03352 , { 250, 230, 250, 180, 240} /* GC,AT,C,A,T */
03353 }
03354 , {{ 230, 210, 230, 160, 220} /* GC,AT,C,C,E */
03355 , { 200, 180, 200, 130, 190} /* GC,AT,C,C,A */
03356 , { 220, 200, 220, 150, 210} /* GC,AT,C,C,C */
03357 , { 230, 210, 230, 160, 220} /* GC,AT,C,C,G */
03358 , { 210, 190, 210, 140, 200} /* GC,AT,C,C,T */
03359 }
03360 , {{ 250, 230, 250, 180, 240} /* GC,AT,C,G,E */
03361 , { 190, 170, 190, 120, 180} /* GC,AT,C,G,A */
03362 , { 210, 190, 210, 140, 200} /* GC,AT,C,G,C */
03363 , { 190, 170, 190, 120, 180} /* GC,AT,C,G,G */
03364 , { 250, 230, 250, 180, 240} /* GC,AT,C,G,T */
03365 }
03366 , {{ 250, 230, 250, 180, 240} /* GC,AT,C,T,E */
03367 , { 250, 230, 250, 180, 240} /* GC,AT,C,T,A */
03368 , { 210, 190, 210, 140, 200} /* GC,AT,C,T,C */
03369 , { 250, 230, 250, 180, 240} /* GC,AT,C,T,G */
03370 , { 190, 170, 190, 120, 180} /* GC,AT,C,T,T */
03371 }
03372 }
03373 , {{{ 280, 210, 230, 210, 280} /* GC,AT,G,E,E */
03374 , { 280, 210, 230, 210, 280} /* GC,AT,G,E,A */
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03375      , {      250,      180,      200,      180,      250} /* GC,AT,G,E,C */
03376      , {      280,      210,      230,      210,      280} /* GC,AT,G,E,G */
03377      , {      280,      210,      230,      210,      280} /* GC,AT,G,E,T */
03378      }
03379      , {{      280,      210,      230,      210,      280} /* GC,AT,G,A,E */
03380      , {      210,      140,      160,      140,      210} /* GC,AT,G,A,A */
03381      , {      230,      160,      180,      160,      230} /* GC,AT,G,A,C */
03382      , {      220,      150,      170,      150,      220} /* GC,AT,G,A,G */
03383      , {      280,      210,      230,      210,      280} /* GC,AT,G,A,T */
03384      }
03385      , {{      260,      190,      210,      190,      260} /* GC,AT,G,C,E */
03386      , {      230,      160,      180,      160,      230} /* GC,AT,G,C,A */
03387      , {      250,      180,      200,      180,      250} /* GC,AT,G,C,C */
03388      , {      260,      190,      210,      190,      260} /* GC,AT,G,C,G */
03389      , {      240,      170,      190,      170,      240} /* GC,AT,G,C,T */
03390      }
03391      , {{      280,      210,      230,      210,      280} /* GC,AT,G,G,E */
03392      , {      220,      150,      170,      150,      220} /* GC,AT,G,G,A */
03393      , {      240,      170,      190,      170,      240} /* GC,AT,G,G,C */
03394      , {      220,      150,      170,      150,      220} /* GC,AT,G,G,G */
03395      , {      280,      210,      230,      210,      280} /* GC,AT,G,G,T */
03396      }
03397      , {{      280,      210,      230,      210,      280} /* GC,AT,G,T,E */
03398      , {      280,      210,      230,      210,      280} /* GC,AT,G,T,A */
03399      , {      240,      170,      190,      170,      240} /* GC,AT,G,T,C */
03400      , {      280,      210,      230,      210,      280} /* GC,AT,G,T,G */
03401      , {      220,      150,      170,      150,      220} /* GC,AT,G,T,T */
03402      }
03403      }
03404      , {{{      270,      270,      240,      270,      220} /* GC,AT,T,E,E */
03405      , {      270,      270,      240,      270,      220} /* GC,AT,T,E,A */
03406      , {      240,      240,      210,      240,      190} /* GC,AT,T,E,C */
03407      , {      270,      270,      240,      270,      220} /* GC,AT,T,E,G */
03408      , {      270,      270,      240,      270,      220} /* GC,AT,T,E,T */
03409      }
03410      , {{{      270,      270,      240,      270,      220} /* GC,AT,T,A,E */
03411      , {      200,      200,      170,      200,      150} /* GC,AT,T,A,A */
03412      , {      220,      220,      190,      220,      170} /* GC,AT,T,A,C */
03413      , {      210,      210,      180,      210,      160} /* GC,AT,T,A,G */
03414      , {      270,      270,      240,      270,      220} /* GC,AT,T,A,T */
03415      }
03416      , {{{      250,      250,      220,      250,      200} /* GC,AT,T,C,E */
03417      , {      220,      220,      190,      220,      170} /* GC,AT,T,C,A */
03418      , {      240,      240,      210,      240,      190} /* GC,AT,T,C,C */
03419      , {      250,      250,      220,      250,      200} /* GC,AT,T,C,G */
03420      , {      230,      230,      200,      230,      180} /* GC,AT,T,C,T */
03421      }
03422      , {{{      270,      270,      240,      270,      220} /* GC,AT,T,G,E */
03423      , {      210,      210,      180,      210,      160} /* GC,AT,T,G,A */
03424      , {      230,      230,      200,      230,      180} /* GC,AT,T,G,C */
03425      , {      210,      210,      180,      210,      160} /* GC,AT,T,G,G */
03426      , {      270,      270,      240,      270,      220} /* GC,AT,T,G,T */
03427      }
03428      , {{{      270,      270,      240,      270,      220} /* GC,AT,T,T,E */
03429      , {      270,      270,      240,      270,      220} /* GC,AT,T,T,A */
03430      , {      230,      230,      200,      230,      180} /* GC,AT,T,T,C */
03431      , {      270,      270,      240,      270,      220} /* GC,AT,T,T,G */
03432      , {      210,      210,      180,      210,      160} /* GC,AT,T,T,T */
03433      }
03434      }
03435      }
03436      , {{{{{      280,      270,      250,      270,      280} /* GC,TA,E,E,E */
03437      , {      280,      270,      250,      270,      280} /* GC,TA,E,E,A */
03438      , {      250,      240,      220,      240,      250} /* GC,TA,E,E,C */
03439      , {      280,      270,      250,      270,      280} /* GC,TA,E,E,G */
03440      , {      280,      270,      250,      270,      280} /* GC,TA,E,E,T */
03441      }
03442      , {{{      280,      270,      250,      270,      280} /* GC,TA,E,A,E */
03443      , {      220,      210,      190,      210,      220} /* GC,TA,E,A,A */
03444      , {      230,      220,      200,      220,      230} /* GC,TA,E,A,C */
03445      , {      220,      210,      190,      210,      220} /* GC,TA,E,A,G */
03446      , {      280,      270,      250,      270,      280} /* GC,TA,E,A,T */
03447      }
03448      , {{{      280,      270,      250,      270,      280} /* GC,TA,E,C,E */
03449      , {      230,      220,      200,      220,      230} /* GC,TA,E,C,A */
03450      , {      250,      240,      220,      240,      250} /* GC,TA,E,C,C */
03451      , {      280,      270,      250,      270,      280} /* GC,TA,E,C,G */
03452      , {      240,      230,      210,      230,      240} /* GC,TA,E,C,T */
03453      }
03454      , {{{      270,      260,      240,      260,      270} /* GC,TA,E,G,E */
03455      , {      220,      210,      190,      210,      220} /* GC,TA,E,G,A */
03456      , {      230,      220,      200,      220,      230} /* GC,TA,E,G,C */
03457      , {      220,      210,      190,      210,      220} /* GC,TA,E,G,G */
03458      , {      270,      260,      240,      260,      270} /* GC,TA,E,G,T */
03459      }
03460      , {{{      280,      270,      250,      270,      280} /* GC,TA,E,T,E */
03461      , {      280,      270,      250,      270,      280} /* GC,TA,E,T,A */

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03462      , {      240,      230,      210,      230,      240} /* GC,TA,E,T,C */
03463      , {      280,      270,      250,      270,      280} /* GC,TA,E,T,G */
03464      , {      220,      210,      190,      210,      220} /* GC,TA,E,T,T */
03465      }
03466      }
03467      , {{ {      260,      200,      230,      210,      260} /* GC,TA,A,E,E */
03468      , {      260,      200,      230,      210,      260} /* GC,TA,A,E,A */
03469      , {      230,      170,      200,      180,      230} /* GC,TA,A,E,C */
03470      , {      260,      200,      230,      210,      260} /* GC,TA,A,E,G */
03471      , {      260,      200,      230,      210,      260} /* GC,TA,A,E,T */
03472      }
03473      , {{ {      260,      200,      230,      210,      260} /* GC,TA,A,A,E */
03474      , {      200,      140,      170,      150,      200} /* GC,TA,A,A,A */
03475      , {      210,      150,      180,      160,      210} /* GC,TA,A,A,C */
03476      , {      200,      140,      170,      150,      200} /* GC,TA,A,A,G */
03477      , {      260,      200,      230,      210,      260} /* GC,TA,A,A,T */
03478      }
03479      , {{ {      260,      200,      230,      210,      260} /* GC,TA,A,C,E */
03480      , {      210,      150,      180,      160,      210} /* GC,TA,A,C,A */
03481      , {      230,      170,      200,      180,      230} /* GC,TA,A,C,C */
03482      , {      260,      200,      230,      210,      260} /* GC,TA,A,C,G */
03483      , {      220,      160,      190,      170,      220} /* GC,TA,A,C,T */
03484      }
03485      , {{ {      250,      190,      220,      200,      250} /* GC,TA,A,G,E */
03486      , {      200,      140,      170,      150,      200} /* GC,TA,A,G,A */
03487      , {      210,      150,      180,      160,      210} /* GC,TA,A,G,C */
03488      , {      200,      140,      170,      150,      200} /* GC,TA,A,G,G */
03489      , {      250,      190,      220,      200,      250} /* GC,TA,A,G,T */
03490      }
03491      , {{ {      260,      200,      230,      210,      260} /* GC,TA,A,T,E */
03492      , {      260,      200,      230,      210,      260} /* GC,TA,A,T,A */
03493      , {      220,      160,      190,      170,      220} /* GC,TA,A,T,C */
03494      , {      260,      200,      230,      210,      260} /* GC,TA,A,T,G */
03495      , {      200,      140,      170,      150,      200} /* GC,TA,A,T,T */
03496      }
03497      }
03498      , {{ {      250,      230,      250,      180,      240} /* GC,TA,C,E,E */
03499      , {      250,      230,      250,      180,      240} /* GC,TA,C,E,A */
03500      , {      220,      200,      220,      150,      210} /* GC,TA,C,E,C */
03501      , {      250,      230,      250,      180,      240} /* GC,TA,C,E,G */
03502      , {      250,      230,      250,      180,      240} /* GC,TA,C,E,T */
03503      }
03504      , {{ {      250,      230,      250,      180,      240} /* GC,TA,C,A,E */
03505      , {      190,      170,      190,      120,      180} /* GC,TA,C,A,A */
03506      , {      200,      180,      200,      130,      190} /* GC,TA,C,A,C */
03507      , {      190,      170,      190,      120,      180} /* GC,TA,C,A,G */
03508      , {      250,      230,      250,      180,      240} /* GC,TA,C,A,T */
03509      }
03510      , {{ {      250,      230,      250,      180,      240} /* GC,TA,C,C,E */
03511      , {      200,      180,      200,      130,      190} /* GC,TA,C,C,A */
03512      , {      220,      200,      220,      150,      210} /* GC,TA,C,C,C */
03513      , {      250,      230,      250,      180,      240} /* GC,TA,C,C,G */
03514      , {      210,      190,      210,      140,      200} /* GC,TA,C,C,T */
03515      }
03516      , {{ {      240,      220,      240,      170,      230} /* GC,TA,C,G,E */
03517      , {      190,      170,      190,      120,      180} /* GC,TA,C,G,A */
03518      , {      200,      180,      200,      130,      190} /* GC,TA,C,G,C */
03519      , {      190,      170,      190,      120,      180} /* GC,TA,C,G,G */
03520      , {      240,      220,      240,      170,      230} /* GC,TA,C,G,T */
03521      }
03522      , {{ {      250,      230,      250,      180,      240} /* GC,TA,C,T,E */
03523      , {      250,      230,      250,      180,      240} /* GC,TA,C,T,A */
03524      , {      210,      190,      210,      140,      200} /* GC,TA,C,T,C */
03525      , {      250,      230,      250,      180,      240} /* GC,TA,C,T,G */
03526      , {      190,      170,      190,      120,      180} /* GC,TA,C,T,T */
03527      }
03528      }
03529      , {{ {      280,      210,      230,      210,      280} /* GC,TA,G,E,E */
03530      , {      280,      210,      230,      210,      280} /* GC,TA,G,E,A */
03531      , {      250,      180,      200,      180,      250} /* GC,TA,G,E,C */
03532      , {      280,      210,      230,      210,      280} /* GC,TA,G,E,G */
03533      , {      280,      210,      230,      210,      280} /* GC,TA,G,E,T */
03534      }
03535      , {{ {      280,      210,      230,      210,      280} /* GC,TA,G,A,E */
03536      , {      220,      150,      170,      150,      220} /* GC,TA,G,A,A */
03537      , {      230,      160,      180,      160,      230} /* GC,TA,G,A,C */
03538      , {      220,      150,      170,      150,      220} /* GC,TA,G,A,G */
03539      , {      280,      210,      230,      210,      280} /* GC,TA,G,A,T */
03540      }
03541      , {{ {      280,      210,      230,      210,      280} /* GC,TA,G,C,E */
03542      , {      230,      160,      180,      160,      230} /* GC,TA,G,C,A */
03543      , {      250,      180,      200,      180,      250} /* GC,TA,G,C,C */
03544      , {      280,      210,      230,      210,      280} /* GC,TA,G,C,G */
03545      , {      240,      170,      190,      170,      240} /* GC,TA,G,C,T */
03546      }
03547      , {{ {      270,      200,      220,      200,      270} /* GC,TA,G,G,E */
03548      , {      220,      150,      170,      150,      220} /* GC,TA,G,G,A */

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03549      , {      230,      160,      180,      160,      230} /* GC,TA,G,G,C */
03550      , {      220,      150,      170,      150,      220} /* GC,TA,G,G,G */
03551      , {      270,      200,      220,      200,      270} /* GC,TA,G,G,T */
03552      }
03553      , {{      280,      210,      230,      210,      280} /* GC,TA,G,T,E */
03554      , {      280,      210,      230,      210,      280} /* GC,TA,G,T,A */
03555      , {      240,      170,      190,      170,      240} /* GC,TA,G,T,C */
03556      , {      280,      210,      230,      210,      280} /* GC,TA,G,T,G */
03557      , {      220,      150,      170,      150,      220} /* GC,TA,G,T,T */
03558      }
03559      }
03560      , {{{      270,      270,      240,      270,      220} /* GC,TA,T,E,E */
03561      , {      270,      270,      240,      270,      220} /* GC,TA,T,E,A */
03562      , {      240,      240,      210,      240,      190} /* GC,TA,T,E,C */
03563      , {      270,      270,      240,      270,      220} /* GC,TA,T,E,G */
03564      , {      270,      270,      240,      270,      220} /* GC,TA,T,E,T */
03565      }
03566      , {{      270,      270,      240,      270,      220} /* GC,TA,T,A,E */
03567      , {      210,      210,      180,      210,      160} /* GC,TA,T,A,A */
03568      , {      220,      220,      190,      220,      170} /* GC,TA,T,A,C */
03569      , {      210,      210,      180,      210,      160} /* GC,TA,T,A,G */
03570      , {      270,      270,      240,      270,      220} /* GC,TA,T,A,T */
03571      }
03572      , {{      270,      270,      240,      270,      220} /* GC,TA,T,C,E */
03573      , {      220,      220,      190,      220,      170} /* GC,TA,T,C,A */
03574      , {      240,      240,      210,      240,      190} /* GC,TA,T,C,C */
03575      , {      270,      270,      240,      270,      220} /* GC,TA,T,C,G */
03576      , {      230,      230,      200,      230,      180} /* GC,TA,T,C,T */
03577      }
03578      , {{{      260,      260,      230,      260,      210} /* GC,TA,T,G,E */
03579      , {      210,      210,      180,      210,      160} /* GC,TA,T,G,A */
03580      , {      220,      220,      190,      220,      170} /* GC,TA,T,G,C */
03581      , {      210,      210,      180,      210,      160} /* GC,TA,T,G,G */
03582      , {      260,      260,      230,      260,      210} /* GC,TA,T,G,T */
03583      }
03584      , {{{      270,      270,      240,      270,      220} /* GC,TA,T,T,E */
03585      , {      270,      270,      240,      270,      220} /* GC,TA,T,T,A */
03586      , {      230,      230,      200,      230,      180} /* GC,TA,T,T,C */
03587      , {      270,      270,      240,      270,      220} /* GC,TA,T,T,G */
03588      , {      210,      210,      180,      210,      160} /* GC,TA,T,T,T */
03589      }
03590      }
03591      }
03592      , {{{      280,      270,      250,      270,      280} /* GC,NN,E,E,E */
03593      , {      280,      270,      250,      270,      280} /* GC,NN,E,E,A */
03594      , {      260,      250,      230,      250,      260} /* GC,NN,E,E,C */
03595      , {      280,      270,      250,      270,      280} /* GC,NN,E,E,G */
03596      , {      280,      270,      250,      270,      280} /* GC,NN,E,E,T */
03597      }
03598      , {{{      280,      270,      250,      270,      280} /* GC,NN,E,A,E */
03599      , {      230,      220,      200,      220,      230} /* GC,NN,E,A,A */
03600      , {      260,      250,      230,      250,      260} /* GC,NN,E,A,C */
03601      , {      230,      220,      200,      220,      230} /* GC,NN,E,A,G */
03602      , {      280,      270,      250,      270,      280} /* GC,NN,E,A,T */
03603      }
03604      , {{{      280,      270,      250,      270,      280} /* GC,NN,E,C,E */
03605      , {      260,      250,      230,      250,      260} /* GC,NN,E,C,A */
03606      , {      260,      250,      230,      250,      260} /* GC,NN,E,C,C */
03607      , {      280,      270,      250,      270,      280} /* GC,NN,E,C,G */
03608      , {      260,      250,      230,      250,      260} /* GC,NN,E,C,T */
03609      }
03610      , {{{      280,      270,      250,      270,      280} /* GC,NN,E,G,E */
03611      , {      230,      220,      200,      220,      230} /* GC,NN,E,G,A */
03612      , {      250,      240,      220,      240,      250} /* GC,NN,E,G,C */
03613      , {      230,      220,      200,      220,      230} /* GC,NN,E,G,G */
03614      , {      280,      270,      250,      270,      280} /* GC,NN,E,G,T */
03615      }
03616      , {{{      280,      270,      250,      270,      280} /* GC,NN,E,T,E */
03617      , {      280,      270,      250,      270,      280} /* GC,NN,E,T,A */
03618      , {      260,      250,      230,      250,      260} /* GC,NN,E,T,C */
03619      , {      280,      270,      250,      270,      280} /* GC,NN,E,T,G */
03620      , {      260,      250,      230,      250,      260} /* GC,NN,E,T,T */
03621      }
03622      }
03623      , {{{      260,      200,      230,      210,      260} /* GC,NN,A,E,E */
03624      , {      260,      200,      230,      210,      260} /* GC,NN,A,E,A */
03625      , {      240,      180,      210,      190,      240} /* GC,NN,A,E,C */
03626      , {      260,      200,      230,      210,      260} /* GC,NN,A,E,G */
03627      , {      260,      200,      230,      210,      260} /* GC,NN,A,E,T */
03628      }
03629      , {{{      260,      200,      230,      210,      260} /* GC,NN,A,A,E */
03630      , {      210,      150,      180,      160,      210} /* GC,NN,A,A,A */
03631      , {      240,      180,      210,      190,      240} /* GC,NN,A,A,C */
03632      , {      210,      150,      180,      160,      210} /* GC,NN,A,A,G */
03633      , {      260,      200,      230,      210,      260} /* GC,NN,A,A,T */
03634      }
03635      , {{{      260,      200,      230,      210,      260} /* GC,NN,A,C,E */

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03636      , {      240,      180,      210,      190,      240} /* GC, NN, A, C, A */
03637      , {      240,      180,      210,      190,      240} /* GC, NN, A, C, C */
03638      , {      260,      200,      230,      210,      260} /* GC, NN, A, C, G */
03639      , {      240,      180,      210,      190,      240} /* GC, NN, A, C, T */
03640      }
03641      , { {      260,      200,      230,      210,      260} /* GC, NN, A, G, E */
03642      , {      210,      150,      180,      160,      210} /* GC, NN, A, G, A */
03643      , {      230,      170,      200,      180,      230} /* GC, NN, A, G, C */
03644      , {      210,      150,      180,      160,      210} /* GC, NN, A, G, G */
03645      , {      260,      200,      230,      210,      260} /* GC, NN, A, G, T */
03646      }
03647      , { {      260,      200,      230,      210,      260} /* GC, NN, A, T, E */
03648      , {      260,      200,      230,      210,      260} /* GC, NN, A, T, A */
03649      , {      240,      180,      210,      190,      240} /* GC, NN, A, T, C */
03650      , {      260,      200,      230,      210,      260} /* GC, NN, A, T, G */
03651      , {      240,      180,      210,      190,      240} /* GC, NN, A, T, T */
03652      }
03653      }
03654      , { { {      250,      230,      250,      180,      240} /* GC, NN, C, E, E */
03655      , {      250,      230,      250,      180,      240} /* GC, NN, C, E, A */
03656      , {      230,      210,      230,      160,      220} /* GC, NN, C, E, C */
03657      , {      250,      230,      250,      180,      240} /* GC, NN, C, E, G */
03658      , {      250,      230,      250,      180,      240} /* GC, NN, C, E, T */
03659      }
03660      , { {      250,      230,      250,      180,      240} /* GC, NN, C, A, E */
03661      , {      200,      180,      200,      130,      190} /* GC, NN, C, A, A */
03662      , {      230,      210,      230,      160,      220} /* GC, NN, C, A, C */
03663      , {      200,      180,      200,      130,      190} /* GC, NN, C, A, G */
03664      , {      250,      230,      250,      180,      240} /* GC, NN, C, A, T */
03665      }
03666      , { {      250,      230,      250,      180,      240} /* GC, NN, C, C, E */
03667      , {      230,      210,      230,      160,      220} /* GC, NN, C, C, A */
03668      , {      230,      210,      230,      160,      220} /* GC, NN, C, C, C */
03669      , {      250,      230,      250,      180,      240} /* GC, NN, C, C, G */
03670      , {      230,      210,      230,      160,      220} /* GC, NN, C, C, T */
03671      }
03672      , { {      250,      230,      250,      180,      240} /* GC, NN, C, G, E */
03673      , {      200,      180,      200,      130,      190} /* GC, NN, C, G, A */
03674      , {      220,      200,      220,      150,      210} /* GC, NN, C, G, C */
03675      , {      200,      180,      200,      130,      190} /* GC, NN, C, G, G */
03676      , {      250,      230,      250,      180,      240} /* GC, NN, C, G, T */
03677      }
03678      , { {      250,      230,      250,      180,      240} /* GC, NN, C, T, E */
03679      , {      250,      230,      250,      180,      240} /* GC, NN, C, T, A */
03680      , {      230,      210,      230,      160,      220} /* GC, NN, C, T, C */
03681      , {      250,      230,      250,      180,      240} /* GC, NN, C, T, G */
03682      , {      230,      210,      230,      160,      220} /* GC, NN, C, T, T */
03683      }
03684      }
03685      , { { {      280,      210,      230,      210,      280} /* GC, NN, G, E, E */
03686      , {      280,      210,      230,      210,      280} /* GC, NN, G, E, A */
03687      , {      260,      190,      210,      190,      260} /* GC, NN, G, E, C */
03688      , {      280,      210,      230,      210,      280} /* GC, NN, G, E, G */
03689      , {      280,      210,      230,      210,      280} /* GC, NN, G, E, T */
03690      }
03691      , { {      280,      210,      230,      210,      280} /* GC, NN, G, A, E */
03692      , {      230,      160,      180,      160,      230} /* GC, NN, G, A, A */
03693      , {      260,      190,      210,      190,      260} /* GC, NN, G, A, C */
03694      , {      230,      160,      180,      160,      230} /* GC, NN, G, A, G */
03695      , {      280,      210,      230,      210,      280} /* GC, NN, G, A, T */
03696      }
03697      , { {      280,      210,      230,      210,      280} /* GC, NN, G, C, E */
03698      , {      260,      190,      210,      190,      260} /* GC, NN, G, C, A */
03699      , {      260,      190,      210,      190,      260} /* GC, NN, G, C, C */
03700      , {      280,      210,      230,      210,      280} /* GC, NN, G, C, G */
03701      , {      260,      190,      210,      190,      260} /* GC, NN, G, C, T */
03702      }
03703      , { {      280,      210,      230,      210,      280} /* GC, NN, G, G, E */
03704      , {      230,      160,      180,      160,      230} /* GC, NN, G, G, A */
03705      , {      250,      180,      200,      180,      250} /* GC, NN, G, G, C */
03706      , {      230,      160,      180,      160,      230} /* GC, NN, G, G, G */
03707      , {      280,      210,      230,      210,      280} /* GC, NN, G, G, T */
03708      }
03709      , { {      280,      210,      230,      210,      280} /* GC, NN, G, T, E */
03710      , {      280,      210,      230,      210,      280} /* GC, NN, G, T, A */
03711      , {      260,      190,      210,      190,      260} /* GC, NN, G, T, C */
03712      , {      280,      210,      230,      210,      280} /* GC, NN, G, T, G */
03713      , {      260,      190,      210,      190,      260} /* GC, NN, G, T, T */
03714      }
03715      }
03716      , { { {      270,      270,      240,      270,      220} /* GC, NN, T, E, E */
03717      , {      270,      270,      240,      270,      220} /* GC, NN, T, E, A */
03718      , {      250,      250,      220,      250,      200} /* GC, NN, T, E, C */
03719      , {      270,      270,      240,      270,      220} /* GC, NN, T, E, G */
03720      , {      270,      270,      240,      270,      220} /* GC, NN, T, E, T */
03721      }
03722      , { {      270,      270,      240,      270,      220} /* GC, NN, T, A, E */

```

```

03723      , {      220,      220,      190,      220,      170} /* GC,NN,T,A,A */
03724      , {      250,      250,      220,      250,      200} /* GC,NN,T,A,C */
03725      , {      220,      220,      190,      220,      170} /* GC,NN,T,A,G */
03726      , {      270,      270,      240,      270,      220} /* GC,NN,T,A,T */
03727      }
03728      , { {      270,      270,      240,      270,      220} /* GC,NN,T,C,E */
03729      , {      250,      250,      220,      250,      200} /* GC,NN,T,C,A */
03730      , {      250,      250,      220,      250,      200} /* GC,NN,T,C,C */
03731      , {      270,      270,      240,      270,      220} /* GC,NN,T,C,G */
03732      , {      250,      250,      220,      250,      200} /* GC,NN,T,C,T */
03733      }
03734      , { {      270,      270,      240,      270,      220} /* GC,NN,T,G,E */
03735      , {      220,      220,      190,      220,      170} /* GC,NN,T,G,A */
03736      , {      240,      240,      210,      240,      190} /* GC,NN,T,G,C */
03737      , {      220,      220,      190,      220,      170} /* GC,NN,T,G,G */
03738      , {      270,      270,      240,      270,      220} /* GC,NN,T,G,T */
03739      }
03740      , { {      270,      270,      240,      270,      220} /* GC,NN,T,T,E */
03741      , {      270,      270,      240,      270,      220} /* GC,NN,T,T,A */
03742      , {      250,      250,      220,      250,      200} /* GC,NN,T,T,C */
03743      , {      270,      270,      240,      270,      220} /* GC,NN,T,T,G */
03744      , {      250,      250,      220,      250,      200} /* GC,NN,T,T,T */
03745      }
03746      }
03747      }
03748      }
03749      , { { { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,E,E */
03750      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,E,A */
03751      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,E,C */
03752      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,E,G */
03753      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,E,T */
03754      }
03755      , { { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,A,E */
03756      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,A,A */
03757      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,A,C */
03758      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,A,G */
03759      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,A,T */
03760      }
03761      , { { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,C,E */
03762      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,C,A */
03763      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,C,C */
03764      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,C,G */
03765      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,C,T */
03766      }
03767      , { { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,G,E */
03768      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,G,A */
03769      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,G,C */
03770      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,G,G */
03771      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,G,T */
03772      }
03773      , { { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,T,E */
03774      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,T,A */
03775      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,T,C */
03776      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,T,G */
03777      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,E,T,T */
03778      }
03779      }
03780      , { { { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,E,E */
03781      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,E,A */
03782      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,E,C */
03783      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,E,G */
03784      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,E,T */
03785      }
03786      , { { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,A,E */
03787      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,A,A */
03788      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,A,C */
03789      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,A,G */
03790      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,A,T */
03791      }
03792      , { { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,C,E */
03793      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,C,A */
03794      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,C,C */
03795      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,C,G */
03796      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,C,T */
03797      }
03798      , { { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,G,E */
03799      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,G,A */
03800      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,G,C */
03801      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,G,G */
03802      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,G,T */
03803      }
03804      , { { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,T,E */
03805      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,T,A */
03806      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,T,C */
03807      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,T,G */
03808      , { INF,      INF,      INF,      INF,      INF} /* GT,NP,A,T,T */
03809      }

```



```
03810     }
03811     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,C,E,E */
03812     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,E,A */
03813     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,E,C */
03814     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,E,G */
03815     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,E,T */
03816     }
03817     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,C,A,E */
03818     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,A,A */
03819     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,A,C */
03820     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,A,G */
03821     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,A,T */
03822     }
03823     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,C,C,E */
03824     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,C,A */
03825     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,C,C */
03826     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,C,G */
03827     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,C,T */
03828     }
03829     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,C,G,E */
03830     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,G,A */
03831     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,G,C */
03832     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,G,G */
03833     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,G,T */
03834     }
03835     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,C,T,E */
03836     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,T,A */
03837     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,T,C */
03838     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,T,G */
03839     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,C,T,T */
03840     }
03841     }
03842     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,G,E,E */
03843     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,E,A */
03844     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,E,C */
03845     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,E,G */
03846     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,E,T */
03847     }
03848     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,G,A,E */
03849     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,A,A */
03850     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,A,C */
03851     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,A,G */
03852     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,A,T */
03853     }
03854     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,G,C,E */
03855     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,C,A */
03856     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,C,C */
03857     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,C,G */
03858     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,C,T */
03859     }
03860     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,G,G,E */
03861     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,G,A */
03862     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,G,C */
03863     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,G,G */
03864     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,G,T */
03865     }
03866     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,G,T,E */
03867     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,T,A */
03868     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,T,C */
03869     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,T,G */
03870     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,G,T,T */
03871     }
03872     }
03873     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,T,E,E */
03874     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,E,A */
03875     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,E,C */
03876     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,E,G */
03877     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,E,T */
03878     }
03879     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,T,A,E */
03880     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,A,A */
03881     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,A,C */
03882     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,A,G */
03883     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,A,T */
03884     }
03885     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,T,C,E */
03886     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,C,A */
03887     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,C,C */
03888     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,C,G */
03889     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,C,T */
03890     }
03891     ,{{{   INF,   INF,   INF,   INF,   INF} /* GT,NP,T,G,E */
03892     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,G,A */
03893     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,G,C */
03894     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,G,G */
03895     ,{     INF,   INF,   INF,   INF,   INF} /* GT,NP,T,G,T */
03896     }
```

```

03897 ,{{ INF, INF, INF, INF, INF} /* GT,NP,T,T,E */
03898 ,{ INF, INF, INF, INF, INF} /* GT,NP,T,T,A */
03899 ,{ INF, INF, INF, INF, INF} /* GT,NP,T,T,C */
03900 ,{ INF, INF, INF, INF, INF} /* GT,NP,T,T,G */
03901 ,{ INF, INF, INF, INF, INF} /* GT,NP,T,T,T */
03902 }
03903 }
03904 }
03905 ,{{{ 290, 290, 270, 290, 290} /* GT,CG,E,E,E */
03906 ,{ 270, 270, 250, 270, 270} /* GT,CG,E,E,A */
03907 ,{ 260, 260, 240, 260, 260} /* GT,CG,E,E,C */
03908 ,{ 260, 260, 240, 260, 260} /* GT,CG,E,E,G */
03909 ,{ 290, 290, 270, 290, 290} /* GT,CG,E,E,T */
03910 }
03911 ,{{ 290, 290, 270, 290, 290} /* GT,CG,E,A,E */
03912 ,{ 210, 210, 190, 210, 210} /* GT,CG,E,A,A */
03913 ,{ 240, 240, 220, 240, 240} /* GT,CG,E,A,C */
03914 ,{ 220, 220, 200, 220, 220} /* GT,CG,E,A,G */
03915 ,{ 290, 290, 270, 290, 290} /* GT,CG,E,A,T */
03916 }
03917 ,{{ 260, 260, 240, 260, 260} /* GT,CG,E,C,E */
03918 ,{ 240, 240, 220, 240, 240} /* GT,CG,E,C,A */
03919 ,{ 260, 260, 240, 260, 260} /* GT,CG,E,C,C */
03920 ,{ 200, 200, 180, 200, 200} /* GT,CG,E,C,G */
03921 ,{ 240, 240, 220, 240, 240} /* GT,CG,E,C,T */
03922 }
03923 ,{{ 270, 270, 250, 270, 270} /* GT,CG,E,G,E */
03924 ,{ 220, 220, 200, 220, 220} /* GT,CG,E,G,A */
03925 ,{ 230, 230, 210, 230, 230} /* GT,CG,E,G,C */
03926 ,{ 220, 220, 200, 220, 220} /* GT,CG,E,G,G */
03927 ,{ 270, 270, 250, 270, 270} /* GT,CG,E,G,T */
03928 }
03929 ,{{ 270, 270, 250, 270, 270} /* GT,CG,E,T,E */
03930 ,{ 270, 270, 250, 270, 270} /* GT,CG,E,T,A */
03931 ,{ 240, 240, 220, 240, 240} /* GT,CG,E,T,C */
03932 ,{ 260, 260, 240, 260, 260} /* GT,CG,E,T,G */
03933 ,{ 220, 220, 200, 220, 220} /* GT,CG,E,T,T */
03934 }
03935 }
03936 ,{{{ 270, 240, 270, 240, 270} /* GT,CG,A,E,E */
03937 ,{ 250, 220, 250, 220, 250} /* GT,CG,A,E,A */
03938 ,{ 240, 210, 240, 210, 240} /* GT,CG,A,E,C */
03939 ,{ 240, 210, 240, 210, 240} /* GT,CG,A,E,G */
03940 ,{ 270, 240, 270, 240, 270} /* GT,CG,A,E,T */
03941 }
03942 ,{{ 270, 240, 270, 240, 270} /* GT,CG,A,A,E */
03943 ,{ 190, 160, 190, 160, 190} /* GT,CG,A,A,A */
03944 ,{ 220, 190, 220, 190, 220} /* GT,CG,A,A,C */
03945 ,{ 200, 170, 200, 170, 200} /* GT,CG,A,A,G */
03946 ,{ 270, 240, 270, 240, 270} /* GT,CG,A,A,T */
03947 }
03948 ,{{ 240, 210, 240, 210, 240} /* GT,CG,A,C,E */
03949 ,{ 220, 190, 220, 190, 220} /* GT,CG,A,C,A */
03950 ,{ 240, 210, 240, 210, 240} /* GT,CG,A,C,C */
03951 ,{ 180, 150, 180, 150, 180} /* GT,CG,A,C,G */
03952 ,{ 220, 190, 220, 190, 220} /* GT,CG,A,C,T */
03953 }
03954 ,{{ 250, 220, 250, 220, 250} /* GT,CG,A,G,E */
03955 ,{ 200, 170, 200, 170, 200} /* GT,CG,A,G,A */
03956 ,{ 210, 180, 210, 180, 210} /* GT,CG,A,G,C */
03957 ,{ 200, 170, 200, 170, 200} /* GT,CG,A,G,G */
03958 ,{ 250, 220, 250, 220, 250} /* GT,CG,A,G,T */
03959 }
03960 ,{{ 250, 220, 250, 220, 250} /* GT,CG,A,T,E */
03961 ,{ 250, 220, 250, 220, 250} /* GT,CG,A,T,A */
03962 ,{ 220, 190, 220, 190, 220} /* GT,CG,A,T,C */
03963 ,{ 240, 210, 240, 210, 240} /* GT,CG,A,T,G */
03964 ,{ 200, 170, 200, 170, 200} /* GT,CG,A,T,T */
03965 }
03966 }
03967 ,{{{ 270, 270, 270, 250, 270} /* GT,CG,C,E,E */
03968 ,{ 250, 250, 250, 230, 250} /* GT,CG,C,E,A */
03969 ,{ 240, 240, 240, 220, 240} /* GT,CG,C,E,C */
03970 ,{ 240, 240, 240, 220, 240} /* GT,CG,C,E,G */
03971 ,{ 270, 270, 270, 250, 270} /* GT,CG,C,E,T */
03972 }
03973 ,{{ 270, 270, 270, 250, 270} /* GT,CG,C,A,E */
03974 ,{ 190, 190, 190, 170, 190} /* GT,CG,C,A,A */
03975 ,{ 220, 220, 220, 200, 220} /* GT,CG,C,A,C */
03976 ,{ 200, 200, 200, 180, 200} /* GT,CG,C,A,G */
03977 ,{ 270, 270, 270, 250, 270} /* GT,CG,C,A,T */
03978 }
03979 ,{{ 240, 240, 240, 220, 240} /* GT,CG,C,C,E */
03980 ,{ 220, 220, 220, 200, 220} /* GT,CG,C,C,A */
03981 ,{ 240, 240, 240, 220, 240} /* GT,CG,C,C,C */
03982 ,{ 180, 180, 180, 160, 180} /* GT,CG,C,C,G */
03983 ,{ 220, 220, 220, 200, 220} /* GT,CG,C,C,T */

```

```
03984      }
03985      ,{{      250,      250,      250,      230,      250} /* GT,CG,C,G,E */
03986      ,{      200,      200,      200,      180,      200} /* GT,CG,C,G,A */
03987      ,{      210,      210,      210,      190,      210} /* GT,CG,C,G,C */
03988      ,{      200,      200,      200,      180,      200} /* GT,CG,C,G,G */
03989      ,{      250,      250,      250,      230,      250} /* GT,CG,C,G,T */
03990      }
03991      ,{{      250,      250,      250,      230,      250} /* GT,CG,C,T,E */
03992      ,{      250,      250,      250,      230,      250} /* GT,CG,C,T,A */
03993      ,{      220,      220,      220,      200,      220} /* GT,CG,C,T,C */
03994      ,{      240,      240,      240,      220,      240} /* GT,CG,C,T,G */
03995      ,{      200,      200,      200,      180,      200} /* GT,CG,C,T,T */
03996      }
03997      }
03998      ,{{{      290,      240,      250,      240,      290} /* GT,CG,G,E,E */
03999      ,{      270,      220,      230,      220,      270} /* GT,CG,G,E,A */
04000      ,{      260,      210,      220,      210,      260} /* GT,CG,G,E,C */
04001      ,{      260,      210,      220,      210,      260} /* GT,CG,G,E,G */
04002      ,{      290,      240,      250,      240,      290} /* GT,CG,G,E,T */
04003      }
04004      ,{{      290,      240,      250,      240,      290} /* GT,CG,G,A,E */
04005      ,{      210,      160,      170,      160,      210} /* GT,CG,G,A,A */
04006      ,{      240,      190,      200,      190,      240} /* GT,CG,G,A,C */
04007      ,{      220,      170,      180,      170,      220} /* GT,CG,G,A,G */
04008      ,{      290,      240,      250,      240,      290} /* GT,CG,G,A,T */
04009      }
04010      ,{{{      260,      210,      220,      210,      260} /* GT,CG,G,C,E */
04011      ,{      240,      190,      200,      190,      240} /* GT,CG,G,C,A */
04012      ,{      260,      210,      220,      210,      260} /* GT,CG,G,C,C */
04013      ,{      200,      150,      160,      150,      200} /* GT,CG,G,C,G */
04014      ,{      240,      190,      200,      190,      240} /* GT,CG,G,C,T */
04015      }
04016      ,{{{      270,      220,      230,      220,      270} /* GT,CG,G,G,E */
04017      ,{      220,      170,      180,      170,      220} /* GT,CG,G,G,A */
04018      ,{      230,      180,      190,      180,      230} /* GT,CG,G,G,C */
04019      ,{      220,      170,      180,      170,      220} /* GT,CG,G,G,G */
04020      ,{      270,      220,      230,      220,      270} /* GT,CG,G,G,T */
04021      }
04022      ,{{{      270,      220,      230,      220,      270} /* GT,CG,G,T,E */
04023      ,{      270,      220,      230,      220,      270} /* GT,CG,G,T,A */
04024      ,{      240,      190,      200,      190,      240} /* GT,CG,G,T,C */
04025      ,{      260,      210,      220,      210,      260} /* GT,CG,G,T,G */
04026      ,{      220,      170,      180,      170,      220} /* GT,CG,G,T,T */
04027      }
04028      }
04029      ,{{{      290,      290,      270,      290,      270} /* GT,CG,T,E,E */
04030      ,{      270,      270,      250,      270,      250} /* GT,CG,T,E,A */
04031      ,{      260,      260,      240,      260,      240} /* GT,CG,T,E,C */
04032      ,{      260,      260,      240,      260,      240} /* GT,CG,T,E,G */
04033      ,{      290,      290,      270,      290,      270} /* GT,CG,T,E,T */
04034      }
04035      ,{{{      290,      290,      270,      290,      270} /* GT,CG,T,A,E */
04036      ,{      210,      210,      190,      210,      190} /* GT,CG,T,A,A */
04037      ,{      240,      240,      220,      240,      220} /* GT,CG,T,A,C */
04038      ,{      220,      220,      200,      220,      200} /* GT,CG,T,A,G */
04039      ,{      290,      290,      270,      290,      270} /* GT,CG,T,A,T */
04040      }
04041      ,{{{      260,      260,      240,      260,      240} /* GT,CG,T,C,E */
04042      ,{      240,      240,      220,      240,      220} /* GT,CG,T,C,A */
04043      ,{      260,      260,      240,      260,      240} /* GT,CG,T,C,C */
04044      ,{      200,      200,      180,      200,      180} /* GT,CG,T,C,G */
04045      ,{      240,      240,      220,      240,      220} /* GT,CG,T,C,T */
04046      }
04047      ,{{{      270,      270,      250,      270,      250} /* GT,CG,T,G,E */
04048      ,{      220,      220,      200,      220,      200} /* GT,CG,T,G,A */
04049      ,{      230,      230,      210,      230,      210} /* GT,CG,T,G,C */
04050      ,{      220,      220,      200,      220,      200} /* GT,CG,T,G,G */
04051      ,{      270,      270,      250,      270,      250} /* GT,CG,T,G,T */
04052      }
04053      ,{{{      270,      270,      250,      270,      250} /* GT,CG,T,T,E */
04054      ,{      270,      270,      250,      270,      250} /* GT,CG,T,T,A */
04055      ,{      240,      240,      220,      240,      220} /* GT,CG,T,T,C */
04056      ,{      260,      260,      240,      260,      240} /* GT,CG,T,T,G */
04057      ,{      220,      220,      200,      220,      200} /* GT,CG,T,T,T */
04058      }
04059      }
04060      }
04061      ,{{{      280,      280,      260,      280,      280} /* GT,GC,E,E,E */
04062      ,{      260,      260,      240,      260,      260} /* GT,GC,E,E,A */
04063      ,{      250,      250,      230,      250,      250} /* GT,GC,E,E,C */
04064      ,{      280,      280,      260,      280,      280} /* GT,GC,E,E,G */
04065      ,{      270,      270,      250,      270,      270} /* GT,GC,E,E,T */
04066      }
04067      ,{{{      270,      270,      250,      270,      270} /* GT,GC,E,A,E */
04068      ,{      200,      200,      180,      200,      200} /* GT,GC,E,A,A */
04069      ,{      230,      230,      210,      230,      230} /* GT,GC,E,A,C */
04070      ,{      210,      210,      190,      210,      210} /* GT,GC,E,A,G */
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04071      , {      270,      270,      250,      270,      270} /* GT,GC,E,A,T */
04072      }
04073      , { {      250,      250,      230,      250,      250} /* GT,GC,E,C,E */
04074      , {      230,      230,      210,      230,      230} /* GT,GC,E,C,A */
04075      , {      250,      250,      230,      250,      250} /* GT,GC,E,C,C */
04076      , {      230,      230,      210,      230,      230} /* GT,GC,E,C,G */
04077      , {      240,      240,      220,      240,      240} /* GT,GC,E,C,T */
04078      }
04079      , { {      270,      270,      250,      270,      270} /* GT,GC,E,G,E */
04080      , {      210,      210,      190,      210,      210} /* GT,GC,E,G,A */
04081      , {      180,      180,      160,      180,      180} /* GT,GC,E,G,C */
04082      , {      210,      210,      190,      210,      210} /* GT,GC,E,G,G */
04083      , {      270,      270,      250,      270,      270} /* GT,GC,E,G,T */
04084      }
04085      , { {      280,      280,      260,      280,      280} /* GT,GC,E,T,E */
04086      , {      260,      260,      240,      260,      260} /* GT,GC,E,T,A */
04087      , {      240,      240,      220,      240,      240} /* GT,GC,E,T,C */
04088      , {      280,      280,      260,      280,      280} /* GT,GC,E,T,G */
04089      , {      220,      220,      200,      220,      220} /* GT,GC,E,T,T */
04090      }
04091      }
04092      , { { {      260,      230,      260,      230,      260} /* GT,GC,A,E,E */
04093      , {      240,      210,      240,      210,      240} /* GT,GC,A,E,A */
04094      , {      230,      200,      230,      200,      230} /* GT,GC,A,E,C */
04095      , {      260,      230,      260,      230,      260} /* GT,GC,A,E,G */
04096      , {      250,      220,      250,      220,      250} /* GT,GC,A,E,T */
04097      }
04098      , { {      250,      220,      250,      220,      250} /* GT,GC,A,A,E */
04099      , {      180,      150,      180,      150,      180} /* GT,GC,A,A,A */
04100      , {      210,      180,      210,      180,      210} /* GT,GC,A,A,C */
04101      , {      190,      160,      190,      160,      190} /* GT,GC,A,A,G */
04102      , {      250,      220,      250,      220,      250} /* GT,GC,A,A,T */
04103      }
04104      , { {      230,      200,      230,      200,      230} /* GT,GC,A,C,E */
04105      , {      210,      180,      210,      180,      210} /* GT,GC,A,C,A */
04106      , {      230,      200,      230,      200,      230} /* GT,GC,A,C,C */
04107      , {      210,      180,      210,      180,      210} /* GT,GC,A,C,G */
04108      , {      220,      190,      220,      190,      220} /* GT,GC,A,C,T */
04109      }
04110      , { {      250,      220,      250,      220,      250} /* GT,GC,A,G,E */
04111      , {      190,      160,      190,      160,      190} /* GT,GC,A,G,A */
04112      , {      160,      130,      160,      130,      160} /* GT,GC,A,G,C */
04113      , {      190,      160,      190,      160,      190} /* GT,GC,A,G,G */
04114      , {      250,      220,      250,      220,      250} /* GT,GC,A,G,T */
04115      }
04116      , { {      260,      230,      260,      230,      260} /* GT,GC,A,T,E */
04117      , {      240,      210,      240,      210,      240} /* GT,GC,A,T,A */
04118      , {      220,      190,      220,      190,      220} /* GT,GC,A,T,C */
04119      , {      260,      230,      260,      230,      260} /* GT,GC,A,T,G */
04120      , {      200,      170,      200,      170,      200} /* GT,GC,A,T,T */
04121      }
04122      }
04123      , { { {      260,      260,      260,      240,      260} /* GT,GC,C,E,E */
04124      , {      240,      240,      240,      220,      240} /* GT,GC,C,E,A */
04125      , {      230,      230,      230,      210,      230} /* GT,GC,C,E,C */
04126      , {      260,      260,      260,      240,      260} /* GT,GC,C,E,G */
04127      , {      250,      250,      250,      230,      250} /* GT,GC,C,E,T */
04128      }
04129      , { {      250,      250,      250,      230,      250} /* GT,GC,C,A,E */
04130      , {      180,      180,      180,      160,      180} /* GT,GC,C,A,A */
04131      , {      210,      210,      210,      190,      210} /* GT,GC,C,A,C */
04132      , {      190,      190,      190,      170,      190} /* GT,GC,C,A,G */
04133      , {      250,      250,      250,      230,      250} /* GT,GC,C,A,T */
04134      }
04135      , { {      230,      230,      230,      210,      230} /* GT,GC,C,C,E */
04136      , {      210,      210,      210,      190,      210} /* GT,GC,C,C,A */
04137      , {      230,      230,      230,      210,      230} /* GT,GC,C,C,C */
04138      , {      210,      210,      210,      190,      210} /* GT,GC,C,C,G */
04139      , {      220,      220,      220,      200,      220} /* GT,GC,C,C,T */
04140      }
04141      , { {      250,      250,      250,      230,      250} /* GT,GC,C,G,E */
04142      , {      190,      190,      190,      170,      190} /* GT,GC,C,G,A */
04143      , {      160,      160,      160,      140,      160} /* GT,GC,C,G,C */
04144      , {      190,      190,      190,      170,      190} /* GT,GC,C,G,G */
04145      , {      250,      250,      250,      230,      250} /* GT,GC,C,G,T */
04146      }
04147      , { {      260,      260,      260,      240,      260} /* GT,GC,C,T,E */
04148      , {      240,      240,      240,      220,      240} /* GT,GC,C,T,A */
04149      , {      220,      220,      220,      200,      220} /* GT,GC,C,T,C */
04150      , {      260,      260,      260,      240,      260} /* GT,GC,C,T,G */
04151      , {      200,      200,      200,      180,      200} /* GT,GC,C,T,T */
04152      }
04153      }
04154      , { { {      280,      230,      240,      230,      280} /* GT,GC,G,E,E */
04155      , {      260,      210,      220,      210,      260} /* GT,GC,G,E,A */
04156      , {      250,      200,      210,      200,      250} /* GT,GC,G,E,C */
04157      , {      280,      230,      240,      230,      280} /* GT,GC,G,E,G */

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04158      , {      270,      220,      230,      220,      270} /* GT,GC,G,E,T */
04159      }
04160      , { {      270,      220,      230,      220,      270} /* GT,GC,G,A,E */
04161      , {      200,      150,      160,      150,      200} /* GT,GC,G,A,A */
04162      , {      230,      180,      190,      180,      230} /* GT,GC,G,A,C */
04163      , {      210,      160,      170,      160,      210} /* GT,GC,G,A,G */
04164      , {      270,      220,      230,      220,      270} /* GT,GC,G,A,T */
04165      }
04166      , { {      250,      200,      210,      200,      250} /* GT,GC,G,C,E */
04167      , {      230,      180,      190,      180,      230} /* GT,GC,G,C,A */
04168      , {      250,      200,      210,      200,      250} /* GT,GC,G,C,C */
04169      , {      230,      180,      190,      180,      230} /* GT,GC,G,C,G */
04170      , {      240,      190,      200,      190,      240} /* GT,GC,G,C,T */
04171      }
04172      , { {      270,      220,      230,      220,      270} /* GT,GC,G,G,E */
04173      , {      210,      160,      170,      160,      210} /* GT,GC,G,G,A */
04174      , {      180,      130,      140,      130,      180} /* GT,GC,G,G,C */
04175      , {      210,      160,      170,      160,      210} /* GT,GC,G,G,G */
04176      , {      270,      220,      230,      220,      270} /* GT,GC,G,G,T */
04177      }
04178      , { {      280,      230,      240,      230,      280} /* GT,GC,G,T,E */
04179      , {      260,      210,      220,      210,      260} /* GT,GC,G,T,A */
04180      , {      240,      190,      200,      190,      240} /* GT,GC,G,T,C */
04181      , {      280,      230,      240,      230,      280} /* GT,GC,G,T,G */
04182      , {      220,      170,      180,      170,      220} /* GT,GC,G,T,T */
04183      }
04184      }
04185      , { { {      280,      280,      260,      280,      260} /* GT,GC,T,E,E */
04186      , {      260,      260,      240,      260,      240} /* GT,GC,T,E,A */
04187      , {      250,      250,      230,      250,      230} /* GT,GC,T,E,C */
04188      , {      280,      280,      260,      280,      260} /* GT,GC,T,E,G */
04189      , {      270,      270,      250,      270,      250} /* GT,GC,T,E,T */
04190      }
04191      , { {      270,      270,      250,      270,      250} /* GT,GC,T,A,E */
04192      , {      200,      200,      180,      200,      180} /* GT,GC,T,A,A */
04193      , {      230,      230,      210,      230,      210} /* GT,GC,T,A,C */
04194      , {      210,      210,      190,      210,      190} /* GT,GC,T,A,G */
04195      , {      270,      270,      250,      270,      250} /* GT,GC,T,A,T */
04196      }
04197      , { {      250,      250,      230,      250,      230} /* GT,GC,T,C,E */
04198      , {      230,      230,      210,      230,      210} /* GT,GC,T,C,A */
04199      , {      250,      250,      230,      250,      230} /* GT,GC,T,C,C */
04200      , {      230,      230,      210,      230,      210} /* GT,GC,T,C,G */
04201      , {      240,      240,      220,      240,      220} /* GT,GC,T,C,T */
04202      }
04203      , { {      270,      270,      250,      270,      250} /* GT,GC,T,G,E */
04204      , {      210,      210,      190,      210,      190} /* GT,GC,T,G,A */
04205      , {      180,      180,      160,      180,      160} /* GT,GC,T,G,C */
04206      , {      210,      210,      190,      210,      190} /* GT,GC,T,G,G */
04207      , {      270,      270,      250,      270,      250} /* GT,GC,T,G,T */
04208      }
04209      , { {      280,      280,      260,      280,      260} /* GT,GC,T,T,E */
04210      , {      260,      260,      240,      260,      240} /* GT,GC,T,T,A */
04211      , {      240,      240,      220,      240,      220} /* GT,GC,T,T,C */
04212      , {      280,      280,      260,      280,      260} /* GT,GC,T,T,G */
04213      , {      220,      220,      200,      220,      200} /* GT,GC,T,T,T */
04214      }
04215      }
04216      }
04217      , { { { {      310,      310,      290,      310,      310} /* GT,GT,E,E,E */
04218      , {      290,      290,      270,      290,      290} /* GT,GT,E,E,A */
04219      , {      290,      290,      270,      290,      290} /* GT,GT,E,E,C */
04220      , {      310,      310,      290,      310,      310} /* GT,GT,E,E,G */
04221      , {      310,      310,      290,      310,      310} /* GT,GT,E,E,T */
04222      }
04223      , { {      310,      310,      290,      310,      310} /* GT,GT,E,A,E */
04224      , {      260,      260,      240,      260,      260} /* GT,GT,E,A,A */
04225      , {      290,      290,      270,      290,      290} /* GT,GT,E,A,C */
04226      , {      260,      260,      240,      260,      260} /* GT,GT,E,A,G */
04227      , {      310,      310,      290,      310,      310} /* GT,GT,E,A,T */
04228      }
04229      , { { {      290,      290,      270,      290,      290} /* GT,GT,E,C,E */
04230      , {      290,      290,      270,      290,      290} /* GT,GT,E,C,A */
04231      , {      290,      290,      270,      290,      290} /* GT,GT,E,C,C */
04232      , {      270,      270,      250,      270,      270} /* GT,GT,E,C,G */
04233      , {      290,      290,      270,      290,      290} /* GT,GT,E,C,T */
04234      }
04235      , { { {      310,      310,      290,      310,      310} /* GT,GT,E,G,E */
04236      , {      260,      260,      240,      260,      260} /* GT,GT,E,G,A */
04237      , {      270,      270,      250,      270,      270} /* GT,GT,E,G,C */
04238      , {      260,      260,      240,      260,      260} /* GT,GT,E,G,G */
04239      , {      310,      310,      290,      310,      310} /* GT,GT,E,G,T */
04240      }
04241      , { { {      310,      310,      290,      310,      310} /* GT,GT,E,T,E */
04242      , {      290,      290,      270,      290,      290} /* GT,GT,E,T,A */
04243      , {      290,      290,      270,      290,      290} /* GT,GT,E,T,C */
04244      , {      310,      310,      290,      310,      310} /* GT,GT,E,T,G */

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04245     , {      290,      290,      270,      290,      290} /* GT,GT,E,T,T */
04246     }
04247     }
04248     ,{{{      290,      260,      290,      260,      290} /* GT,GT,A,E,E */
04249     , {      270,      240,      270,      240,      270} /* GT,GT,A,E,A */
04250     , {      270,      240,      270,      240,      270} /* GT,GT,A,E,C */
04251     , {      290,      260,      290,      260,      290} /* GT,GT,A,E,G */
04252     , {      290,      260,      290,      260,      290} /* GT,GT,A,E,T */
04253     }
04254     ,{{{      290,      260,      290,      260,      290} /* GT,GT,A,A,E */
04255     , {      240,      210,      240,      210,      240} /* GT,GT,A,A,A */
04256     , {      270,      240,      270,      240,      270} /* GT,GT,A,A,C */
04257     , {      240,      210,      240,      210,      240} /* GT,GT,A,A,G */
04258     , {      290,      260,      290,      260,      290} /* GT,GT,A,A,T */
04259     }
04260     ,{{{      270,      240,      270,      240,      270} /* GT,GT,A,C,E */
04261     , {      270,      240,      270,      240,      270} /* GT,GT,A,C,A */
04262     , {      270,      240,      270,      240,      270} /* GT,GT,A,C,C */
04263     , {      250,      220,      250,      220,      250} /* GT,GT,A,C,G */
04264     , {      270,      240,      270,      240,      270} /* GT,GT,A,C,T */
04265     }
04266     ,{{{      290,      260,      290,      260,      290} /* GT,GT,A,G,E */
04267     , {      240,      210,      240,      210,      240} /* GT,GT,A,G,A */
04268     , {      250,      220,      250,      220,      250} /* GT,GT,A,G,C */
04269     , {      240,      210,      240,      210,      240} /* GT,GT,A,G,G */
04270     , {      290,      260,      290,      260,      290} /* GT,GT,A,G,T */
04271     }
04272     ,{{{      290,      260,      290,      260,      290} /* GT,GT,A,T,E */
04273     , {      270,      240,      270,      240,      270} /* GT,GT,A,T,A */
04274     , {      270,      240,      270,      240,      270} /* GT,GT,A,T,C */
04275     , {      290,      260,      290,      260,      290} /* GT,GT,A,T,G */
04276     , {      270,      240,      270,      240,      270} /* GT,GT,A,T,T */
04277     }
04278     }
04279     ,{{{      290,      290,      290,      270,      290} /* GT,GT,C,E,E */
04280     , {      270,      270,      270,      250,      270} /* GT,GT,C,E,A */
04281     , {      270,      270,      270,      250,      270} /* GT,GT,C,E,C */
04282     , {      290,      290,      290,      270,      290} /* GT,GT,C,E,G */
04283     , {      290,      290,      290,      270,      290} /* GT,GT,C,E,T */
04284     }
04285     ,{{{      290,      290,      290,      270,      290} /* GT,GT,C,A,E */
04286     , {      240,      240,      240,      220,      240} /* GT,GT,C,A,A */
04287     , {      270,      270,      270,      250,      270} /* GT,GT,C,A,C */
04288     , {      240,      240,      240,      220,      240} /* GT,GT,C,A,G */
04289     , {      290,      290,      290,      270,      290} /* GT,GT,C,A,T */
04290     }
04291     ,{{{      270,      270,      270,      250,      270} /* GT,GT,C,C,E */
04292     , {      270,      270,      270,      250,      270} /* GT,GT,C,C,A */
04293     , {      270,      270,      270,      250,      270} /* GT,GT,C,C,C */
04294     , {      250,      250,      250,      230,      250} /* GT,GT,C,C,G */
04295     , {      270,      270,      270,      250,      270} /* GT,GT,C,C,T */
04296     }
04297     ,{{{      290,      290,      290,      270,      290} /* GT,GT,C,G,E */
04298     , {      240,      240,      240,      220,      240} /* GT,GT,C,G,A */
04299     , {      250,      250,      250,      230,      250} /* GT,GT,C,G,C */
04300     , {      240,      240,      240,      220,      240} /* GT,GT,C,G,G */
04301     , {      290,      290,      290,      270,      290} /* GT,GT,C,G,T */
04302     }
04303     ,{{{      290,      290,      290,      270,      290} /* GT,GT,C,T,E */
04304     , {      270,      270,      270,      250,      270} /* GT,GT,C,T,A */
04305     , {      270,      270,      270,      250,      270} /* GT,GT,C,T,C */
04306     , {      290,      290,      290,      270,      290} /* GT,GT,C,T,G */
04307     , {      270,      270,      270,      250,      270} /* GT,GT,C,T,T */
04308     }
04309     }
04310     ,{{{      310,      260,      270,      260,      310} /* GT,GT,G,E,E */
04311     , {      290,      240,      250,      240,      290} /* GT,GT,G,E,A */
04312     , {      290,      240,      250,      240,      290} /* GT,GT,G,E,C */
04313     , {      310,      260,      270,      260,      310} /* GT,GT,G,E,G */
04314     , {      310,      260,      270,      260,      310} /* GT,GT,G,E,T */
04315     }
04316     ,{{{      310,      260,      270,      260,      310} /* GT,GT,G,A,E */
04317     , {      260,      210,      220,      210,      260} /* GT,GT,G,A,A */
04318     , {      290,      240,      250,      240,      290} /* GT,GT,G,A,C */
04319     , {      260,      210,      220,      210,      260} /* GT,GT,G,A,G */
04320     , {      310,      260,      270,      260,      310} /* GT,GT,G,A,T */
04321     }
04322     ,{{{      290,      240,      250,      240,      290} /* GT,GT,G,C,E */
04323     , {      290,      240,      250,      240,      290} /* GT,GT,G,C,A */
04324     , {      290,      240,      250,      240,      290} /* GT,GT,G,C,C */
04325     , {      270,      220,      230,      220,      270} /* GT,GT,G,C,G */
04326     , {      290,      240,      250,      240,      290} /* GT,GT,G,C,T */
04327     }
04328     ,{{{      310,      260,      270,      260,      310} /* GT,GT,G,G,E */
04329     , {      260,      210,      220,      210,      260} /* GT,GT,G,G,A */
04330     , {      270,      220,      230,      220,      270} /* GT,GT,G,G,C */
04331     , {      260,      210,      220,      210,      260} /* GT,GT,G,G,G */

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04332      , {      310,      260,      270,      260,      310} /* GT,GT,G,G,T */
04333      }
04334      , {{      310,      260,      270,      260,      310} /* GT,GT,G,T,E */
04335      , {      290,      240,      250,      240,      290} /* GT,GT,G,T,A */
04336      , {      290,      240,      250,      240,      290} /* GT,GT,G,T,C */
04337      , {      310,      260,      270,      260,      310} /* GT,GT,G,T,G */
04338      , {      290,      240,      250,      240,      290} /* GT,GT,G,T,T */
04339      }
04340      }
04341      , {{{      310,      310,      290,      310,      290} /* GT,GT,T,E,E */
04342      , {      290,      290,      270,      290,      270} /* GT,GT,T,E,A */
04343      , {      290,      290,      270,      290,      270} /* GT,GT,T,E,C */
04344      , {      310,      310,      290,      310,      290} /* GT,GT,T,E,G */
04345      , {      310,      310,      290,      310,      290} /* GT,GT,T,E,T */
04346      }
04347      , {{      310,      310,      290,      310,      290} /* GT,GT,T,A,E */
04348      , {      260,      260,      240,      260,      240} /* GT,GT,T,A,A */
04349      , {      290,      290,      270,      290,      270} /* GT,GT,T,A,C */
04350      , {      260,      260,      240,      260,      240} /* GT,GT,T,A,G */
04351      , {      310,      310,      290,      310,      290} /* GT,GT,T,A,T */
04352      }
04353      , {{      290,      290,      270,      290,      270} /* GT,GT,T,C,E */
04354      , {      290,      290,      270,      290,      270} /* GT,GT,T,C,A */
04355      , {      290,      290,      270,      290,      270} /* GT,GT,T,C,C */
04356      , {      270,      270,      250,      270,      250} /* GT,GT,T,C,G */
04357      , {      290,      290,      270,      290,      270} /* GT,GT,T,C,T */
04358      }
04359      , {{      310,      310,      290,      310,      290} /* GT,GT,T,G,E */
04360      , {      260,      260,      240,      260,      240} /* GT,GT,T,G,A */
04361      , {      270,      270,      250,      270,      250} /* GT,GT,T,G,C */
04362      , {      260,      260,      240,      260,      240} /* GT,GT,T,G,G */
04363      , {      310,      310,      290,      310,      290} /* GT,GT,T,G,T */
04364      }
04365      , {{      310,      310,      290,      310,      290} /* GT,GT,T,T,E */
04366      , {      290,      290,      270,      290,      270} /* GT,GT,T,T,A */
04367      , {      290,      290,      270,      290,      270} /* GT,GT,T,T,C */
04368      , {      310,      310,      290,      310,      290} /* GT,GT,T,T,G */
04369      , {      290,      290,      270,      290,      270} /* GT,GT,T,T,T */
04370      }
04371      }
04372      }
04373      , {{{      310,      310,      290,      310,      310} /* GT,TG,E,E,E */
04374      , {      310,      310,      290,      310,      310} /* GT,TG,E,E,A */
04375      , {      290,      290,      270,      290,      290} /* GT,TG,E,E,C */
04376      , {      310,      310,      290,      310,      310} /* GT,TG,E,E,G */
04377      , {      310,      310,      290,      310,      310} /* GT,TG,E,E,T */
04378      }
04379      , {{      310,      310,      290,      310,      310} /* GT,TG,E,A,E */
04380      , {      260,      260,      240,      260,      260} /* GT,TG,E,A,A */
04381      , {      290,      290,      270,      290,      290} /* GT,TG,E,A,C */
04382      , {      260,      260,      240,      260,      260} /* GT,TG,E,A,G */
04383      , {      310,      310,      290,      310,      310} /* GT,TG,E,A,T */
04384      }
04385      , {{      290,      290,      270,      290,      290} /* GT,TG,E,C,E */
04386      , {      290,      290,      270,      290,      290} /* GT,TG,E,C,A */
04387      , {      290,      290,      270,      290,      290} /* GT,TG,E,C,C */
04388      , {      260,      260,      240,      260,      260} /* GT,TG,E,C,G */
04389      , {      290,      290,      270,      290,      290} /* GT,TG,E,C,T */
04390      }
04391      , {{      310,      310,      290,      310,      310} /* GT,TG,E,G,E */
04392      , {      260,      260,      240,      260,      260} /* GT,TG,E,G,A */
04393      , {      280,      280,      260,      280,      280} /* GT,TG,E,G,C */
04394      , {      260,      260,      240,      260,      260} /* GT,TG,E,G,G */
04395      , {      310,      310,      290,      310,      310} /* GT,TG,E,G,T */
04396      }
04397      , {{      310,      310,      290,      310,      310} /* GT,TG,E,T,E */
04398      , {      310,      310,      290,      310,      310} /* GT,TG,E,T,A */
04399      , {      290,      290,      270,      290,      290} /* GT,TG,E,T,C */
04400      , {      310,      310,      290,      310,      310} /* GT,TG,E,T,G */
04401      , {      290,      290,      270,      290,      290} /* GT,TG,E,T,T */
04402      }
04403      }
04404      , {{{      290,      260,      290,      260,      290} /* GT,TG,A,E,E */
04405      , {      290,      260,      290,      260,      290} /* GT,TG,A,E,A */
04406      , {      270,      240,      270,      240,      270} /* GT,TG,A,E,C */
04407      , {      290,      260,      290,      260,      290} /* GT,TG,A,E,G */
04408      , {      290,      260,      290,      260,      290} /* GT,TG,A,E,T */
04409      }
04410      , {{      290,      260,      290,      260,      290} /* GT,TG,A,A,E */
04411      , {      240,      210,      240,      210,      240} /* GT,TG,A,A,A */
04412      , {      270,      240,      270,      240,      270} /* GT,TG,A,A,C */
04413      , {      240,      210,      240,      210,      240} /* GT,TG,A,A,G */
04414      , {      290,      260,      290,      260,      290} /* GT,TG,A,A,T */
04415      }
04416      , {{      270,      240,      270,      240,      270} /* GT,TG,A,C,E */
04417      , {      270,      240,      270,      240,      270} /* GT,TG,A,C,A */
04418      , {      270,      240,      270,      240,      270} /* GT,TG,A,C,C */

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04419      , {      240,      210,      240,      210,      240} /* GT, TG, A, C, G */
04420      , {      270,      240,      270,      240,      270} /* GT, TG, A, C, T */
04421      }
04422      , { {      290,      260,      290,      260,      290} /* GT, TG, A, G, E */
04423      , {      240,      210,      240,      210,      240} /* GT, TG, A, G, A */
04424      , {      260,      230,      260,      230,      260} /* GT, TG, A, G, C */
04425      , {      240,      210,      240,      210,      240} /* GT, TG, A, G, G */
04426      , {      290,      260,      290,      260,      290} /* GT, TG, A, G, T */
04427      }
04428      , { {      290,      260,      290,      260,      290} /* GT, TG, A, T, E */
04429      , {      290,      260,      290,      260,      290} /* GT, TG, A, T, A */
04430      , {      270,      240,      270,      240,      270} /* GT, TG, A, T, C */
04431      , {      290,      260,      290,      260,      290} /* GT, TG, A, T, G */
04432      , {      270,      240,      270,      240,      270} /* GT, TG, A, T, T */
04433      }
04434      }
04435      , { { {      290,      290,      290,      270,      290} /* GT, TG, C, E, E */
04436      , {      290,      290,      290,      270,      290} /* GT, TG, C, E, A */
04437      , {      270,      270,      270,      250,      270} /* GT, TG, C, E, C */
04438      , {      290,      290,      290,      270,      290} /* GT, TG, C, E, G */
04439      , {      290,      290,      290,      270,      290} /* GT, TG, C, E, T */
04440      }
04441      , { {      290,      290,      290,      270,      290} /* GT, TG, C, A, E */
04442      , {      240,      240,      240,      220,      240} /* GT, TG, C, A, A */
04443      , {      270,      270,      270,      250,      270} /* GT, TG, C, A, C */
04444      , {      240,      240,      240,      220,      240} /* GT, TG, C, A, G */
04445      , {      290,      290,      290,      270,      290} /* GT, TG, C, A, T */
04446      }
04447      , { {      270,      270,      270,      250,      270} /* GT, TG, C, C, E */
04448      , {      270,      270,      270,      250,      270} /* GT, TG, C, C, A */
04449      , {      270,      270,      270,      250,      270} /* GT, TG, C, C, C */
04450      , {      240,      240,      240,      220,      240} /* GT, TG, C, C, G */
04451      , {      270,      270,      270,      250,      270} /* GT, TG, C, C, T */
04452      }
04453      , { {      290,      290,      290,      270,      290} /* GT, TG, C, G, E */
04454      , {      240,      240,      240,      220,      240} /* GT, TG, C, G, A */
04455      , {      260,      260,      260,      240,      260} /* GT, TG, C, G, C */
04456      , {      240,      240,      240,      220,      240} /* GT, TG, C, G, G */
04457      , {      290,      290,      290,      270,      290} /* GT, TG, C, G, T */
04458      }
04459      , { {      290,      290,      290,      270,      290} /* GT, TG, C, T, E */
04460      , {      290,      290,      290,      270,      290} /* GT, TG, C, T, A */
04461      , {      270,      270,      270,      250,      270} /* GT, TG, C, T, C */
04462      , {      290,      290,      290,      270,      290} /* GT, TG, C, T, G */
04463      , {      270,      270,      270,      250,      270} /* GT, TG, C, T, T */
04464      }
04465      }
04466      , { { {      310,      260,      270,      260,      310} /* GT, TG, G, E, E */
04467      , {      310,      260,      270,      260,      310} /* GT, TG, G, E, A */
04468      , {      290,      240,      250,      240,      290} /* GT, TG, G, E, C */
04469      , {      310,      260,      270,      260,      310} /* GT, TG, G, E, G */
04470      , {      310,      260,      270,      260,      310} /* GT, TG, G, E, T */
04471      }
04472      , { {      310,      260,      270,      260,      310} /* GT, TG, G, A, E */
04473      , {      260,      210,      220,      210,      260} /* GT, TG, G, A, A */
04474      , {      290,      240,      250,      240,      290} /* GT, TG, G, A, C */
04475      , {      260,      210,      220,      210,      260} /* GT, TG, G, A, G */
04476      , {      310,      260,      270,      260,      310} /* GT, TG, G, A, T */
04477      }
04478      , { {      290,      240,      250,      240,      290} /* GT, TG, G, C, E */
04479      , {      290,      240,      250,      240,      290} /* GT, TG, G, C, A */
04480      , {      290,      240,      250,      240,      290} /* GT, TG, G, C, C */
04481      , {      260,      210,      220,      210,      260} /* GT, TG, G, C, G */
04482      , {      290,      240,      250,      240,      290} /* GT, TG, G, C, T */
04483      }
04484      , { {      310,      260,      270,      260,      310} /* GT, TG, G, G, E */
04485      , {      260,      210,      220,      210,      260} /* GT, TG, G, G, A */
04486      , {      280,      230,      240,      230,      280} /* GT, TG, G, G, C */
04487      , {      260,      210,      220,      210,      260} /* GT, TG, G, G, G */
04488      , {      310,      260,      270,      260,      310} /* GT, TG, G, G, T */
04489      }
04490      , { {      310,      260,      270,      260,      310} /* GT, TG, G, T, E */
04491      , {      310,      260,      270,      260,      310} /* GT, TG, G, T, A */
04492      , {      290,      240,      250,      240,      290} /* GT, TG, G, T, C */
04493      , {      310,      260,      270,      260,      310} /* GT, TG, G, T, G */
04494      , {      290,      240,      250,      240,      290} /* GT, TG, G, T, T */
04495      }
04496      }
04497      , { { {      310,      310,      290,      310,      290} /* GT, TG, T, E, E */
04498      , {      310,      310,      290,      310,      290} /* GT, TG, T, E, A */
04499      , {      290,      290,      270,      290,      270} /* GT, TG, T, E, C */
04500      , {      310,      310,      290,      310,      290} /* GT, TG, T, E, G */
04501      , {      310,      310,      290,      310,      290} /* GT, TG, T, E, T */
04502      }
04503      , { {      310,      310,      290,      310,      290} /* GT, TG, T, A, E */
04504      , {      260,      260,      240,      260,      240} /* GT, TG, T, A, A */
04505      , {      290,      290,      270,      290,      270} /* GT, TG, T, A, C */

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04506 , { 260, 260, 240, 260, 240} /* GT,TG,T,A,G */
04507 , { 310, 310, 290, 310, 290} /* GT,TG,T,A,T */
04508 }
04509 , {{ 290, 290, 270, 290, 270} /* GT,TG,T,C,E */
04510 , { 290, 290, 270, 290, 270} /* GT,TG,T,C,A */
04511 , { 290, 290, 270, 290, 270} /* GT,TG,T,C,C */
04512 , { 260, 260, 240, 260, 240} /* GT,TG,T,C,G */
04513 , { 290, 290, 270, 290, 270} /* GT,TG,T,C,T */
04514 }
04515 , {{ 310, 310, 290, 310, 290} /* GT,TG,T,G,E */
04516 , { 260, 260, 240, 260, 240} /* GT,TG,T,G,A */
04517 , { 280, 280, 260, 280, 260} /* GT,TG,T,G,C */
04518 , { 260, 260, 240, 260, 240} /* GT,TG,T,G,G */
04519 , { 310, 310, 290, 310, 290} /* GT,TG,T,G,T */
04520 }
04521 , {{ 310, 310, 290, 310, 290} /* GT,TG,T,T,E */
04522 , { 310, 310, 290, 310, 290} /* GT,TG,T,T,A */
04523 , { 290, 290, 270, 290, 270} /* GT,TG,T,T,C */
04524 , { 310, 310, 290, 310, 290} /* GT,TG,T,T,G */
04525 , { 290, 290, 270, 290, 270} /* GT,TG,T,T,T */
04526 }
04527 }
04528 }
04529 , {{{ 310, 310, 290, 310, 310} /* GT,AT,E,E,E */
04530 , { 310, 310, 290, 310, 310} /* GT,AT,E,E,A */
04531 , { 280, 280, 260, 280, 280} /* GT,AT,E,E,C */
04532 , { 310, 310, 290, 310, 310} /* GT,AT,E,E,G */
04533 , { 310, 310, 290, 310, 310} /* GT,AT,E,E,T */
04534 }
04535 , {{ 310, 310, 290, 310, 310} /* GT,AT,E,A,E */
04536 , { 240, 240, 220, 240, 240} /* GT,AT,E,A,A */
04537 , { 260, 260, 240, 260, 260} /* GT,AT,E,A,C */
04538 , { 250, 250, 230, 250, 250} /* GT,AT,E,A,G */
04539 , { 310, 310, 290, 310, 310} /* GT,AT,E,A,T */
04540 }
04541 , {{ 290, 290, 270, 290, 290} /* GT,AT,E,C,E */
04542 , { 260, 260, 240, 260, 260} /* GT,AT,E,C,A */
04543 , { 280, 280, 260, 280, 280} /* GT,AT,E,C,C */
04544 , { 290, 290, 270, 290, 290} /* GT,AT,E,C,G */
04545 , { 270, 270, 250, 270, 270} /* GT,AT,E,C,T */
04546 }
04547 , {{ 310, 310, 290, 310, 310} /* GT,AT,E,G,E */
04548 , { 250, 250, 230, 250, 250} /* GT,AT,E,G,A */
04549 , { 270, 270, 250, 270, 270} /* GT,AT,E,G,C */
04550 , { 250, 250, 230, 250, 250} /* GT,AT,E,G,G */
04551 , { 310, 310, 290, 310, 310} /* GT,AT,E,G,T */
04552 }
04553 , {{ 310, 310, 290, 310, 310} /* GT,AT,E,T,E */
04554 , { 310, 310, 290, 310, 310} /* GT,AT,E,T,A */
04555 , { 270, 270, 250, 270, 270} /* GT,AT,E,T,C */
04556 , { 310, 310, 290, 310, 310} /* GT,AT,E,T,G */
04557 , { 250, 250, 230, 250, 250} /* GT,AT,E,T,T */
04558 }
04559 }
04560 , {{{ 290, 260, 290, 260, 290} /* GT,AT,A,E,E */
04561 , { 290, 260, 290, 260, 290} /* GT,AT,A,E,A */
04562 , { 260, 230, 260, 230, 260} /* GT,AT,A,E,C */
04563 , { 290, 260, 290, 260, 290} /* GT,AT,A,E,G */
04564 , { 290, 260, 290, 260, 290} /* GT,AT,A,E,T */
04565 }
04566 , {{ 290, 260, 290, 260, 290} /* GT,AT,A,A,E */
04567 , { 220, 190, 220, 190, 220} /* GT,AT,A,A,A */
04568 , { 240, 210, 240, 210, 240} /* GT,AT,A,A,C */
04569 , { 230, 200, 230, 200, 230} /* GT,AT,A,A,G */
04570 , { 290, 260, 290, 260, 290} /* GT,AT,A,A,T */
04571 }
04572 , {{ 270, 240, 270, 240, 270} /* GT,AT,A,C,E */
04573 , { 240, 210, 240, 210, 240} /* GT,AT,A,C,A */
04574 , { 260, 230, 260, 230, 260} /* GT,AT,A,C,C */
04575 , { 270, 240, 270, 240, 270} /* GT,AT,A,C,G */
04576 , { 250, 220, 250, 220, 250} /* GT,AT,A,C,T */
04577 }
04578 , {{ 290, 260, 290, 260, 290} /* GT,AT,A,G,E */
04579 , { 230, 200, 230, 200, 230} /* GT,AT,A,G,A */
04580 , { 250, 220, 250, 220, 250} /* GT,AT,A,G,C */
04581 , { 230, 200, 230, 200, 230} /* GT,AT,A,G,G */
04582 , { 290, 260, 290, 260, 290} /* GT,AT,A,G,T */
04583 }
04584 , {{ 290, 260, 290, 260, 290} /* GT,AT,A,T,E */
04585 , { 290, 260, 290, 260, 290} /* GT,AT,A,T,A */
04586 , { 250, 220, 250, 220, 250} /* GT,AT,A,T,C */
04587 , { 290, 260, 290, 260, 290} /* GT,AT,A,T,G */
04588 , { 230, 200, 230, 200, 230} /* GT,AT,A,T,T */
04589 }
04590 }
04591 , {{{ 290, 290, 290, 270, 290} /* GT,AT,C,E,E */
04592 , { 290, 290, 290, 270, 290} /* GT,AT,C,E,A */

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04593      , {      260,      260,      260,      240,      260} /* GT,AT,C,E,C */
04594      , {      290,      290,      290,      270,      290} /* GT,AT,C,E,G */
04595      , {      290,      290,      290,      270,      290} /* GT,AT,C,E,T */
04596      }
04597      , {{      290,      290,      290,      270,      290} /* GT,AT,C,A,E */
04598      , {      220,      220,      220,      200,      220} /* GT,AT,C,A,A */
04599      , {      240,      240,      240,      220,      240} /* GT,AT,C,A,C */
04600      , {      230,      230,      230,      210,      230} /* GT,AT,C,A,G */
04601      , {      290,      290,      290,      270,      290} /* GT,AT,C,A,T */
04602      }
04603      , {{      270,      270,      270,      250,      270} /* GT,AT,C,C,E */
04604      , {      240,      240,      240,      220,      240} /* GT,AT,C,C,A */
04605      , {      260,      260,      260,      240,      260} /* GT,AT,C,C,C */
04606      , {      270,      270,      270,      250,      270} /* GT,AT,C,C,G */
04607      , {      250,      250,      250,      230,      250} /* GT,AT,C,C,T */
04608      }
04609      , {{      290,      290,      290,      270,      290} /* GT,AT,C,G,E */
04610      , {      230,      230,      230,      210,      230} /* GT,AT,C,G,A */
04611      , {      250,      250,      250,      230,      250} /* GT,AT,C,G,C */
04612      , {      230,      230,      230,      210,      230} /* GT,AT,C,G,G */
04613      , {      290,      290,      290,      270,      290} /* GT,AT,C,G,T */
04614      }
04615      , {{      290,      290,      290,      270,      290} /* GT,AT,C,T,E */
04616      , {      290,      290,      290,      270,      290} /* GT,AT,C,T,A */
04617      , {      250,      250,      250,      230,      250} /* GT,AT,C,T,C */
04618      , {      290,      290,      290,      270,      290} /* GT,AT,C,T,G */
04619      , {      230,      230,      230,      210,      230} /* GT,AT,C,T,T */
04620      }
04621      }
04622      , {{{      310,      260,      270,      260,      310} /* GT,AT,G,E,E */
04623      , {      310,      260,      270,      260,      310} /* GT,AT,G,E,A */
04624      , {      280,      230,      240,      230,      280} /* GT,AT,G,E,C */
04625      , {      310,      260,      270,      260,      310} /* GT,AT,G,E,G */
04626      , {      310,      260,      270,      260,      310} /* GT,AT,G,E,T */
04627      }
04628      , {{      310,      260,      270,      260,      310} /* GT,AT,G,A,E */
04629      , {      240,      190,      200,      190,      240} /* GT,AT,G,A,A */
04630      , {      260,      210,      220,      210,      260} /* GT,AT,G,A,C */
04631      , {      250,      200,      210,      200,      250} /* GT,AT,G,A,G */
04632      , {      310,      260,      270,      260,      310} /* GT,AT,G,A,T */
04633      }
04634      , {{      290,      240,      250,      240,      290} /* GT,AT,G,C,E */
04635      , {      260,      210,      220,      210,      260} /* GT,AT,G,C,A */
04636      , {      280,      230,      240,      230,      280} /* GT,AT,G,C,C */
04637      , {      290,      240,      250,      240,      290} /* GT,AT,G,C,G */
04638      , {      270,      220,      230,      220,      270} /* GT,AT,G,C,T */
04639      }
04640      , {{      310,      260,      270,      260,      310} /* GT,AT,G,G,E */
04641      , {      250,      200,      210,      200,      250} /* GT,AT,G,G,A */
04642      , {      270,      220,      230,      220,      270} /* GT,AT,G,G,C */
04643      , {      250,      200,      210,      200,      250} /* GT,AT,G,G,G */
04644      , {      310,      260,      270,      260,      310} /* GT,AT,G,G,T */
04645      }
04646      , {{      310,      260,      270,      260,      310} /* GT,AT,G,T,E */
04647      , {      310,      260,      270,      260,      310} /* GT,AT,G,T,A */
04648      , {      270,      220,      230,      220,      270} /* GT,AT,G,T,C */
04649      , {      310,      260,      270,      260,      310} /* GT,AT,G,T,G */
04650      , {      250,      200,      210,      200,      250} /* GT,AT,G,T,T */
04651      }
04652      }
04653      , {{{      310,      310,      290,      310,      290} /* GT,AT,T,E,E */
04654      , {      310,      310,      290,      310,      290} /* GT,AT,T,E,A */
04655      , {      280,      280,      260,      280,      260} /* GT,AT,T,E,C */
04656      , {      310,      310,      290,      310,      290} /* GT,AT,T,E,G */
04657      , {      310,      310,      290,      310,      290} /* GT,AT,T,E,T */
04658      }
04659      , {{      310,      310,      290,      310,      290} /* GT,AT,T,A,E */
04660      , {      240,      240,      220,      240,      220} /* GT,AT,T,A,A */
04661      , {      260,      260,      240,      260,      240} /* GT,AT,T,A,C */
04662      , {      250,      250,      230,      250,      230} /* GT,AT,T,A,G */
04663      , {      310,      310,      290,      310,      290} /* GT,AT,T,A,T */
04664      }
04665      , {{      290,      290,      270,      290,      270} /* GT,AT,T,C,E */
04666      , {      260,      260,      240,      260,      240} /* GT,AT,T,C,A */
04667      , {      280,      280,      260,      280,      260} /* GT,AT,T,C,C */
04668      , {      290,      290,      270,      290,      270} /* GT,AT,T,C,G */
04669      , {      270,      270,      250,      270,      250} /* GT,AT,T,C,T */
04670      }
04671      , {{      310,      310,      290,      310,      290} /* GT,AT,T,G,E */
04672      , {      250,      250,      230,      250,      230} /* GT,AT,T,G,A */
04673      , {      270,      270,      250,      270,      250} /* GT,AT,T,G,C */
04674      , {      250,      250,      230,      250,      230} /* GT,AT,T,G,G */
04675      , {      310,      310,      290,      310,      290} /* GT,AT,T,G,T */
04676      }
04677      , {{      310,      310,      290,      310,      290} /* GT,AT,T,T,E */
04678      , {      310,      310,      290,      310,      290} /* GT,AT,T,T,A */
04679      , {      270,      270,      250,      270,      250} /* GT,AT,T,T,C */

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04680      , {      310,      310,      290,      310,      290} /* GT,AT,T,T,G */
04681      , {      250,      250,      230,      250,      230} /* GT,AT,T,T,T */
04682      }
04683      }
04684      }
04685      ,{{{      310,      310,      290,      310,      310} /* GT,TA,E,E,E */
04686      , {      310,      310,      290,      310,      310} /* GT,TA,E,E,A */
04687      , {      280,      280,      260,      280,      280} /* GT,TA,E,E,C */
04688      , {      310,      310,      290,      310,      310} /* GT,TA,E,E,G */
04689      , {      310,      310,      290,      310,      310} /* GT,TA,E,E,T */
04690      }
04691      , { {      310,      310,      290,      310,      310} /* GT,TA,E,A,E */
04692      , {      250,      250,      230,      250,      250} /* GT,TA,E,A,A */
04693      , {      260,      260,      240,      260,      260} /* GT,TA,E,A,C */
04694      , {      250,      250,      230,      250,      250} /* GT,TA,E,A,G */
04695      , {      310,      310,      290,      310,      310} /* GT,TA,E,A,T */
04696      }
04697      , { {      310,      310,      290,      310,      310} /* GT,TA,E,C,E */
04698      , {      260,      260,      240,      260,      260} /* GT,TA,E,C,A */
04699      , {      280,      280,      260,      280,      280} /* GT,TA,E,C,C */
04700      , {      310,      310,      290,      310,      310} /* GT,TA,E,C,G */
04701      , {      270,      270,      250,      270,      270} /* GT,TA,E,C,T */
04702      }
04703      , { {      300,      300,      280,      300,      300} /* GT,TA,E,G,E */
04704      , {      250,      250,      230,      250,      250} /* GT,TA,E,G,A */
04705      , {      260,      260,      240,      260,      260} /* GT,TA,E,G,C */
04706      , {      250,      250,      230,      250,      250} /* GT,TA,E,G,G */
04707      , {      300,      300,      280,      300,      300} /* GT,TA,E,G,T */
04708      }
04709      , { {      310,      310,      290,      310,      310} /* GT,TA,E,T,E */
04710      , {      310,      310,      290,      310,      310} /* GT,TA,E,T,A */
04711      , {      270,      270,      250,      270,      270} /* GT,TA,E,T,C */
04712      , {      310,      310,      290,      310,      310} /* GT,TA,E,T,G */
04713      , {      250,      250,      230,      250,      250} /* GT,TA,E,T,T */
04714      }
04715      }
04716      ,{{{      290,      260,      290,      260,      290} /* GT,TA,A,E,E */
04717      , {      290,      260,      290,      260,      290} /* GT,TA,A,E,A */
04718      , {      260,      230,      260,      230,      260} /* GT,TA,A,E,C */
04719      , {      290,      260,      290,      260,      290} /* GT,TA,A,E,G */
04720      , {      290,      260,      290,      260,      290} /* GT,TA,A,E,T */
04721      }
04722      , { {      290,      260,      290,      260,      290} /* GT,TA,A,A,E */
04723      , {      230,      200,      230,      200,      230} /* GT,TA,A,A,A */
04724      , {      240,      210,      240,      210,      240} /* GT,TA,A,A,C */
04725      , {      230,      200,      230,      200,      230} /* GT,TA,A,A,G */
04726      , {      290,      260,      290,      260,      290} /* GT,TA,A,A,T */
04727      }
04728      , { {      290,      260,      290,      260,      290} /* GT,TA,A,C,E */
04729      , {      240,      210,      240,      210,      240} /* GT,TA,A,C,A */
04730      , {      260,      230,      260,      230,      260} /* GT,TA,A,C,C */
04731      , {      290,      260,      290,      260,      290} /* GT,TA,A,C,G */
04732      , {      250,      220,      250,      220,      250} /* GT,TA,A,C,T */
04733      }
04734      , { {      280,      250,      280,      250,      280} /* GT,TA,A,G,E */
04735      , {      230,      200,      230,      200,      230} /* GT,TA,A,G,A */
04736      , {      240,      210,      240,      210,      240} /* GT,TA,A,G,C */
04737      , {      230,      200,      230,      200,      230} /* GT,TA,A,G,G */
04738      , {      280,      250,      280,      250,      280} /* GT,TA,A,G,T */
04739      }
04740      , { {      290,      260,      290,      260,      290} /* GT,TA,A,T,E */
04741      , {      290,      260,      290,      260,      290} /* GT,TA,A,T,A */
04742      , {      250,      220,      250,      220,      250} /* GT,TA,A,T,C */
04743      , {      290,      260,      290,      260,      290} /* GT,TA,A,T,G */
04744      , {      230,      200,      230,      200,      230} /* GT,TA,A,T,T */
04745      }
04746      }
04747      ,{{{      290,      290,      290,      270,      290} /* GT,TA,C,E,E */
04748      , {      290,      290,      290,      270,      290} /* GT,TA,C,E,A */
04749      , {      260,      260,      260,      240,      260} /* GT,TA,C,E,C */
04750      , {      290,      290,      290,      270,      290} /* GT,TA,C,E,G */
04751      , {      290,      290,      290,      270,      290} /* GT,TA,C,E,T */
04752      }
04753      , { {      290,      290,      290,      270,      290} /* GT,TA,C,A,E */
04754      , {      230,      230,      230,      210,      230} /* GT,TA,C,A,A */
04755      , {      240,      240,      240,      220,      240} /* GT,TA,C,A,C */
04756      , {      230,      230,      230,      210,      230} /* GT,TA,C,A,G */
04757      , {      290,      290,      290,      270,      290} /* GT,TA,C,A,T */
04758      }
04759      , { {      290,      290,      290,      270,      290} /* GT,TA,C,C,E */
04760      , {      240,      240,      240,      220,      240} /* GT,TA,C,C,A */
04761      , {      260,      260,      260,      240,      260} /* GT,TA,C,C,C */
04762      , {      290,      290,      290,      270,      290} /* GT,TA,C,C,G */
04763      , {      250,      250,      250,      230,      250} /* GT,TA,C,C,T */
04764      }
04765      , { {      280,      280,      280,      260,      280} /* GT,TA,C,G,E */
04766      , {      230,      230,      230,      210,      230} /* GT,TA,C,G,A */

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04767      , {      240,      240,      240,      220,      240} /* GT,TA,C,G,C */
04768      , {      230,      230,      230,      210,      230} /* GT,TA,C,G,G */
04769      , {      280,      280,      280,      260,      280} /* GT,TA,C,G,T */
04770      }
04771      , {{      290,      290,      290,      270,      290} /* GT,TA,C,T,E */
04772      , {      290,      290,      290,      270,      290} /* GT,TA,C,T,A */
04773      , {      250,      250,      250,      230,      250} /* GT,TA,C,T,C */
04774      , {      290,      290,      290,      270,      290} /* GT,TA,C,T,G */
04775      , {      230,      230,      230,      210,      230} /* GT,TA,C,T,T */
04776      }
04777      }
04778      , {{{      310,      260,      270,      260,      310} /* GT,TA,G,E,E */
04779      , {      310,      260,      270,      260,      310} /* GT,TA,G,E,A */
04780      , {      280,      230,      240,      230,      280} /* GT,TA,G,E,C */
04781      , {      310,      260,      270,      260,      310} /* GT,TA,G,E,G */
04782      , {      310,      260,      270,      260,      310} /* GT,TA,G,E,T */
04783      }
04784      , {{      310,      260,      270,      260,      310} /* GT,TA,G,A,E */
04785      , {      250,      200,      210,      200,      250} /* GT,TA,G,A,A */
04786      , {      260,      210,      220,      210,      260} /* GT,TA,G,A,C */
04787      , {      250,      200,      210,      200,      250} /* GT,TA,G,A,G */
04788      , {      310,      260,      270,      260,      310} /* GT,TA,G,A,T */
04789      }
04790      , {{      310,      260,      270,      260,      310} /* GT,TA,G,C,E */
04791      , {      260,      210,      220,      210,      260} /* GT,TA,G,C,A */
04792      , {      280,      230,      240,      230,      280} /* GT,TA,G,C,C */
04793      , {      310,      260,      270,      260,      310} /* GT,TA,G,C,G */
04794      , {      270,      220,      230,      220,      270} /* GT,TA,G,C,T */
04795      }
04796      , {{{      300,      250,      260,      250,      300} /* GT,TA,G,G,E */
04797      , {      250,      200,      210,      200,      250} /* GT,TA,G,G,A */
04798      , {      260,      210,      220,      210,      260} /* GT,TA,G,G,C */
04799      , {      250,      200,      210,      200,      250} /* GT,TA,G,G,G */
04800      , {      300,      250,      260,      250,      300} /* GT,TA,G,G,T */
04801      }
04802      , {{{      310,      260,      270,      260,      310} /* GT,TA,G,T,E */
04803      , {      310,      260,      270,      260,      310} /* GT,TA,G,T,A */
04804      , {      270,      220,      230,      220,      270} /* GT,TA,G,T,C */
04805      , {      310,      260,      270,      260,      310} /* GT,TA,G,T,G */
04806      , {      250,      200,      210,      200,      250} /* GT,TA,G,T,T */
04807      }
04808      }
04809      , {{{      310,      310,      290,      310,      290} /* GT,TA,T,E,E */
04810      , {      310,      310,      290,      310,      290} /* GT,TA,T,E,A */
04811      , {      280,      280,      260,      280,      260} /* GT,TA,T,E,C */
04812      , {      310,      310,      290,      310,      290} /* GT,TA,T,E,G */
04813      , {      310,      310,      290,      310,      290} /* GT,TA,T,E,T */
04814      }
04815      , {{      310,      310,      290,      310,      290} /* GT,TA,T,A,E */
04816      , {      250,      250,      230,      250,      230} /* GT,TA,T,A,A */
04817      , {      260,      260,      240,      260,      240} /* GT,TA,T,A,C */
04818      , {      250,      250,      230,      250,      230} /* GT,TA,T,A,G */
04819      , {      310,      310,      290,      310,      290} /* GT,TA,T,A,T */
04820      }
04821      , {{      310,      310,      290,      310,      290} /* GT,TA,T,C,E */
04822      , {      260,      260,      240,      260,      240} /* GT,TA,T,C,A */
04823      , {      280,      280,      260,      280,      260} /* GT,TA,T,C,C */
04824      , {      310,      310,      290,      310,      290} /* GT,TA,T,C,G */
04825      , {      270,      270,      250,      270,      250} /* GT,TA,T,C,T */
04826      }
04827      , {{{      300,      300,      280,      300,      280} /* GT,TA,T,G,E */
04828      , {      250,      250,      230,      250,      230} /* GT,TA,T,G,A */
04829      , {      260,      260,      240,      260,      240} /* GT,TA,T,G,C */
04830      , {      250,      250,      230,      250,      230} /* GT,TA,T,G,G */
04831      , {      300,      300,      280,      300,      280} /* GT,TA,T,G,T */
04832      }
04833      , {{{      310,      310,      290,      310,      290} /* GT,TA,T,T,E */
04834      , {      310,      310,      290,      310,      290} /* GT,TA,T,T,A */
04835      , {      270,      270,      250,      270,      250} /* GT,TA,T,T,C */
04836      , {      310,      310,      290,      310,      290} /* GT,TA,T,T,G */
04837      , {      250,      250,      230,      250,      230} /* GT,TA,T,T,T */
04838      }
04839      }
04840      }
04841      , {{{      310,      310,      290,      310,      310} /* GT,NN,E,E,E */
04842      , {      310,      310,      290,      310,      310} /* GT,NN,E,E,A */
04843      , {      290,      290,      270,      290,      290} /* GT,NN,E,E,C */
04844      , {      310,      310,      290,      310,      310} /* GT,NN,E,E,G */
04845      , {      310,      310,      290,      310,      310} /* GT,NN,E,E,T */
04846      }
04847      , {{{      310,      310,      290,      310,      310} /* GT,NN,E,A,E */
04848      , {      260,      260,      240,      260,      260} /* GT,NN,E,A,A */
04849      , {      290,      290,      270,      290,      290} /* GT,NN,E,A,C */
04850      , {      260,      260,      240,      260,      260} /* GT,NN,E,A,G */
04851      , {      310,      310,      290,      310,      310} /* GT,NN,E,A,T */
04852      }
04853      , {{{      310,      310,      290,      310,      310} /* GT,NN,E,C,E */

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04854      , {      290,      290,      270,      290,      290} /* GT,NN,E,C,A */
04855      , {      290,      290,      270,      290,      290} /* GT,NN,E,C,C */
04856      , {      310,      310,      290,      310,      310} /* GT,NN,E,C,G */
04857      , {      290,      290,      270,      290,      290} /* GT,NN,E,C,T */
04858      }
04859      , { {      310,      310,      290,      310,      310} /* GT,NN,E,G,E */
04860      , {      260,      260,      240,      260,      260} /* GT,NN,E,G,A */
04861      , {      280,      280,      260,      280,      280} /* GT,NN,E,G,C */
04862      , {      260,      260,      240,      260,      260} /* GT,NN,E,G,G */
04863      , {      310,      310,      290,      310,      310} /* GT,NN,E,G,T */
04864      }
04865      , { {      310,      310,      290,      310,      310} /* GT,NN,E,T,E */
04866      , {      310,      310,      290,      310,      310} /* GT,NN,E,T,A */
04867      , {      290,      290,      270,      290,      290} /* GT,NN,E,T,C */
04868      , {      310,      310,      290,      310,      310} /* GT,NN,E,T,G */
04869      , {      290,      290,      270,      290,      290} /* GT,NN,E,T,T */
04870      }
04871      }
04872      , { { {      290,      260,      290,      260,      290} /* GT,NN,A,E,E */
04873      , {      290,      260,      290,      260,      290} /* GT,NN,A,E,A */
04874      , {      270,      240,      270,      240,      270} /* GT,NN,A,E,C */
04875      , {      290,      260,      290,      260,      290} /* GT,NN,A,E,G */
04876      , {      290,      260,      290,      260,      290} /* GT,NN,A,E,T */
04877      }
04878      , { {      290,      260,      290,      260,      290} /* GT,NN,A,A,E */
04879      , {      240,      210,      240,      210,      240} /* GT,NN,A,A,A */
04880      , {      270,      240,      270,      240,      270} /* GT,NN,A,A,C */
04881      , {      240,      210,      240,      210,      240} /* GT,NN,A,A,G */
04882      , {      290,      260,      290,      260,      290} /* GT,NN,A,A,T */
04883      }
04884      , { {      290,      260,      290,      260,      290} /* GT,NN,A,C,E */
04885      , {      270,      240,      270,      240,      270} /* GT,NN,A,C,A */
04886      , {      270,      240,      270,      240,      270} /* GT,NN,A,C,C */
04887      , {      290,      260,      290,      260,      290} /* GT,NN,A,C,G */
04888      , {      270,      240,      270,      240,      270} /* GT,NN,A,C,T */
04889      }
04890      , { {      290,      260,      290,      260,      290} /* GT,NN,A,G,E */
04891      , {      240,      210,      240,      210,      240} /* GT,NN,A,G,A */
04892      , {      260,      230,      260,      230,      260} /* GT,NN,A,G,C */
04893      , {      240,      210,      240,      210,      240} /* GT,NN,A,G,G */
04894      , {      290,      260,      290,      260,      290} /* GT,NN,A,G,T */
04895      }
04896      , { {      290,      260,      290,      260,      290} /* GT,NN,A,T,E */
04897      , {      290,      260,      290,      260,      290} /* GT,NN,A,T,A */
04898      , {      270,      240,      270,      240,      270} /* GT,NN,A,T,C */
04899      , {      290,      260,      290,      260,      290} /* GT,NN,A,T,G */
04900      , {      270,      240,      270,      240,      270} /* GT,NN,A,T,T */
04901      }
04902      }
04903      , { { {      290,      290,      290,      270,      290} /* GT,NN,C,E,E */
04904      , {      290,      290,      290,      270,      290} /* GT,NN,C,E,A */
04905      , {      270,      270,      270,      250,      270} /* GT,NN,C,E,C */
04906      , {      290,      290,      290,      270,      290} /* GT,NN,C,E,G */
04907      , {      290,      290,      290,      270,      290} /* GT,NN,C,E,T */
04908      }
04909      , { {      290,      290,      290,      270,      290} /* GT,NN,C,A,E */
04910      , {      240,      240,      240,      220,      240} /* GT,NN,C,A,A */
04911      , {      270,      270,      270,      250,      270} /* GT,NN,C,A,C */
04912      , {      240,      240,      240,      220,      240} /* GT,NN,C,A,G */
04913      , {      290,      290,      290,      270,      290} /* GT,NN,C,A,T */
04914      }
04915      , { {      290,      290,      290,      270,      290} /* GT,NN,C,C,E */
04916      , {      270,      270,      270,      250,      270} /* GT,NN,C,C,A */
04917      , {      270,      270,      270,      250,      270} /* GT,NN,C,C,C */
04918      , {      290,      290,      290,      270,      290} /* GT,NN,C,C,G */
04919      , {      270,      270,      270,      250,      270} /* GT,NN,C,C,T */
04920      }
04921      , { {      290,      290,      290,      270,      290} /* GT,NN,C,G,E */
04922      , {      240,      240,      240,      220,      240} /* GT,NN,C,G,A */
04923      , {      260,      260,      260,      240,      260} /* GT,NN,C,G,C */
04924      , {      240,      240,      240,      220,      240} /* GT,NN,C,G,G */
04925      , {      290,      290,      290,      270,      290} /* GT,NN,C,G,T */
04926      }
04927      , { {      290,      290,      290,      270,      290} /* GT,NN,C,T,E */
04928      , {      290,      290,      290,      270,      290} /* GT,NN,C,T,A */
04929      , {      270,      270,      270,      250,      270} /* GT,NN,C,T,C */
04930      , {      290,      290,      290,      270,      290} /* GT,NN,C,T,G */
04931      , {      270,      270,      270,      250,      270} /* GT,NN,C,T,T */
04932      }
04933      }
04934      , { { {      310,      260,      270,      260,      310} /* GT,NN,G,E,E */
04935      , {      310,      260,      270,      260,      310} /* GT,NN,G,E,A */
04936      , {      290,      240,      250,      240,      290} /* GT,NN,G,E,C */
04937      , {      310,      260,      270,      260,      310} /* GT,NN,G,E,G */
04938      , {      310,      260,      270,      260,      310} /* GT,NN,G,E,T */
04939      }
04940      , { {      310,      260,      270,      260,      310} /* GT,NN,G,A,E */

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04941      , {      260,      210,      220,      210,      260} /* GT,NN,G,A,A */
04942      , {      290,      240,      250,      240,      290} /* GT,NN,G,A,C */
04943      , {      260,      210,      220,      210,      260} /* GT,NN,G,A,G */
04944      , {      310,      260,      270,      260,      310} /* GT,NN,G,A,T */
04945      }
04946      , { {      310,      260,      270,      260,      310} /* GT,NN,G,C,E */
04947      , {      290,      240,      250,      240,      290} /* GT,NN,G,C,A */
04948      , {      290,      240,      250,      240,      290} /* GT,NN,G,C,C */
04949      , {      310,      260,      270,      260,      310} /* GT,NN,G,C,G */
04950      , {      290,      240,      250,      240,      290} /* GT,NN,G,C,T */
04951      }
04952      , { {      310,      260,      270,      260,      310} /* GT,NN,G,G,E */
04953      , {      260,      210,      220,      210,      260} /* GT,NN,G,G,A */
04954      , {      280,      230,      240,      230,      280} /* GT,NN,G,G,C */
04955      , {      260,      210,      220,      210,      260} /* GT,NN,G,G,G */
04956      , {      310,      260,      270,      260,      310} /* GT,NN,G,G,T */
04957      }
04958      , { {      310,      260,      270,      260,      310} /* GT,NN,G,T,E */
04959      , {      310,      260,      270,      260,      310} /* GT,NN,G,T,A */
04960      , {      290,      240,      250,      240,      290} /* GT,NN,G,T,C */
04961      , {      310,      260,      270,      260,      310} /* GT,NN,G,T,G */
04962      , {      290,      240,      250,      240,      290} /* GT,NN,G,T,T */
04963      }
04964      }
04965      , { { {      310,      310,      290,      310,      290} /* GT,NN,T,E,E */
04966      , {      310,      310,      290,      310,      290} /* GT,NN,T,E,A */
04967      , {      290,      290,      270,      290,      270} /* GT,NN,T,E,C */
04968      , {      310,      310,      290,      310,      290} /* GT,NN,T,E,G */
04969      , {      310,      310,      290,      310,      290} /* GT,NN,T,E,T */
04970      }
04971      , { {      310,      310,      290,      310,      290} /* GT,NN,T,A,E */
04972      , {      260,      260,      240,      260,      240} /* GT,NN,T,A,A */
04973      , {      290,      290,      270,      290,      270} /* GT,NN,T,A,C */
04974      , {      260,      260,      240,      260,      240} /* GT,NN,T,A,G */
04975      , {      310,      310,      290,      310,      290} /* GT,NN,T,A,T */
04976      }
04977      , { {      310,      310,      290,      310,      290} /* GT,NN,T,C,E */
04978      , {      290,      290,      270,      290,      270} /* GT,NN,T,C,A */
04979      , {      290,      290,      270,      290,      270} /* GT,NN,T,C,C */
04980      , {      310,      310,      290,      310,      290} /* GT,NN,T,C,G */
04981      , {      290,      290,      270,      290,      270} /* GT,NN,T,C,T */
04982      }
04983      , { {      310,      310,      290,      310,      290} /* GT,NN,T,G,E */
04984      , {      260,      260,      240,      260,      240} /* GT,NN,T,G,A */
04985      , {      280,      280,      260,      280,      260} /* GT,NN,T,G,C */
04986      , {      260,      260,      240,      260,      240} /* GT,NN,T,G,G */
04987      , {      310,      310,      290,      310,      290} /* GT,NN,T,G,T */
04988      }
04989      , { {      310,      310,      290,      310,      290} /* GT,NN,T,T,E */
04990      , {      310,      310,      290,      310,      290} /* GT,NN,T,T,A */
04991      , {      290,      290,      270,      290,      270} /* GT,NN,T,T,C */
04992      , {      310,      310,      290,      310,      290} /* GT,NN,T,T,G */
04993      , {      290,      290,      270,      290,      270} /* GT,NN,T,T,T */
04994      }
04995      }
04996      }
04997      }
04998      , { { { {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,E,E */
04999      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,E,A */
05000      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,E,C */
05001      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,E,G */
05002      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,E,T */
05003      }
05004      , { {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,A,E */
05005      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,A,A */
05006      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,A,C */
05007      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,A,G */
05008      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,A,T */
05009      }
05010      , { {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,C,E */
05011      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,C,A */
05012      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,C,C */
05013      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,C,G */
05014      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,C,T */
05015      }
05016      , { {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,G,E */
05017      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,G,A */
05018      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,G,C */
05019      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,G,G */
05020      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,G,T */
05021      }
05022      , { {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,T,E */
05023      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,T,A */
05024      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,T,C */
05025      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,T,G */
05026      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,E,T,T */
05027      }

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```
05028     }
05029     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,A,E,E */
05030     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,E,A */
05031     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,E,C */
05032     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,E,G */
05033     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,E,T */
05034     }
05035     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,A,A,E */
05036     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,A,A */
05037     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,A,C */
05038     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,A,G */
05039     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,A,T */
05040     }
05041     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,A,C,E */
05042     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,C,A */
05043     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,C,C */
05044     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,C,G */
05045     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,C,T */
05046     }
05047     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,A,G,E */
05048     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,G,A */
05049     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,G,C */
05050     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,G,G */
05051     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,G,T */
05052     }
05053     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,A,T,E */
05054     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,T,A */
05055     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,T,C */
05056     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,T,G */
05057     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,A,T,T */
05058     }
05059     }
05060     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,C,E,E */
05061     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,E,A */
05062     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,E,C */
05063     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,E,G */
05064     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,E,T */
05065     }
05066     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,C,A,E */
05067     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,A,A */
05068     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,A,C */
05069     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,A,G */
05070     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,A,T */
05071     }
05072     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,C,C,E */
05073     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,C,A */
05074     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,C,C */
05075     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,C,G */
05076     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,C,T */
05077     }
05078     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,C,G,E */
05079     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,G,A */
05080     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,G,C */
05081     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,G,G */
05082     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,G,T */
05083     }
05084     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,C,T,E */
05085     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,T,A */
05086     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,T,C */
05087     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,T,G */
05088     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,C,T,T */
05089     }
05090     }
05091     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,G,E,E */
05092     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,E,A */
05093     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,E,C */
05094     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,E,G */
05095     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,E,T */
05096     }
05097     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,G,A,E */
05098     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,A,A */
05099     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,A,C */
05100     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,A,G */
05101     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,A,T */
05102     }
05103     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,G,C,E */
05104     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,C,A */
05105     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,C,C */
05106     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,C,G */
05107     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,C,T */
05108     }
05109     ,{{{   INF,   INF,   INF,   INF,   INF} /* TG,NP,G,G,E */
05110     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,G,A */
05111     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,G,C */
05112     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,G,G */
05113     ,{     INF,   INF,   INF,   INF,   INF} /* TG,NP,G,G,T */
05114     }
```

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05115 ,{{ INF, INF, INF, INF, INF} /* TG,NP,G,T,E */
05116 ,{ INF, INF, INF, INF, INF} /* TG,NP,G,T,A */
05117 ,{ INF, INF, INF, INF, INF} /* TG,NP,G,T,C */
05118 ,{ INF, INF, INF, INF, INF} /* TG,NP,G,T,G */
05119 ,{ INF, INF, INF, INF, INF} /* TG,NP,G,T,T */
05120 }
05121 }
05122 ,{{{ INF, INF, INF, INF, INF} /* TG,NP,T,E,E */
05123 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,E,A */
05124 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,E,C */
05125 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,E,G */
05126 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,E,T */
05127 }
05128 ,{{ INF, INF, INF, INF, INF} /* TG,NP,T,A,E */
05129 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,A,A */
05130 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,A,C */
05131 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,A,G */
05132 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,A,T */
05133 }
05134 ,{{ INF, INF, INF, INF, INF} /* TG,NP,T,C,E */
05135 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,C,A */
05136 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,C,C */
05137 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,C,G */
05138 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,C,T */
05139 }
05140 ,{{ INF, INF, INF, INF, INF} /* TG,NP,T,G,E */
05141 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,G,A */
05142 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,G,C */
05143 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,G,G */
05144 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,G,T */
05145 }
05146 ,{{ INF, INF, INF, INF, INF} /* TG,NP,T,T,E */
05147 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,T,A */
05148 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,T,C */
05149 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,T,G */
05150 ,{ INF, INF, INF, INF, INF} /* TG,NP,T,T,T */
05151 }
05152 }
05153 }
05154 ,{{{ 290, 290, 270, 290, 290} /* TG,CG,E,E,E */
05155 ,{ 270, 270, 250, 270, 270} /* TG,CG,E,E,A */
05156 ,{ 260, 260, 240, 260, 260} /* TG,CG,E,E,C */
05157 ,{ 260, 260, 240, 260, 260} /* TG,CG,E,E,G */
05158 ,{ 290, 290, 270, 290, 290} /* TG,CG,E,E,T */
05159 }
05160 ,{{ 290, 290, 270, 290, 290} /* TG,CG,E,A,E */
05161 ,{ 210, 210, 190, 210, 210} /* TG,CG,E,A,A */
05162 ,{ 240, 240, 220, 240, 240} /* TG,CG,E,A,C */
05163 ,{ 220, 220, 200, 220, 220} /* TG,CG,E,A,G */
05164 ,{ 290, 290, 270, 290, 290} /* TG,CG,E,A,T */
05165 }
05166 ,{{ 260, 260, 240, 260, 260} /* TG,CG,E,C,E */
05167 ,{ 240, 240, 220, 240, 240} /* TG,CG,E,C,A */
05168 ,{ 260, 260, 240, 260, 260} /* TG,CG,E,C,C */
05169 ,{ 200, 200, 180, 200, 200} /* TG,CG,E,C,G */
05170 ,{ 240, 240, 220, 240, 240} /* TG,CG,E,C,T */
05171 }
05172 ,{{ 270, 270, 250, 270, 270} /* TG,CG,E,G,E */
05173 ,{ 220, 220, 200, 220, 220} /* TG,CG,E,G,A */
05174 ,{ 230, 230, 210, 230, 230} /* TG,CG,E,G,C */
05175 ,{ 220, 220, 200, 220, 220} /* TG,CG,E,G,G */
05176 ,{ 270, 270, 250, 270, 270} /* TG,CG,E,G,T */
05177 }
05178 ,{{ 270, 270, 250, 270, 270} /* TG,CG,E,T,E */
05179 ,{ 270, 270, 250, 270, 270} /* TG,CG,E,T,A */
05180 ,{ 240, 240, 220, 240, 240} /* TG,CG,E,T,C */
05181 ,{ 260, 260, 240, 260, 260} /* TG,CG,E,T,G */
05182 ,{ 220, 220, 200, 220, 220} /* TG,CG,E,T,T */
05183 }
05184 }
05185 ,{{{ 290, 240, 270, 240, 290} /* TG,CG,A,E,E */
05186 ,{ 270, 220, 250, 220, 270} /* TG,CG,A,E,A */
05187 ,{ 260, 210, 240, 210, 260} /* TG,CG,A,E,C */
05188 ,{ 260, 210, 240, 210, 260} /* TG,CG,A,E,G */
05189 ,{ 290, 240, 270, 240, 290} /* TG,CG,A,E,T */
05190 }
05191 ,{{ 290, 240, 270, 240, 290} /* TG,CG,A,A,E */
05192 ,{ 210, 160, 190, 160, 210} /* TG,CG,A,A,A */
05193 ,{ 240, 190, 220, 190, 240} /* TG,CG,A,A,C */
05194 ,{ 220, 170, 200, 170, 220} /* TG,CG,A,A,G */
05195 ,{ 290, 240, 270, 240, 290} /* TG,CG,A,A,T */
05196 }
05197 ,{{ 260, 210, 240, 210, 260} /* TG,CG,A,C,E */
05198 ,{ 240, 190, 220, 190, 240} /* TG,CG,A,C,A */
05199 ,{ 260, 210, 240, 210, 260} /* TG,CG,A,C,C */
05200 ,{ 200, 150, 180, 150, 200} /* TG,CG,A,C,G */
05201 ,{ 240, 190, 220, 190, 240} /* TG,CG,A,C,T */

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05202     }
05203     ,{{      270,      220,      250,      220,      270} /* TG,CG,A,G,E */
05204     ,{      220,      170,      200,      170,      220} /* TG,CG,A,G,A */
05205     ,{      230,      180,      210,      180,      230} /* TG,CG,A,G,C */
05206     ,{      220,      170,      200,      170,      220} /* TG,CG,A,G,G */
05207     ,{      270,      220,      250,      220,      270} /* TG,CG,A,G,T */
05208     }
05209     ,{{      270,      220,      250,      220,      270} /* TG,CG,A,T,E */
05210     ,{      270,      220,      250,      220,      270} /* TG,CG,A,T,A */
05211     ,{      240,      190,      220,      190,      240} /* TG,CG,A,T,C */
05212     ,{      260,      210,      240,      210,      260} /* TG,CG,A,T,G */
05213     ,{      220,      170,      200,      170,      220} /* TG,CG,A,T,T */
05214     }
05215     }
05216     ,{{{      270,      270,      270,      260,      270} /* TG,CG,C,E,E */
05217     ,{      250,      250,      250,      240,      250} /* TG,CG,C,E,A */
05218     ,{      240,      240,      240,      230,      240} /* TG,CG,C,E,C */
05219     ,{      240,      240,      240,      230,      240} /* TG,CG,C,E,G */
05220     ,{      270,      270,      270,      260,      270} /* TG,CG,C,E,T */
05221     }
05222     ,{{      270,      270,      270,      260,      270} /* TG,CG,C,A,E */
05223     ,{      190,      190,      190,      180,      190} /* TG,CG,C,A,A */
05224     ,{      220,      220,      220,      210,      220} /* TG,CG,C,A,C */
05225     ,{      200,      200,      200,      190,      200} /* TG,CG,C,A,G */
05226     ,{      270,      270,      270,      260,      270} /* TG,CG,C,A,T */
05227     }
05228     ,{{{      240,      240,      240,      230,      240} /* TG,CG,C,C,E */
05229     ,{      220,      220,      220,      210,      220} /* TG,CG,C,C,A */
05230     ,{      240,      240,      240,      230,      240} /* TG,CG,C,C,C */
05231     ,{      180,      180,      180,      170,      180} /* TG,CG,C,C,G */
05232     ,{      220,      220,      220,      210,      220} /* TG,CG,C,C,T */
05233     }
05234     ,{{{      250,      250,      250,      240,      250} /* TG,CG,C,G,E */
05235     ,{      200,      200,      200,      190,      200} /* TG,CG,C,G,A */
05236     ,{      210,      210,      210,      200,      210} /* TG,CG,C,G,C */
05237     ,{      200,      200,      200,      190,      200} /* TG,CG,C,G,G */
05238     ,{      250,      250,      250,      240,      250} /* TG,CG,C,G,T */
05239     }
05240     ,{{{      250,      250,      250,      240,      250} /* TG,CG,C,T,E */
05241     ,{      250,      250,      250,      240,      250} /* TG,CG,C,T,A */
05242     ,{      220,      220,      220,      210,      220} /* TG,CG,C,T,C */
05243     ,{      240,      240,      240,      230,      240} /* TG,CG,C,T,G */
05244     ,{      200,      200,      200,      190,      200} /* TG,CG,C,T,T */
05245     }
05246     }
05247     ,{{{      290,      240,      240,      240,      290} /* TG,CG,G,E,E */
05248     ,{      270,      220,      220,      220,      270} /* TG,CG,G,E,A */
05249     ,{      260,      210,      210,      210,      260} /* TG,CG,G,E,C */
05250     ,{      260,      210,      210,      210,      260} /* TG,CG,G,E,G */
05251     ,{      290,      240,      240,      240,      290} /* TG,CG,G,E,T */
05252     }
05253     ,{{{      290,      240,      240,      240,      290} /* TG,CG,G,A,E */
05254     ,{      210,      160,      160,      160,      210} /* TG,CG,G,A,A */
05255     ,{      240,      190,      190,      190,      240} /* TG,CG,G,A,C */
05256     ,{      220,      170,      170,      170,      220} /* TG,CG,G,A,G */
05257     ,{      290,      240,      240,      240,      290} /* TG,CG,G,A,T */
05258     }
05259     ,{{{      260,      210,      210,      210,      260} /* TG,CG,G,C,E */
05260     ,{      240,      190,      190,      190,      240} /* TG,CG,G,C,A */
05261     ,{      260,      210,      210,      210,      260} /* TG,CG,G,C,C */
05262     ,{      200,      150,      150,      150,      200} /* TG,CG,G,C,G */
05263     ,{      240,      190,      190,      190,      240} /* TG,CG,G,C,T */
05264     }
05265     ,{{{      270,      220,      220,      220,      270} /* TG,CG,G,G,E */
05266     ,{      220,      170,      170,      170,      220} /* TG,CG,G,G,A */
05267     ,{      230,      180,      180,      180,      230} /* TG,CG,G,G,C */
05268     ,{      220,      170,      170,      170,      220} /* TG,CG,G,G,G */
05269     ,{      270,      220,      220,      220,      270} /* TG,CG,G,G,T */
05270     }
05271     ,{{{      270,      220,      220,      220,      270} /* TG,CG,G,T,E */
05272     ,{      270,      220,      220,      220,      270} /* TG,CG,G,T,A */
05273     ,{      240,      190,      190,      190,      240} /* TG,CG,G,T,C */
05274     ,{      260,      210,      210,      210,      260} /* TG,CG,G,T,G */
05275     ,{      220,      170,      170,      170,      220} /* TG,CG,G,T,T */
05276     }
05277     }
05278     ,{{{      290,      290,      270,      290,      270} /* TG,CG,T,E,E */
05279     ,{      270,      270,      250,      270,      250} /* TG,CG,T,E,A */
05280     ,{      260,      260,      240,      260,      240} /* TG,CG,T,E,C */
05281     ,{      260,      260,      240,      260,      240} /* TG,CG,T,E,G */
05282     ,{      290,      290,      270,      290,      270} /* TG,CG,T,E,T */
05283     }
05284     ,{{{      290,      290,      270,      290,      270} /* TG,CG,T,A,E */
05285     ,{      210,      210,      190,      210,      190} /* TG,CG,T,A,A */
05286     ,{      240,      240,      220,      240,      220} /* TG,CG,T,A,C */
05287     ,{      220,      220,      200,      220,      200} /* TG,CG,T,A,G */
05288     ,{      290,      290,      270,      290,      270} /* TG,CG,T,A,T */

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05289     }
05290     ,{{ 260, 260, 240, 260, 240} /* TG,CG,T,C,E */
05291     ,{ 240, 240, 220, 240, 220} /* TG,CG,T,C,A */
05292     ,{ 260, 260, 240, 260, 240} /* TG,CG,T,C,C */
05293     ,{ 200, 200, 180, 200, 180} /* TG,CG,T,C,G */
05294     ,{ 240, 240, 220, 240, 220} /* TG,CG,T,C,T */
05295     }
05296     ,{{ 270, 270, 250, 270, 250} /* TG,CG,T,G,E */
05297     ,{ 220, 220, 200, 220, 200} /* TG,CG,T,G,A */
05298     ,{ 230, 230, 210, 230, 210} /* TG,CG,T,G,C */
05299     ,{ 220, 220, 200, 220, 200} /* TG,CG,T,G,G */
05300     ,{ 270, 270, 250, 270, 250} /* TG,CG,T,G,T */
05301     }
05302     ,{{ 270, 270, 250, 270, 250} /* TG,CG,T,T,E */
05303     ,{ 270, 270, 250, 270, 250} /* TG,CG,T,T,A */
05304     ,{ 240, 240, 220, 240, 220} /* TG,CG,T,T,C */
05305     ,{ 260, 260, 240, 260, 240} /* TG,CG,T,T,G */
05306     ,{ 220, 220, 200, 220, 200} /* TG,CG,T,T,T */
05307     }
05308     }
05309     }
05310     ,{{{ 280, 280, 260, 280, 280} /* TG,GC,E,E,E */
05311     ,{ 260, 260, 240, 260, 260} /* TG,GC,E,E,A */
05312     ,{ 250, 250, 230, 250, 250} /* TG,GC,E,E,C */
05313     ,{ 280, 280, 260, 280, 280} /* TG,GC,E,E,G */
05314     ,{ 270, 270, 250, 270, 270} /* TG,GC,E,E,T */
05315     }
05316     ,{{ 270, 270, 250, 270, 270} /* TG,GC,E,A,E */
05317     ,{ 200, 200, 180, 200, 200} /* TG,GC,E,A,A */
05318     ,{ 230, 230, 210, 230, 230} /* TG,GC,E,A,C */
05319     ,{ 210, 210, 190, 210, 210} /* TG,GC,E,A,G */
05320     ,{ 270, 270, 250, 270, 270} /* TG,GC,E,A,T */
05321     }
05322     ,{{ 250, 250, 230, 250, 250} /* TG,GC,E,C,E */
05323     ,{ 230, 230, 210, 230, 230} /* TG,GC,E,C,A */
05324     ,{ 250, 250, 230, 250, 250} /* TG,GC,E,C,C */
05325     ,{ 230, 230, 210, 230, 230} /* TG,GC,E,C,G */
05326     ,{ 240, 240, 220, 240, 240} /* TG,GC,E,C,T */
05327     }
05328     ,{{ 270, 270, 250, 270, 270} /* TG,GC,E,G,E */
05329     ,{ 210, 210, 190, 210, 210} /* TG,GC,E,G,A */
05330     ,{ 180, 180, 160, 180, 180} /* TG,GC,E,G,C */
05331     ,{ 210, 210, 190, 210, 210} /* TG,GC,E,G,G */
05332     ,{ 270, 270, 250, 270, 270} /* TG,GC,E,G,T */
05333     }
05334     ,{{ 280, 280, 260, 280, 280} /* TG,GC,E,T,E */
05335     ,{ 260, 260, 240, 260, 260} /* TG,GC,E,T,A */
05336     ,{ 240, 240, 220, 240, 240} /* TG,GC,E,T,C */
05337     ,{ 280, 280, 260, 280, 280} /* TG,GC,E,T,G */
05338     ,{ 220, 220, 200, 220, 220} /* TG,GC,E,T,T */
05339     }
05340     }
05341     ,{{{ 280, 230, 260, 230, 280} /* TG,GC,A,E,E */
05342     ,{ 260, 210, 240, 210, 260} /* TG,GC,A,E,A */
05343     ,{ 250, 200, 230, 200, 250} /* TG,GC,A,E,C */
05344     ,{ 280, 230, 260, 230, 280} /* TG,GC,A,E,G */
05345     ,{ 270, 220, 250, 220, 270} /* TG,GC,A,E,T */
05346     }
05347     ,{{ 270, 220, 250, 220, 270} /* TG,GC,A,A,E */
05348     ,{ 200, 150, 180, 150, 200} /* TG,GC,A,A,A */
05349     ,{ 230, 180, 210, 180, 230} /* TG,GC,A,A,C */
05350     ,{ 210, 160, 190, 160, 210} /* TG,GC,A,A,G */
05351     ,{ 270, 220, 250, 220, 270} /* TG,GC,A,A,T */
05352     }
05353     ,{{ 250, 200, 230, 200, 250} /* TG,GC,A,C,E */
05354     ,{ 230, 180, 210, 180, 230} /* TG,GC,A,C,A */
05355     ,{ 250, 200, 230, 200, 250} /* TG,GC,A,C,C */
05356     ,{ 230, 180, 210, 180, 230} /* TG,GC,A,C,G */
05357     ,{ 240, 190, 220, 190, 240} /* TG,GC,A,C,T */
05358     }
05359     ,{{ 270, 220, 250, 220, 270} /* TG,GC,A,G,E */
05360     ,{ 210, 160, 190, 160, 210} /* TG,GC,A,G,A */
05361     ,{ 180, 130, 160, 130, 180} /* TG,GC,A,G,C */
05362     ,{ 210, 160, 190, 160, 210} /* TG,GC,A,G,G */
05363     ,{ 270, 220, 250, 220, 270} /* TG,GC,A,G,T */
05364     }
05365     ,{{ 280, 230, 260, 230, 280} /* TG,GC,A,T,E */
05366     ,{ 260, 210, 240, 210, 260} /* TG,GC,A,T,A */
05367     ,{ 240, 190, 220, 190, 240} /* TG,GC,A,T,C */
05368     ,{ 280, 230, 260, 230, 280} /* TG,GC,A,T,G */
05369     ,{ 220, 170, 200, 170, 220} /* TG,GC,A,T,T */
05370     }
05371     }
05372     ,{{{ 260, 260, 260, 250, 260} /* TG,GC,C,E,E */
05373     ,{ 240, 240, 240, 230, 240} /* TG,GC,C,E,A */
05374     ,{ 230, 230, 230, 220, 230} /* TG,GC,C,E,C */
05375     ,{ 260, 260, 260, 250, 260} /* TG,GC,C,E,G */

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05376      , {      250,      250,      250,      240,      250} /* TG,GC,C,E,T */
05377      }
05378      , { {      250,      250,      250,      240,      250} /* TG,GC,C,A,E */
05379      , {      180,      180,      180,      170,      180} /* TG,GC,C,A,A */
05380      , {      210,      210,      210,      200,      210} /* TG,GC,C,A,C */
05381      , {      190,      190,      190,      180,      190} /* TG,GC,C,A,G */
05382      , {      250,      250,      250,      240,      250} /* TG,GC,C,A,T */
05383      }
05384      , { {      230,      230,      230,      220,      230} /* TG,GC,C,C,E */
05385      , {      210,      210,      210,      200,      210} /* TG,GC,C,C,A */
05386      , {      230,      230,      230,      220,      230} /* TG,GC,C,C,C */
05387      , {      210,      210,      210,      200,      210} /* TG,GC,C,C,G */
05388      , {      220,      220,      220,      210,      220} /* TG,GC,C,C,T */
05389      }
05390      , { {      250,      250,      250,      240,      250} /* TG,GC,C,G,E */
05391      , {      190,      190,      190,      180,      190} /* TG,GC,C,G,A */
05392      , {      160,      160,      160,      150,      160} /* TG,GC,C,G,C */
05393      , {      190,      190,      190,      180,      190} /* TG,GC,C,G,G */
05394      , {      250,      250,      250,      240,      250} /* TG,GC,C,G,T */
05395      }
05396      , { {      260,      260,      260,      250,      260} /* TG,GC,C,T,E */
05397      , {      240,      240,      240,      230,      240} /* TG,GC,C,T,A */
05398      , {      220,      220,      220,      210,      220} /* TG,GC,C,T,C */
05399      , {      260,      260,      260,      250,      260} /* TG,GC,C,T,G */
05400      , {      200,      200,      200,      190,      200} /* TG,GC,C,T,T */
05401      }
05402      }
05403      , { { {      280,      230,      230,      230,      280} /* TG,GC,G,E,E */
05404      , {      260,      210,      210,      210,      260} /* TG,GC,G,E,A */
05405      , {      250,      200,      200,      200,      250} /* TG,GC,G,E,C */
05406      , {      280,      230,      230,      230,      280} /* TG,GC,G,E,G */
05407      , {      270,      220,      220,      220,      270} /* TG,GC,G,E,T */
05408      }
05409      , { {      270,      220,      220,      220,      270} /* TG,GC,G,A,E */
05410      , {      200,      150,      150,      150,      200} /* TG,GC,G,A,A */
05411      , {      230,      180,      180,      180,      230} /* TG,GC,G,A,C */
05412      , {      210,      160,      160,      160,      210} /* TG,GC,G,A,G */
05413      , {      270,      220,      220,      220,      270} /* TG,GC,G,A,T */
05414      }
05415      , { {      250,      200,      200,      200,      250} /* TG,GC,G,C,E */
05416      , {      230,      180,      180,      180,      230} /* TG,GC,G,C,A */
05417      , {      250,      200,      200,      200,      250} /* TG,GC,G,C,C */
05418      , {      230,      180,      180,      180,      230} /* TG,GC,G,C,G */
05419      , {      240,      190,      190,      190,      240} /* TG,GC,G,C,T */
05420      }
05421      , { {      270,      220,      220,      220,      270} /* TG,GC,G,G,E */
05422      , {      210,      160,      160,      160,      210} /* TG,GC,G,G,A */
05423      , {      180,      130,      130,      130,      180} /* TG,GC,G,G,C */
05424      , {      210,      160,      160,      160,      210} /* TG,GC,G,G,G */
05425      , {      270,      220,      220,      220,      270} /* TG,GC,G,G,T */
05426      }
05427      , { {      280,      230,      230,      230,      280} /* TG,GC,G,T,E */
05428      , {      260,      210,      210,      210,      260} /* TG,GC,G,T,A */
05429      , {      240,      190,      190,      190,      240} /* TG,GC,G,T,C */
05430      , {      280,      230,      230,      230,      280} /* TG,GC,G,T,G */
05431      , {      220,      170,      170,      170,      220} /* TG,GC,G,T,T */
05432      }
05433      }
05434      , { { {      280,      280,      260,      280,      260} /* TG,GC,T,E,E */
05435      , {      260,      260,      240,      260,      240} /* TG,GC,T,E,A */
05436      , {      250,      250,      230,      250,      230} /* TG,GC,T,E,C */
05437      , {      280,      280,      260,      280,      260} /* TG,GC,T,E,G */
05438      , {      270,      270,      250,      270,      250} /* TG,GC,T,E,T */
05439      }
05440      , { {      270,      270,      250,      270,      250} /* TG,GC,T,A,E */
05441      , {      200,      200,      180,      200,      180} /* TG,GC,T,A,A */
05442      , {      230,      230,      210,      230,      210} /* TG,GC,T,A,C */
05443      , {      210,      210,      190,      210,      190} /* TG,GC,T,A,G */
05444      , {      270,      270,      250,      270,      250} /* TG,GC,T,A,T */
05445      }
05446      , { {      250,      250,      230,      250,      230} /* TG,GC,T,C,E */
05447      , {      230,      230,      210,      230,      210} /* TG,GC,T,C,A */
05448      , {      250,      250,      230,      250,      230} /* TG,GC,T,C,C */
05449      , {      230,      230,      210,      230,      210} /* TG,GC,T,C,G */
05450      , {      240,      240,      220,      240,      220} /* TG,GC,T,C,T */
05451      }
05452      , { {      270,      270,      250,      270,      250} /* TG,GC,T,G,E */
05453      , {      210,      210,      190,      210,      190} /* TG,GC,T,G,A */
05454      , {      180,      180,      160,      180,      160} /* TG,GC,T,G,C */
05455      , {      210,      210,      190,      210,      190} /* TG,GC,T,G,G */
05456      , {      270,      270,      250,      270,      250} /* TG,GC,T,G,T */
05457      }
05458      , { {      280,      280,      260,      280,      260} /* TG,GC,T,T,E */
05459      , {      260,      260,      240,      260,      240} /* TG,GC,T,T,A */
05460      , {      240,      240,      220,      240,      220} /* TG,GC,T,T,C */
05461      , {      280,      280,      260,      280,      260} /* TG,GC,T,T,G */
05462      , {      220,      220,      200,      220,      200} /* TG,GC,T,T,T */

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05463     }
05464     }
05465     }
05466 ,{{{    310,    310,    290,    310,    310} /* TG,GT,E,E,E */
05467     ,{    290,    290,    270,    290,    290} /* TG,GT,E,E,A */
05468     ,{    290,    290,    270,    290,    290} /* TG,GT,E,E,C */
05469     ,{    310,    310,    290,    310,    310} /* TG,GT,E,E,G */
05470     ,{    310,    310,    290,    310,    310} /* TG,GT,E,E,T */
05471     }
05472 ,{{{    310,    310,    290,    310,    310} /* TG,GT,E,A,E */
05473     ,{    260,    260,    240,    260,    260} /* TG,GT,E,A,A */
05474     ,{    290,    290,    270,    290,    290} /* TG,GT,E,A,C */
05475     ,{    260,    260,    240,    260,    260} /* TG,GT,E,A,G */
05476     ,{    310,    310,    290,    310,    310} /* TG,GT,E,A,T */
05477     }
05478 ,{{{    290,    290,    270,    290,    290} /* TG,GT,E,C,E */
05479     ,{    290,    290,    270,    290,    290} /* TG,GT,E,C,A */
05480     ,{    290,    290,    270,    290,    290} /* TG,GT,E,C,C */
05481     ,{    270,    270,    250,    270,    270} /* TG,GT,E,C,G */
05482     ,{    290,    290,    270,    290,    290} /* TG,GT,E,C,T */
05483     }
05484 ,{{{    310,    310,    290,    310,    310} /* TG,GT,E,G,E */
05485     ,{    260,    260,    240,    260,    260} /* TG,GT,E,G,A */
05486     ,{    270,    270,    250,    270,    270} /* TG,GT,E,G,C */
05487     ,{    260,    260,    240,    260,    260} /* TG,GT,E,G,G */
05488     ,{    310,    310,    290,    310,    310} /* TG,GT,E,G,T */
05489     }
05490 ,{{{    310,    310,    290,    310,    310} /* TG,GT,E,T,E */
05491     ,{    290,    290,    270,    290,    290} /* TG,GT,E,T,A */
05492     ,{    290,    290,    270,    290,    290} /* TG,GT,E,T,C */
05493     ,{    310,    310,    290,    310,    310} /* TG,GT,E,T,G */
05494     ,{    290,    290,    270,    290,    290} /* TG,GT,E,T,T */
05495     }
05496     }
05497 ,{{{    310,    260,    290,    260,    310} /* TG,GT,A,E,E */
05498     ,{    290,    240,    270,    240,    290} /* TG,GT,A,E,A */
05499     ,{    290,    240,    270,    240,    290} /* TG,GT,A,E,C */
05500     ,{    310,    260,    290,    260,    310} /* TG,GT,A,E,G */
05501     ,{    310,    260,    290,    260,    310} /* TG,GT,A,E,T */
05502     }
05503 ,{{{    310,    260,    290,    260,    310} /* TG,GT,A,A,E */
05504     ,{    260,    210,    240,    210,    260} /* TG,GT,A,A,A */
05505     ,{    290,    240,    270,    240,    290} /* TG,GT,A,A,C */
05506     ,{    260,    210,    240,    210,    260} /* TG,GT,A,A,G */
05507     ,{    310,    260,    290,    260,    310} /* TG,GT,A,A,T */
05508     }
05509 ,{{{    290,    240,    270,    240,    290} /* TG,GT,A,C,E */
05510     ,{    290,    240,    270,    240,    290} /* TG,GT,A,C,A */
05511     ,{    290,    240,    270,    240,    290} /* TG,GT,A,C,C */
05512     ,{    270,    220,    250,    220,    270} /* TG,GT,A,C,G */
05513     ,{    290,    240,    270,    240,    290} /* TG,GT,A,C,T */
05514     }
05515 ,{{{    310,    260,    290,    260,    310} /* TG,GT,A,G,E */
05516     ,{    260,    210,    240,    210,    260} /* TG,GT,A,G,A */
05517     ,{    270,    220,    250,    220,    270} /* TG,GT,A,G,C */
05518     ,{    260,    210,    240,    210,    260} /* TG,GT,A,G,G */
05519     ,{    310,    260,    290,    260,    310} /* TG,GT,A,G,T */
05520     }
05521 ,{{{    310,    260,    290,    260,    310} /* TG,GT,A,T,E */
05522     ,{    290,    240,    270,    240,    290} /* TG,GT,A,T,A */
05523     ,{    290,    240,    270,    240,    290} /* TG,GT,A,T,C */
05524     ,{    310,    260,    290,    260,    310} /* TG,GT,A,T,G */
05525     ,{    290,    240,    270,    240,    290} /* TG,GT,A,T,T */
05526     }
05527     }
05528 ,{{{    290,    290,    290,    280,    290} /* TG,GT,C,E,E */
05529     ,{    270,    270,    270,    260,    270} /* TG,GT,C,E,A */
05530     ,{    270,    270,    270,    260,    270} /* TG,GT,C,E,C */
05531     ,{    290,    290,    290,    280,    290} /* TG,GT,C,E,G */
05532     ,{    290,    290,    290,    280,    290} /* TG,GT,C,E,T */
05533     }
05534 ,{{{    290,    290,    290,    280,    290} /* TG,GT,C,A,E */
05535     ,{    240,    240,    240,    230,    240} /* TG,GT,C,A,A */
05536     ,{    270,    270,    270,    260,    270} /* TG,GT,C,A,C */
05537     ,{    240,    240,    240,    230,    240} /* TG,GT,C,A,G */
05538     ,{    290,    290,    290,    280,    290} /* TG,GT,C,A,T */
05539     }
05540 ,{{{    270,    270,    270,    260,    270} /* TG,GT,C,C,E */
05541     ,{    270,    270,    270,    260,    270} /* TG,GT,C,C,A */
05542     ,{    270,    270,    270,    260,    270} /* TG,GT,C,C,C */
05543     ,{    250,    250,    250,    240,    250} /* TG,GT,C,C,G */
05544     ,{    270,    270,    270,    260,    270} /* TG,GT,C,C,T */
05545     }
05546 ,{{{    290,    290,    290,    280,    290} /* TG,GT,C,G,E */
05547     ,{    240,    240,    240,    230,    240} /* TG,GT,C,G,A */
05548     ,{    250,    250,    250,    240,    250} /* TG,GT,C,G,C */
05549     ,{    240,    240,    240,    230,    240} /* TG,GT,C,G,G */

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05550      , {      290,      290,      290,      280,      290} /* TG,GT,C,G,T */
05551      }
05552      , {{      290,      290,      290,      280,      290} /* TG,GT,C,T,E */
05553      , {      270,      270,      270,      260,      270} /* TG,GT,C,T,A */
05554      , {      270,      270,      270,      260,      270} /* TG,GT,C,T,C */
05555      , {      290,      290,      290,      280,      290} /* TG,GT,C,T,G */
05556      , {      270,      270,      270,      260,      270} /* TG,GT,C,T,T */
05557      }
05558      }
05559      , {{{      310,      260,      260,      260,      310} /* TG,GT,G,E,E */
05560      , {      290,      240,      240,      240,      290} /* TG,GT,G,E,A */
05561      , {      290,      240,      240,      240,      290} /* TG,GT,G,E,C */
05562      , {      310,      260,      260,      260,      310} /* TG,GT,G,E,G */
05563      , {      310,      260,      260,      260,      310} /* TG,GT,G,E,T */
05564      }
05565      , {{      310,      260,      260,      260,      310} /* TG,GT,G,A,E */
05566      , {      260,      210,      210,      210,      260} /* TG,GT,G,A,A */
05567      , {      290,      240,      240,      240,      290} /* TG,GT,G,A,C */
05568      , {      260,      210,      210,      210,      260} /* TG,GT,G,A,G */
05569      , {      310,      260,      260,      260,      310} /* TG,GT,G,A,T */
05570      }
05571      , {{      290,      240,      240,      240,      290} /* TG,GT,G,C,E */
05572      , {      290,      240,      240,      240,      290} /* TG,GT,G,C,A */
05573      , {      290,      240,      240,      240,      290} /* TG,GT,G,C,C */
05574      , {      270,      220,      220,      220,      270} /* TG,GT,G,C,G */
05575      , {      290,      240,      240,      240,      290} /* TG,GT,G,C,T */
05576      }
05577      , {{      310,      260,      260,      260,      310} /* TG,GT,G,G,E */
05578      , {      260,      210,      210,      210,      260} /* TG,GT,G,G,A */
05579      , {      270,      220,      220,      220,      270} /* TG,GT,G,G,C */
05580      , {      260,      210,      210,      210,      260} /* TG,GT,G,G,G */
05581      , {      310,      260,      260,      260,      310} /* TG,GT,G,G,T */
05582      }
05583      , {{      310,      260,      260,      260,      310} /* TG,GT,G,T,E */
05584      , {      290,      240,      240,      240,      290} /* TG,GT,G,T,A */
05585      , {      290,      240,      240,      240,      290} /* TG,GT,G,T,C */
05586      , {      310,      260,      260,      260,      310} /* TG,GT,G,T,G */
05587      , {      290,      240,      240,      240,      290} /* TG,GT,G,T,T */
05588      }
05589      }
05590      , {{{      310,      310,      290,      310,      290} /* TG,GT,T,E,E */
05591      , {      290,      290,      270,      290,      270} /* TG,GT,T,E,A */
05592      , {      290,      290,      270,      290,      270} /* TG,GT,T,E,C */
05593      , {      310,      310,      290,      310,      290} /* TG,GT,T,E,G */
05594      , {      310,      310,      290,      310,      290} /* TG,GT,T,E,T */
05595      }
05596      , {{{      310,      310,      290,      310,      290} /* TG,GT,T,A,E */
05597      , {      260,      260,      240,      260,      240} /* TG,GT,T,A,A */
05598      , {      290,      290,      270,      290,      270} /* TG,GT,T,A,C */
05599      , {      260,      260,      240,      260,      240} /* TG,GT,T,A,G */
05600      , {      310,      310,      290,      310,      290} /* TG,GT,T,A,T */
05601      }
05602      , {{{      290,      290,      270,      290,      270} /* TG,GT,T,C,E */
05603      , {      290,      290,      270,      290,      270} /* TG,GT,T,C,A */
05604      , {      290,      290,      270,      290,      270} /* TG,GT,T,C,C */
05605      , {      270,      270,      250,      270,      250} /* TG,GT,T,C,G */
05606      , {      290,      290,      270,      290,      270} /* TG,GT,T,C,T */
05607      }
05608      , {{{      310,      310,      290,      310,      290} /* TG,GT,T,G,E */
05609      , {      260,      260,      240,      260,      240} /* TG,GT,T,G,A */
05610      , {      270,      270,      250,      270,      250} /* TG,GT,T,G,C */
05611      , {      260,      260,      240,      260,      240} /* TG,GT,T,G,G */
05612      , {      310,      310,      290,      310,      290} /* TG,GT,T,G,T */
05613      }
05614      , {{{      310,      310,      290,      310,      290} /* TG,GT,T,T,E */
05615      , {      290,      290,      270,      290,      270} /* TG,GT,T,T,A */
05616      , {      290,      290,      270,      290,      270} /* TG,GT,T,T,C */
05617      , {      310,      310,      290,      310,      290} /* TG,GT,T,T,G */
05618      , {      290,      290,      270,      290,      270} /* TG,GT,T,T,T */
05619      }
05620      }
05621      }
05622      , {{{      310,      310,      290,      310,      310} /* TG,TG,E,E,E */
05623      , {      310,      310,      290,      310,      310} /* TG,TG,E,E,A */
05624      , {      290,      290,      270,      290,      290} /* TG,TG,E,E,C */
05625      , {      310,      310,      290,      310,      310} /* TG,TG,E,E,G */
05626      , {      310,      310,      290,      310,      310} /* TG,TG,E,E,T */
05627      }
05628      , {{{      310,      310,      290,      310,      310} /* TG,TG,E,A,E */
05629      , {      260,      260,      240,      260,      260} /* TG,TG,E,A,A */
05630      , {      290,      290,      270,      290,      290} /* TG,TG,E,A,C */
05631      , {      260,      260,      240,      260,      260} /* TG,TG,E,A,G */
05632      , {      310,      310,      290,      310,      310} /* TG,TG,E,A,T */
05633      }
05634      , {{{      290,      290,      270,      290,      290} /* TG,TG,E,C,E */
05635      , {      290,      290,      270,      290,      290} /* TG,TG,E,C,A */
05636      , {      290,      290,      270,      290,      290} /* TG,TG,E,C,C */
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05637      , {      260,      260,      240,      260,      260} /* TG,TG,E,C,G */
05638      , {      290,      290,      270,      290,      290} /* TG,TG,E,C,T */
05639      }
05640      , {{      310,      310,      290,      310,      310} /* TG,TG,E,G,E */
05641      , {      260,      260,      240,      260,      260} /* TG,TG,E,G,A */
05642      , {      280,      280,      260,      280,      280} /* TG,TG,E,G,C */
05643      , {      260,      260,      240,      260,      260} /* TG,TG,E,G,G */
05644      , {      310,      310,      290,      310,      310} /* TG,TG,E,G,T */
05645      }
05646      , {{      310,      310,      290,      310,      310} /* TG,TG,E,T,E */
05647      , {      310,      310,      290,      310,      310} /* TG,TG,E,T,A */
05648      , {      290,      290,      270,      290,      290} /* TG,TG,E,T,C */
05649      , {      310,      310,      290,      310,      310} /* TG,TG,E,T,G */
05650      , {      290,      290,      270,      290,      290} /* TG,TG,E,T,T */
05651      }
05652      }
05653      , {{{      310,      260,      290,      260,      310} /* TG,TG,A,E,E */
05654      , {      310,      260,      290,      260,      310} /* TG,TG,A,E,A */
05655      , {      290,      240,      270,      240,      290} /* TG,TG,A,E,C */
05656      , {      310,      260,      290,      260,      310} /* TG,TG,A,E,G */
05657      , {      310,      260,      290,      260,      310} /* TG,TG,A,E,T */
05658      }
05659      , {{      310,      260,      290,      260,      310} /* TG,TG,A,A,E */
05660      , {      260,      210,      240,      210,      260} /* TG,TG,A,A,A */
05661      , {      290,      240,      270,      240,      290} /* TG,TG,A,A,C */
05662      , {      260,      210,      240,      210,      260} /* TG,TG,A,A,G */
05663      , {      310,      260,      290,      260,      310} /* TG,TG,A,A,T */
05664      }
05665      , {{      290,      240,      270,      240,      290} /* TG,TG,A,C,E */
05666      , {      290,      240,      270,      240,      290} /* TG,TG,A,C,A */
05667      , {      290,      240,      270,      240,      290} /* TG,TG,A,C,C */
05668      , {      260,      210,      240,      210,      260} /* TG,TG,A,C,G */
05669      , {      290,      240,      270,      240,      290} /* TG,TG,A,C,T */
05670      }
05671      , {{      310,      260,      290,      260,      310} /* TG,TG,A,G,E */
05672      , {      260,      210,      240,      210,      260} /* TG,TG,A,G,A */
05673      , {      280,      230,      260,      230,      280} /* TG,TG,A,G,C */
05674      , {      260,      210,      240,      210,      260} /* TG,TG,A,G,G */
05675      , {      310,      260,      290,      260,      310} /* TG,TG,A,G,T */
05676      }
05677      , {{      310,      260,      290,      260,      310} /* TG,TG,A,T,E */
05678      , {      310,      260,      290,      260,      310} /* TG,TG,A,T,A */
05679      , {      290,      240,      270,      240,      290} /* TG,TG,A,T,C */
05680      , {      310,      260,      290,      260,      310} /* TG,TG,A,T,G */
05681      , {      290,      240,      270,      240,      290} /* TG,TG,A,T,T */
05682      }
05683      }
05684      , {{{      290,      290,      290,      280,      290} /* TG,TG,C,E,E */
05685      , {      290,      290,      290,      280,      290} /* TG,TG,C,E,A */
05686      , {      270,      270,      270,      260,      270} /* TG,TG,C,E,C */
05687      , {      290,      290,      290,      280,      290} /* TG,TG,C,E,G */
05688      , {      290,      290,      290,      280,      290} /* TG,TG,C,E,T */
05689      }
05690      , {{      290,      290,      290,      280,      290} /* TG,TG,C,A,E */
05691      , {      240,      240,      240,      230,      240} /* TG,TG,C,A,A */
05692      , {      270,      270,      270,      260,      270} /* TG,TG,C,A,C */
05693      , {      240,      240,      240,      230,      240} /* TG,TG,C,A,G */
05694      , {      290,      290,      290,      280,      290} /* TG,TG,C,A,T */
05695      }
05696      , {{      270,      270,      270,      260,      270} /* TG,TG,C,C,E */
05697      , {      270,      270,      270,      260,      270} /* TG,TG,C,C,A */
05698      , {      270,      270,      270,      260,      270} /* TG,TG,C,C,C */
05699      , {      240,      240,      240,      230,      240} /* TG,TG,C,C,G */
05700      , {      270,      270,      270,      260,      270} /* TG,TG,C,C,T */
05701      }
05702      , {{      290,      290,      290,      280,      290} /* TG,TG,C,G,E */
05703      , {      240,      240,      240,      230,      240} /* TG,TG,C,G,A */
05704      , {      260,      260,      260,      250,      260} /* TG,TG,C,G,C */
05705      , {      240,      240,      240,      230,      240} /* TG,TG,C,G,G */
05706      , {      290,      290,      290,      280,      290} /* TG,TG,C,G,T */
05707      }
05708      , {{      290,      290,      290,      280,      290} /* TG,TG,C,T,E */
05709      , {      290,      290,      290,      280,      290} /* TG,TG,C,T,A */
05710      , {      270,      270,      270,      260,      270} /* TG,TG,C,T,C */
05711      , {      290,      290,      290,      280,      290} /* TG,TG,C,T,G */
05712      , {      270,      270,      270,      260,      270} /* TG,TG,C,T,T */
05713      }
05714      }
05715      , {{{      310,      260,      260,      260,      310} /* TG,TG,G,E,E */
05716      , {      310,      260,      260,      260,      310} /* TG,TG,G,E,A */
05717      , {      290,      240,      240,      240,      290} /* TG,TG,G,E,C */
05718      , {      310,      260,      260,      260,      310} /* TG,TG,G,E,G */
05719      , {      310,      260,      260,      260,      310} /* TG,TG,G,E,T */
05720      }
05721      , {{      310,      260,      260,      260,      310} /* TG,TG,G,A,E */
05722      , {      260,      210,      210,      210,      260} /* TG,TG,G,A,A */
05723      , {      290,      240,      240,      240,      290} /* TG,TG,G,A,C */

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05724      , {      260,      210,      210,      210,      260} /* TG,TG,G,A,G */
05725      , {      310,      260,      260,      260,      310} /* TG,TG,G,A,T */
05726      }
05727      , {{      290,      240,      240,      240,      290} /* TG,TG,G,C,E */
05728      , {      290,      240,      240,      240,      290} /* TG,TG,G,C,A */
05729      , {      290,      240,      240,      240,      290} /* TG,TG,G,C,C */
05730      , {      260,      210,      210,      210,      260} /* TG,TG,G,C,G */
05731      , {      290,      240,      240,      240,      290} /* TG,TG,G,C,T */
05732      }
05733      , {{      310,      260,      260,      260,      310} /* TG,TG,G,G,E */
05734      , {      260,      210,      210,      210,      260} /* TG,TG,G,G,A */
05735      , {      280,      230,      230,      230,      280} /* TG,TG,G,G,C */
05736      , {      260,      210,      210,      210,      260} /* TG,TG,G,G,G */
05737      , {      310,      260,      260,      260,      310} /* TG,TG,G,G,T */
05738      }
05739      , {{      310,      260,      260,      260,      310} /* TG,TG,G,T,E */
05740      , {      310,      260,      260,      260,      310} /* TG,TG,G,T,A */
05741      , {      290,      240,      240,      240,      290} /* TG,TG,G,T,C */
05742      , {      310,      260,      260,      260,      310} /* TG,TG,G,T,G */
05743      , {      290,      240,      240,      240,      290} /* TG,TG,G,T,T */
05744      }
05745      }
05746      , {{{      310,      310,      290,      310,      290} /* TG,TG,T,E,E */
05747      , {      310,      310,      290,      310,      290} /* TG,TG,T,E,A */
05748      , {      290,      290,      270,      290,      270} /* TG,TG,T,E,C */
05749      , {      310,      310,      290,      310,      290} /* TG,TG,T,E,G */
05750      , {      310,      310,      290,      310,      290} /* TG,TG,T,E,T */
05751      }
05752      , {{      310,      310,      290,      310,      290} /* TG,TG,T,A,E */
05753      , {      260,      260,      240,      260,      240} /* TG,TG,T,A,A */
05754      , {      290,      290,      270,      290,      270} /* TG,TG,T,A,C */
05755      , {      260,      260,      240,      260,      240} /* TG,TG,T,A,G */
05756      , {      310,      310,      290,      310,      290} /* TG,TG,T,A,T */
05757      }
05758      , {{      290,      290,      270,      290,      270} /* TG,TG,T,C,E */
05759      , {      290,      290,      270,      290,      270} /* TG,TG,T,C,A */
05760      , {      290,      290,      270,      290,      270} /* TG,TG,T,C,C */
05761      , {      260,      260,      240,      260,      240} /* TG,TG,T,C,G */
05762      , {      290,      290,      270,      290,      270} /* TG,TG,T,C,T */
05763      }
05764      , {{      310,      310,      290,      310,      290} /* TG,TG,T,G,E */
05765      , {      260,      260,      240,      260,      240} /* TG,TG,T,G,A */
05766      , {      280,      280,      260,      280,      260} /* TG,TG,T,G,C */
05767      , {      260,      260,      240,      260,      240} /* TG,TG,T,G,G */
05768      , {      310,      310,      290,      310,      290} /* TG,TG,T,G,T */
05769      }
05770      , {{      310,      310,      290,      310,      290} /* TG,TG,T,T,E */
05771      , {      310,      310,      290,      310,      290} /* TG,TG,T,T,A */
05772      , {      290,      290,      270,      290,      270} /* TG,TG,T,T,C */
05773      , {      310,      310,      290,      310,      290} /* TG,TG,T,T,G */
05774      , {      290,      290,      270,      290,      270} /* TG,TG,T,T,T */
05775      }
05776      }
05777      }
05778      , {{{      310,      310,      290,      310,      310} /* TG,AT,E,E,E */
05779      , {      310,      310,      290,      310,      310} /* TG,AT,E,E,A */
05780      , {      280,      280,      260,      280,      280} /* TG,AT,E,E,C */
05781      , {      310,      310,      290,      310,      310} /* TG,AT,E,E,G */
05782      , {      310,      310,      290,      310,      310} /* TG,AT,E,E,T */
05783      }
05784      , {{      310,      310,      290,      310,      310} /* TG,AT,E,A,E */
05785      , {      240,      240,      220,      240,      240} /* TG,AT,E,A,A */
05786      , {      260,      260,      240,      260,      260} /* TG,AT,E,A,C */
05787      , {      250,      250,      230,      250,      250} /* TG,AT,E,A,G */
05788      , {      310,      310,      290,      310,      310} /* TG,AT,E,A,T */
05789      }
05790      , {{      290,      290,      270,      290,      290} /* TG,AT,E,C,E */
05791      , {      260,      260,      240,      260,      260} /* TG,AT,E,C,A */
05792      , {      280,      280,      260,      280,      280} /* TG,AT,E,C,C */
05793      , {      290,      290,      270,      290,      290} /* TG,AT,E,C,G */
05794      , {      270,      270,      250,      270,      270} /* TG,AT,E,C,T */
05795      }
05796      , {{      310,      310,      290,      310,      310} /* TG,AT,E,G,E */
05797      , {      250,      250,      230,      250,      250} /* TG,AT,E,G,A */
05798      , {      270,      270,      250,      270,      270} /* TG,AT,E,G,C */
05799      , {      250,      250,      230,      250,      250} /* TG,AT,E,G,G */
05800      , {      310,      310,      290,      310,      310} /* TG,AT,E,G,T */
05801      }
05802      , {{      310,      310,      290,      310,      310} /* TG,AT,E,T,E */
05803      , {      310,      310,      290,      310,      310} /* TG,AT,E,T,A */
05804      , {      270,      270,      250,      270,      270} /* TG,AT,E,T,C */
05805      , {      310,      310,      290,      310,      310} /* TG,AT,E,T,G */
05806      , {      250,      250,      230,      250,      250} /* TG,AT,E,T,T */
05807      }
05808      }
05809      , {{{      310,      260,      290,      260,      310} /* TG,AT,A,E,E */
05810      , {      310,      260,      290,      260,      310} /* TG,AT,A,E,A */

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05811      , {      280,      230,      260,      230,      280} /* TG,AT,A,E,C */
05812      , {      310,      260,      290,      260,      310} /* TG,AT,A,E,G */
05813      , {      310,      260,      290,      260,      310} /* TG,AT,A,E,T */
05814      }
05815      , {{      310,      260,      290,      260,      310} /* TG,AT,A,A,E */
05816      , {      240,      190,      220,      190,      240} /* TG,AT,A,A,A */
05817      , {      260,      210,      240,      210,      260} /* TG,AT,A,A,C */
05818      , {      250,      200,      230,      200,      250} /* TG,AT,A,A,G */
05819      , {      310,      260,      290,      260,      310} /* TG,AT,A,A,T */
05820      }
05821      , {{      290,      240,      270,      240,      290} /* TG,AT,A,C,E */
05822      , {      260,      210,      240,      210,      260} /* TG,AT,A,C,A */
05823      , {      280,      230,      260,      230,      280} /* TG,AT,A,C,C */
05824      , {      290,      240,      270,      240,      290} /* TG,AT,A,C,G */
05825      , {      270,      220,      250,      220,      270} /* TG,AT,A,C,T */
05826      }
05827      , {{      310,      260,      290,      260,      310} /* TG,AT,A,G,E */
05828      , {      250,      200,      230,      200,      250} /* TG,AT,A,G,A */
05829      , {      270,      220,      250,      220,      270} /* TG,AT,A,G,C */
05830      , {      250,      200,      230,      200,      250} /* TG,AT,A,G,G */
05831      , {      310,      260,      290,      260,      310} /* TG,AT,A,G,T */
05832      }
05833      , {{      310,      260,      290,      260,      310} /* TG,AT,A,T,E */
05834      , {      310,      260,      290,      260,      310} /* TG,AT,A,T,A */
05835      , {      270,      220,      250,      220,      270} /* TG,AT,A,T,C */
05836      , {      310,      260,      290,      260,      310} /* TG,AT,A,T,G */
05837      , {      250,      200,      230,      200,      250} /* TG,AT,A,T,T */
05838      }
05839      }
05840      , {{{      290,      290,      290,      280,      290} /* TG,AT,C,E,E */
05841      , {      290,      290,      290,      280,      290} /* TG,AT,C,E,A */
05842      , {      260,      260,      260,      250,      260} /* TG,AT,C,E,C */
05843      , {      290,      290,      290,      280,      290} /* TG,AT,C,E,G */
05844      , {      290,      290,      290,      280,      290} /* TG,AT,C,E,T */
05845      }
05846      , {{      290,      290,      290,      280,      290} /* TG,AT,C,A,E */
05847      , {      220,      220,      220,      210,      220} /* TG,AT,C,A,A */
05848      , {      240,      240,      240,      230,      240} /* TG,AT,C,A,C */
05849      , {      230,      230,      230,      220,      230} /* TG,AT,C,A,G */
05850      , {      290,      290,      290,      280,      290} /* TG,AT,C,A,T */
05851      }
05852      , {{      270,      270,      270,      260,      270} /* TG,AT,C,C,E */
05853      , {      240,      240,      240,      230,      240} /* TG,AT,C,C,A */
05854      , {      260,      260,      260,      250,      260} /* TG,AT,C,C,C */
05855      , {      270,      270,      270,      260,      270} /* TG,AT,C,C,G */
05856      , {      250,      250,      250,      240,      250} /* TG,AT,C,C,T */
05857      }
05858      , {{      290,      290,      290,      280,      290} /* TG,AT,C,G,E */
05859      , {      230,      230,      230,      220,      230} /* TG,AT,C,G,A */
05860      , {      250,      250,      250,      240,      250} /* TG,AT,C,G,C */
05861      , {      230,      230,      230,      220,      230} /* TG,AT,C,G,G */
05862      , {      290,      290,      290,      280,      290} /* TG,AT,C,G,T */
05863      }
05864      , {{{      290,      290,      290,      280,      290} /* TG,AT,C,T,E */
05865      , {      290,      290,      290,      280,      290} /* TG,AT,C,T,A */
05866      , {      250,      250,      250,      240,      250} /* TG,AT,C,T,C */
05867      , {      290,      290,      290,      280,      290} /* TG,AT,C,T,G */
05868      , {      230,      230,      230,      220,      230} /* TG,AT,C,T,T */
05869      }
05870      }
05871      , {{{      310,      260,      260,      260,      310} /* TG,AT,G,E,E */
05872      , {      310,      260,      260,      260,      310} /* TG,AT,G,E,A */
05873      , {      280,      230,      230,      230,      280} /* TG,AT,G,E,C */
05874      , {      310,      260,      260,      260,      310} /* TG,AT,G,E,G */
05875      , {      310,      260,      260,      260,      310} /* TG,AT,G,E,T */
05876      }
05877      , {{      310,      260,      260,      260,      310} /* TG,AT,G,A,E */
05878      , {      240,      190,      190,      190,      240} /* TG,AT,G,A,A */
05879      , {      260,      210,      210,      210,      260} /* TG,AT,G,A,C */
05880      , {      250,      200,      200,      200,      250} /* TG,AT,G,A,G */
05881      , {      310,      260,      260,      260,      310} /* TG,AT,G,A,T */
05882      }
05883      , {{      290,      240,      240,      240,      290} /* TG,AT,G,C,E */
05884      , {      260,      210,      210,      210,      260} /* TG,AT,G,C,A */
05885      , {      280,      230,      230,      230,      280} /* TG,AT,G,C,C */
05886      , {      290,      240,      240,      240,      290} /* TG,AT,G,C,G */
05887      , {      270,      220,      220,      220,      270} /* TG,AT,G,C,T */
05888      }
05889      , {{      310,      260,      260,      260,      310} /* TG,AT,G,G,E */
05890      , {      250,      200,      200,      200,      250} /* TG,AT,G,G,A */
05891      , {      270,      220,      220,      220,      270} /* TG,AT,G,G,C */
05892      , {      250,      200,      200,      200,      250} /* TG,AT,G,G,G */
05893      , {      310,      260,      260,      260,      310} /* TG,AT,G,G,T */
05894      }
05895      , {{      310,      260,      260,      260,      310} /* TG,AT,G,T,E */
05896      , {      310,      260,      260,      260,      310} /* TG,AT,G,T,A */
05897      , {      270,      220,      220,      220,      270} /* TG,AT,G,T,C */

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05898      , {      310,      260,      260,      260,      310} /* TG,AT,G,T,G */
05899      , {      250,      200,      200,      200,      250} /* TG,AT,G,T,T */
05900      }
05901  }
05902  , {{{      310,      310,      290,      310,      290} /* TG,AT,T,E,E */
05903      , {      310,      310,      290,      310,      290} /* TG,AT,T,E,A */
05904      , {      280,      280,      260,      280,      260} /* TG,AT,T,E,C */
05905      , {      310,      310,      290,      310,      290} /* TG,AT,T,E,G */
05906      , {      310,      310,      290,      310,      290} /* TG,AT,T,E,T */
05907      }
05908  , {{{      310,      310,      290,      310,      290} /* TG,AT,T,A,E */
05909      , {      240,      240,      220,      240,      220} /* TG,AT,T,A,A */
05910      , {      260,      260,      240,      260,      240} /* TG,AT,T,A,C */
05911      , {      250,      250,      230,      250,      230} /* TG,AT,T,A,G */
05912      , {      310,      310,      290,      310,      290} /* TG,AT,T,A,T */
05913      }
05914  , {{{      290,      290,      270,      290,      270} /* TG,AT,T,C,E */
05915      , {      260,      260,      240,      260,      240} /* TG,AT,T,C,A */
05916      , {      280,      280,      260,      280,      260} /* TG,AT,T,C,C */
05917      , {      290,      290,      270,      290,      270} /* TG,AT,T,C,G */
05918      , {      270,      270,      250,      270,      250} /* TG,AT,T,C,T */
05919      }
05920  , {{{      310,      310,      290,      310,      290} /* TG,AT,T,G,E */
05921      , {      250,      250,      230,      250,      230} /* TG,AT,T,G,A */
05922      , {      270,      270,      250,      270,      250} /* TG,AT,T,G,C */
05923      , {      250,      250,      230,      250,      230} /* TG,AT,T,G,G */
05924      , {      310,      310,      290,      310,      290} /* TG,AT,T,G,T */
05925      }
05926  , {{{      310,      310,      290,      310,      290} /* TG,AT,T,T,E */
05927      , {      310,      310,      290,      310,      290} /* TG,AT,T,T,A */
05928      , {      270,      270,      250,      270,      250} /* TG,AT,T,T,C */
05929      , {      310,      310,      290,      310,      290} /* TG,AT,T,T,G */
05930      , {      250,      250,      230,      250,      230} /* TG,AT,T,T,T */
05931      }
05932  }
05933  }
05934  , {{{ {      310,      310,      290,      310,      310} /* TG,TA,E,E,E */
05935      , {      310,      310,      290,      310,      310} /* TG,TA,E,E,A */
05936      , {      280,      280,      260,      280,      280} /* TG,TA,E,E,C */
05937      , {      310,      310,      290,      310,      310} /* TG,TA,E,E,G */
05938      , {      310,      310,      290,      310,      310} /* TG,TA,E,E,T */
05939      }
05940  , {{{      310,      310,      290,      310,      310} /* TG,TA,E,A,E */
05941      , {      250,      250,      230,      250,      250} /* TG,TA,E,A,A */
05942      , {      260,      260,      240,      260,      260} /* TG,TA,E,A,C */
05943      , {      250,      250,      230,      250,      250} /* TG,TA,E,A,G */
05944      , {      310,      310,      290,      310,      310} /* TG,TA,E,A,T */
05945      }
05946  , {{{      310,      310,      290,      310,      310} /* TG,TA,E,C,E */
05947      , {      260,      260,      240,      260,      260} /* TG,TA,E,C,A */
05948      , {      280,      280,      260,      280,      280} /* TG,TA,E,C,C */
05949      , {      310,      310,      290,      310,      310} /* TG,TA,E,C,G */
05950      , {      270,      270,      250,      270,      270} /* TG,TA,E,C,T */
05951      }
05952  , {{{      300,      300,      280,      300,      300} /* TG,TA,E,G,E */
05953      , {      250,      250,      230,      250,      250} /* TG,TA,E,G,A */
05954      , {      260,      260,      240,      260,      260} /* TG,TA,E,G,C */
05955      , {      250,      250,      230,      250,      250} /* TG,TA,E,G,G */
05956      , {      300,      300,      280,      300,      300} /* TG,TA,E,G,T */
05957      }
05958  , {{{      310,      310,      290,      310,      310} /* TG,TA,E,T,E */
05959      , {      310,      310,      290,      310,      310} /* TG,TA,E,T,A */
05960      , {      270,      270,      250,      270,      270} /* TG,TA,E,T,C */
05961      , {      310,      310,      290,      310,      310} /* TG,TA,E,T,G */
05962      , {      250,      250,      230,      250,      250} /* TG,TA,E,T,T */
05963      }
05964  }
05965  , {{{ {      310,      260,      290,      260,      310} /* TG,TA,A,E,E */
05966      , {      310,      260,      290,      260,      310} /* TG,TA,A,E,A */
05967      , {      280,      230,      260,      230,      280} /* TG,TA,A,E,C */
05968      , {      310,      260,      290,      260,      310} /* TG,TA,A,E,G */
05969      , {      310,      260,      290,      260,      310} /* TG,TA,A,E,T */
05970      }
05971  , {{{      310,      260,      290,      260,      310} /* TG,TA,A,A,E */
05972      , {      250,      200,      230,      200,      250} /* TG,TA,A,A,A */
05973      , {      260,      210,      240,      210,      260} /* TG,TA,A,A,C */
05974      , {      250,      200,      230,      200,      250} /* TG,TA,A,A,G */
05975      , {      310,      260,      290,      260,      310} /* TG,TA,A,A,T */
05976      }
05977  , {{{      310,      260,      290,      260,      310} /* TG,TA,A,C,E */
05978      , {      260,      210,      240,      210,      260} /* TG,TA,A,C,A */
05979      , {      280,      230,      260,      230,      280} /* TG,TA,A,C,C */
05980      , {      310,      260,      290,      260,      310} /* TG,TA,A,C,G */
05981      , {      270,      220,      250,      220,      270} /* TG,TA,A,C,T */
05982      }
05983  , {{{      300,      250,      280,      250,      300} /* TG,TA,A,G,E */
05984      , {      250,      200,      230,      200,      250} /* TG,TA,A,G,A */

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05985      , {      260,      210,      240,      210,      260} /* TG,TA,A,G,C */
05986      , {      250,      200,      230,      200,      250} /* TG,TA,A,G,G */
05987      , {      300,      250,      280,      250,      300} /* TG,TA,A,G,T */
05988      }
05989      , { {      310,      260,      290,      260,      310} /* TG,TA,A,T,E */
05990      , {      310,      260,      290,      260,      310} /* TG,TA,A,T,A */
05991      , {      270,      220,      250,      220,      270} /* TG,TA,A,T,C */
05992      , {      310,      260,      290,      260,      310} /* TG,TA,A,T,G */
05993      , {      250,      200,      230,      200,      250} /* TG,TA,A,T,T */
05994      }
05995      }
05996      , { { {      290,      290,      290,      280,      290} /* TG,TA,C,E,E */
05997      , {      290,      290,      290,      280,      290} /* TG,TA,C,E,A */
05998      , {      260,      260,      260,      250,      260} /* TG,TA,C,E,C */
05999      , {      290,      290,      290,      280,      290} /* TG,TA,C,E,G */
06000      , {      290,      290,      290,      280,      290} /* TG,TA,C,E,T */
06001      }
06002      , { {      290,      290,      290,      280,      290} /* TG,TA,C,A,E */
06003      , {      230,      230,      230,      220,      230} /* TG,TA,C,A,A */
06004      , {      240,      240,      240,      230,      240} /* TG,TA,C,A,C */
06005      , {      230,      230,      230,      220,      230} /* TG,TA,C,A,G */
06006      , {      290,      290,      290,      280,      290} /* TG,TA,C,A,T */
06007      }
06008      , { {      290,      290,      290,      280,      290} /* TG,TA,C,C,E */
06009      , {      240,      240,      240,      230,      240} /* TG,TA,C,C,A */
06010      , {      260,      260,      260,      250,      260} /* TG,TA,C,C,C */
06011      , {      290,      290,      290,      280,      290} /* TG,TA,C,C,G */
06012      , {      250,      250,      250,      240,      250} /* TG,TA,C,C,T */
06013      }
06014      , { { {      280,      280,      280,      270,      280} /* TG,TA,C,G,E */
06015      , {      230,      230,      230,      220,      230} /* TG,TA,C,G,A */
06016      , {      240,      240,      240,      230,      240} /* TG,TA,C,G,C */
06017      , {      230,      230,      230,      220,      230} /* TG,TA,C,G,G */
06018      , {      280,      280,      280,      270,      280} /* TG,TA,C,G,T */
06019      }
06020      , { { {      290,      290,      290,      280,      290} /* TG,TA,C,T,E */
06021      , {      290,      290,      290,      280,      290} /* TG,TA,C,T,A */
06022      , {      250,      250,      250,      240,      250} /* TG,TA,C,T,C */
06023      , {      290,      290,      290,      280,      290} /* TG,TA,C,T,G */
06024      , {      230,      230,      230,      220,      230} /* TG,TA,C,T,T */
06025      }
06026      }
06027      , { { { {      310,      260,      260,      260,      310} /* TG,TA,G,E,E */
06028      , {      310,      260,      260,      260,      310} /* TG,TA,G,E,A */
06029      , {      280,      230,      230,      230,      280} /* TG,TA,G,E,C */
06030      , {      310,      260,      260,      260,      310} /* TG,TA,G,E,G */
06031      , {      310,      260,      260,      260,      310} /* TG,TA,G,E,T */
06032      }
06033      , { { {      310,      260,      260,      260,      310} /* TG,TA,G,A,E */
06034      , {      250,      200,      200,      200,      250} /* TG,TA,G,A,A */
06035      , {      260,      210,      210,      210,      260} /* TG,TA,G,A,C */
06036      , {      250,      200,      200,      200,      250} /* TG,TA,G,A,G */
06037      , {      310,      260,      260,      260,      310} /* TG,TA,G,A,T */
06038      }
06039      , { { {      310,      260,      260,      260,      310} /* TG,TA,G,C,E */
06040      , {      260,      210,      210,      210,      260} /* TG,TA,G,C,A */
06041      , {      280,      230,      230,      230,      280} /* TG,TA,G,C,C */
06042      , {      310,      260,      260,      260,      310} /* TG,TA,G,C,G */
06043      , {      270,      220,      220,      220,      270} /* TG,TA,G,C,T */
06044      }
06045      , { { {      300,      250,      250,      250,      300} /* TG,TA,G,G,E */
06046      , {      250,      200,      200,      200,      250} /* TG,TA,G,G,A */
06047      , {      260,      210,      210,      210,      260} /* TG,TA,G,G,C */
06048      , {      250,      200,      200,      200,      250} /* TG,TA,G,G,G */
06049      , {      300,      250,      250,      250,      300} /* TG,TA,G,G,T */
06050      }
06051      , { { {      310,      260,      260,      260,      310} /* TG,TA,G,T,E */
06052      , {      310,      260,      260,      260,      310} /* TG,TA,G,T,A */
06053      , {      270,      220,      220,      220,      270} /* TG,TA,G,T,C */
06054      , {      310,      260,      260,      260,      310} /* TG,TA,G,T,G */
06055      , {      250,      200,      200,      200,      250} /* TG,TA,G,T,T */
06056      }
06057      }
06058      , { { { {      310,      310,      290,      310,      290} /* TG,TA,T,E,E */
06059      , {      310,      310,      290,      310,      290} /* TG,TA,T,E,A */
06060      , {      280,      280,      260,      280,      260} /* TG,TA,T,E,C */
06061      , {      310,      310,      290,      310,      290} /* TG,TA,T,E,G */
06062      , {      310,      310,      290,      310,      290} /* TG,TA,T,E,T */
06063      }
06064      , { { {      310,      310,      290,      310,      290} /* TG,TA,T,A,E */
06065      , {      250,      250,      230,      250,      230} /* TG,TA,T,A,A */
06066      , {      260,      260,      240,      260,      240} /* TG,TA,T,A,C */
06067      , {      250,      250,      230,      250,      230} /* TG,TA,T,A,G */
06068      , {      310,      310,      290,      310,      290} /* TG,TA,T,A,T */
06069      }
06070      , { { {      310,      310,      290,      310,      290} /* TG,TA,T,C,E */
06071      , {      260,      260,      240,      260,      240} /* TG,TA,T,C,A */

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06072      , {      280,      280,      260,      280,      260} /* TG,TA,T,C,C */
06073      , {      310,      310,      290,      310,      290} /* TG,TA,T,C,G */
06074      , {      270,      270,      250,      270,      250} /* TG,TA,T,C,T */
06075      }
06076      , { {      300,      300,      280,      300,      280} /* TG,TA,T,G,E */
06077      , {      250,      250,      230,      250,      230} /* TG,TA,T,G,A */
06078      , {      260,      260,      240,      260,      240} /* TG,TA,T,G,C */
06079      , {      250,      250,      230,      250,      230} /* TG,TA,T,G,G */
06080      , {      300,      300,      280,      300,      280} /* TG,TA,T,G,T */
06081      }
06082      , { {      310,      310,      290,      310,      290} /* TG,TA,T,T,E */
06083      , {      310,      310,      290,      310,      290} /* TG,TA,T,T,A */
06084      , {      270,      270,      250,      270,      250} /* TG,TA,T,T,C */
06085      , {      310,      310,      290,      310,      290} /* TG,TA,T,T,G */
06086      , {      250,      250,      230,      250,      230} /* TG,TA,T,T,T */
06087      }
06088      }
06089      }
06090      , { { {      310,      310,      290,      310,      310} /* TG,NN,E,E,E */
06091      , {      310,      310,      290,      310,      310} /* TG,NN,E,E,A */
06092      , {      290,      290,      270,      290,      290} /* TG,NN,E,E,C */
06093      , {      310,      310,      290,      310,      310} /* TG,NN,E,E,G */
06094      , {      310,      310,      290,      310,      310} /* TG,NN,E,E,T */
06095      }
06096      , { {      310,      310,      290,      310,      310} /* TG,NN,E,A,E */
06097      , {      260,      260,      240,      260,      260} /* TG,NN,E,A,A */
06098      , {      290,      290,      270,      290,      290} /* TG,NN,E,A,C */
06099      , {      260,      260,      240,      260,      260} /* TG,NN,E,A,G */
06100      , {      310,      310,      290,      310,      310} /* TG,NN,E,A,T */
06101      }
06102      , { {      310,      310,      290,      310,      310} /* TG,NN,E,C,E */
06103      , {      290,      290,      270,      290,      290} /* TG,NN,E,C,A */
06104      , {      290,      290,      270,      290,      290} /* TG,NN,E,C,C */
06105      , {      310,      310,      290,      310,      310} /* TG,NN,E,C,G */
06106      , {      290,      290,      270,      290,      290} /* TG,NN,E,C,T */
06107      }
06108      , { {      310,      310,      290,      310,      310} /* TG,NN,E,G,E */
06109      , {      260,      260,      240,      260,      260} /* TG,NN,E,G,A */
06110      , {      280,      280,      260,      280,      280} /* TG,NN,E,G,C */
06111      , {      260,      260,      240,      260,      260} /* TG,NN,E,G,G */
06112      , {      310,      310,      290,      310,      310} /* TG,NN,E,G,T */
06113      }
06114      , { {      310,      310,      290,      310,      310} /* TG,NN,E,T,E */
06115      , {      310,      310,      290,      310,      310} /* TG,NN,E,T,A */
06116      , {      290,      290,      270,      290,      290} /* TG,NN,E,T,C */
06117      , {      310,      310,      290,      310,      310} /* TG,NN,E,T,G */
06118      , {      290,      290,      270,      290,      290} /* TG,NN,E,T,T */
06119      }
06120      }
06121      , { { {      310,      260,      290,      260,      310} /* TG,NN,A,E,E */
06122      , {      310,      260,      290,      260,      310} /* TG,NN,A,E,A */
06123      , {      290,      240,      270,      240,      290} /* TG,NN,A,E,C */
06124      , {      310,      260,      290,      260,      310} /* TG,NN,A,E,G */
06125      , {      310,      260,      290,      260,      310} /* TG,NN,A,E,T */
06126      }
06127      , { {      310,      260,      290,      260,      310} /* TG,NN,A,A,E */
06128      , {      260,      210,      240,      210,      260} /* TG,NN,A,A,A */
06129      , {      290,      240,      270,      240,      290} /* TG,NN,A,A,C */
06130      , {      260,      210,      240,      210,      260} /* TG,NN,A,A,G */
06131      , {      310,      260,      290,      260,      310} /* TG,NN,A,A,T */
06132      }
06133      , { {      310,      260,      290,      260,      310} /* TG,NN,A,C,E */
06134      , {      290,      240,      270,      240,      290} /* TG,NN,A,C,A */
06135      , {      290,      240,      270,      240,      290} /* TG,NN,A,C,C */
06136      , {      310,      260,      290,      260,      310} /* TG,NN,A,C,G */
06137      , {      290,      240,      270,      240,      290} /* TG,NN,A,C,T */
06138      }
06139      , { {      310,      260,      290,      260,      310} /* TG,NN,A,G,E */
06140      , {      260,      210,      240,      210,      260} /* TG,NN,A,G,A */
06141      , {      280,      230,      260,      230,      280} /* TG,NN,A,G,C */
06142      , {      260,      210,      240,      210,      260} /* TG,NN,A,G,G */
06143      , {      310,      260,      290,      260,      310} /* TG,NN,A,G,T */
06144      }
06145      , { {      310,      260,      290,      260,      310} /* TG,NN,A,T,E */
06146      , {      310,      260,      290,      260,      310} /* TG,NN,A,T,A */
06147      , {      290,      240,      270,      240,      290} /* TG,NN,A,T,C */
06148      , {      310,      260,      290,      260,      310} /* TG,NN,A,T,G */
06149      , {      290,      240,      270,      240,      290} /* TG,NN,A,T,T */
06150      }
06151      }
06152      , { { {      290,      290,      290,      280,      290} /* TG,NN,C,E,E */
06153      , {      290,      290,      290,      280,      290} /* TG,NN,C,E,A */
06154      , {      270,      270,      270,      260,      270} /* TG,NN,C,E,C */
06155      , {      290,      290,      290,      280,      290} /* TG,NN,C,E,G */
06156      , {      290,      290,      290,      280,      290} /* TG,NN,C,E,T */
06157      }
06158      , { {      290,      290,      290,      280,      290} /* TG,NN,C,A,E */
```

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06159      , {      240,      240,      240,      230,      240} /* TG, NN, C, A, A */
06160      , {      270,      270,      270,      260,      270} /* TG, NN, C, A, C */
06161      , {      240,      240,      240,      230,      240} /* TG, NN, C, A, G */
06162      , {      290,      290,      290,      280,      290} /* TG, NN, C, A, T */
06163      }
06164      , { {      290,      290,      290,      280,      290} /* TG, NN, C, C, E */
06165      , {      270,      270,      270,      260,      270} /* TG, NN, C, C, A */
06166      , {      270,      270,      270,      260,      270} /* TG, NN, C, C, C */
06167      , {      290,      290,      290,      280,      290} /* TG, NN, C, C, G */
06168      , {      270,      270,      270,      260,      270} /* TG, NN, C, C, T */
06169      }
06170      , { {      290,      290,      290,      280,      290} /* TG, NN, C, G, E */
06171      , {      240,      240,      240,      230,      240} /* TG, NN, C, G, A */
06172      , {      260,      260,      260,      250,      260} /* TG, NN, C, G, C */
06173      , {      240,      240,      240,      230,      240} /* TG, NN, C, G, G */
06174      , {      290,      290,      290,      280,      290} /* TG, NN, C, G, T */
06175      }
06176      , { {      290,      290,      290,      280,      290} /* TG, NN, C, T, E */
06177      , {      290,      290,      290,      280,      290} /* TG, NN, C, T, A */
06178      , {      270,      270,      270,      260,      270} /* TG, NN, C, T, C */
06179      , {      290,      290,      290,      280,      290} /* TG, NN, C, T, G */
06180      , {      270,      270,      270,      260,      270} /* TG, NN, C, T, T */
06181      }
06182      }
06183      , { { {      310,      260,      260,      260,      310} /* TG, NN, G, E, E */
06184      , {      310,      260,      260,      260,      310} /* TG, NN, G, E, A */
06185      , {      290,      240,      240,      240,      290} /* TG, NN, G, E, C */
06186      , {      310,      260,      260,      260,      310} /* TG, NN, G, E, G */
06187      , {      310,      260,      260,      260,      310} /* TG, NN, G, E, T */
06188      }
06189      , { {      310,      260,      260,      260,      310} /* TG, NN, G, A, E */
06190      , {      260,      210,      210,      210,      260} /* TG, NN, G, A, A */
06191      , {      290,      240,      240,      240,      290} /* TG, NN, G, A, C */
06192      , {      260,      210,      210,      210,      260} /* TG, NN, G, A, G */
06193      , {      310,      260,      260,      260,      310} /* TG, NN, G, A, T */
06194      }
06195      , { {      310,      260,      260,      260,      310} /* TG, NN, G, C, E */
06196      , {      290,      240,      240,      240,      290} /* TG, NN, G, C, A */
06197      , {      290,      240,      240,      240,      290} /* TG, NN, G, C, C */
06198      , {      310,      260,      260,      260,      310} /* TG, NN, G, C, G */
06199      , {      290,      240,      240,      240,      290} /* TG, NN, G, C, T */
06200      }
06201      , { {      310,      260,      260,      260,      310} /* TG, NN, G, G, E */
06202      , {      260,      210,      210,      210,      260} /* TG, NN, G, G, A */
06203      , {      280,      230,      230,      230,      280} /* TG, NN, G, G, C */
06204      , {      260,      210,      210,      210,      260} /* TG, NN, G, G, G */
06205      , {      310,      260,      260,      260,      310} /* TG, NN, G, G, T */
06206      }
06207      , { {      310,      260,      260,      260,      310} /* TG, NN, G, T, E */
06208      , {      310,      260,      260,      260,      310} /* TG, NN, G, T, A */
06209      , {      290,      240,      240,      240,      290} /* TG, NN, G, T, C */
06210      , {      310,      260,      260,      260,      310} /* TG, NN, G, T, G */
06211      , {      290,      240,      240,      240,      290} /* TG, NN, G, T, T */
06212      }
06213      }
06214      , { { {      310,      310,      290,      310,      290} /* TG, NN, T, E, E */
06215      , {      310,      310,      290,      310,      290} /* TG, NN, T, E, A */
06216      , {      290,      290,      270,      290,      270} /* TG, NN, T, E, C */
06217      , {      310,      310,      290,      310,      290} /* TG, NN, T, E, G */
06218      , {      310,      310,      290,      310,      290} /* TG, NN, T, E, T */
06219      }
06220      , { {      310,      310,      290,      310,      290} /* TG, NN, T, A, E */
06221      , {      260,      260,      240,      260,      240} /* TG, NN, T, A, A */
06222      , {      290,      290,      270,      290,      270} /* TG, NN, T, A, C */
06223      , {      260,      260,      240,      260,      240} /* TG, NN, T, A, G */
06224      , {      310,      310,      290,      310,      290} /* TG, NN, T, A, T */
06225      }
06226      , { {      310,      310,      290,      310,      290} /* TG, NN, T, C, E */
06227      , {      290,      290,      270,      290,      270} /* TG, NN, T, C, A */
06228      , {      290,      290,      270,      290,      270} /* TG, NN, T, C, C */
06229      , {      310,      310,      290,      310,      290} /* TG, NN, T, C, G */
06230      , {      290,      290,      270,      290,      270} /* TG, NN, T, C, T */
06231      }
06232      , { {      310,      310,      290,      310,      290} /* TG, NN, T, G, E */
06233      , {      260,      260,      240,      260,      240} /* TG, NN, T, G, A */
06234      , {      280,      280,      260,      280,      260} /* TG, NN, T, G, C */
06235      , {      260,      260,      240,      260,      240} /* TG, NN, T, G, G */
06236      , {      310,      310,      290,      310,      290} /* TG, NN, T, G, T */
06237      }
06238      , { {      310,      310,      290,      310,      290} /* TG, NN, T, T, E */
06239      , {      310,      310,      290,      310,      290} /* TG, NN, T, T, A */
06240      , {      290,      290,      270,      290,      270} /* TG, NN, T, T, C */
06241      , {      310,      310,      290,      310,      290} /* TG, NN, T, T, G */
06242      , {      290,      290,      270,      290,      270} /* TG, NN, T, T, T */
06243      }
06244      }
06245      }

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06246 }
06247 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,E,E,E */
06248 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,A */
06249 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,C */
06250 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,G */
06251 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,T */
06252 }
06253 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,E,A,E */
06254 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,A,A */
06255 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,A,C */
06256 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,A,G */
06257 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,A,T */
06258 }
06259 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,E,C,E */
06260 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,C,A */
06261 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,C,C */
06262 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,C,G */
06263 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,C,T */
06264 }
06265 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,E,G,E */
06266 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,G,A */
06267 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,G,C */
06268 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,G,G */
06269 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,G,T */
06270 }
06271 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,E,T,E */
06272 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,T,A */
06273 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,T,C */
06274 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,T,G */
06275 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,T,T */
06276 }
06277 }
06278 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,A,E,E */
06279 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,E,A */
06280 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,E,C */
06281 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,E,G */
06282 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,E,T */
06283 }
06284 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,A,A,E */
06285 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,A,A */
06286 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,A,C */
06287 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,A,G */
06288 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,A,T */
06289 }
06290 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,A,C,E */
06291 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,C,A */
06292 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,C,C */
06293 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,C,G */
06294 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,C,T */
06295 }
06296 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,A,G,E */
06297 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,G,A */
06298 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,G,C */
06299 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,G,G */
06300 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,G,T */
06301 }
06302 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,A,T,E */
06303 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,T,A */
06304 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,T,C */
06305 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,T,G */
06306 ,{ INF, INF, INF, INF, INF} /* AT,NP,A,T,T */
06307 }
06308 }
06309 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,C,E,E */
06310 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,E,A */
06311 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,E,C */
06312 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,E,G */
06313 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,E,T */
06314 }
06315 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,C,A,E */
06316 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,A,A */
06317 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,A,C */
06318 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,A,G */
06319 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,A,T */
06320 }
06321 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,C,C,E */
06322 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,C,A */
06323 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,C,C */
06324 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,C,G */
06325 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,C,T */
06326 }
06327 ,{{{ { INF, INF, INF, INF, INF} /* AT,NP,C,G,E */
06328 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,G,A */
06329 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,G,C */
06330 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,G,G */
06331 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,G,T */
06332 }

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06333 ,{{ INF, INF, INF, INF, INF} /* AT,NP,C,T,E */
06334 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,T,A */
06335 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,T,C */
06336 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,T,G */
06337 ,{ INF, INF, INF, INF, INF} /* AT,NP,C,T,T */
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06339 }
06340 ,{{{ INF, INF, INF, INF, INF} /* AT,NP,G,E,E */
06341 ,{ INF, INF, INF, INF, INF} /* AT,NP,G,E,A */
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06343 ,{ INF, INF, INF, INF, INF} /* AT,NP,G,E,G */
06344 ,{ INF, INF, INF, INF, INF} /* AT,NP,G,E,T */
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06347 ,{ INF, INF, INF, INF, INF} /* AT,NP,G,A,A */
06348 ,{ INF, INF, INF, INF, INF} /* AT,NP,G,A,C */
06349 ,{ INF, INF, INF, INF, INF} /* AT,NP,G,A,G */
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06367 ,{ INF, INF, INF, INF, INF} /* AT,NP,G,T,G */
06368 ,{ INF, INF, INF, INF, INF} /* AT,NP,G,T,T */
06369 }
06370 }
06371 ,{{{ INF, INF, INF, INF, INF} /* AT,NP,T,E,E */
06372 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,E,A */
06373 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,E,C */
06374 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,E,G */
06375 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,E,T */
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06377 ,{{ INF, INF, INF, INF, INF} /* AT,NP,T,A,E */
06378 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,A,A */
06379 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,A,C */
06380 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,A,G */
06381 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,A,T */
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06385 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,C,C */
06386 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,C,G */
06387 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,C,T */
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06389 ,{{ INF, INF, INF, INF, INF} /* AT,NP,T,G,E */
06390 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,G,A */
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06392 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,G,G */
06393 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,G,T */
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06396 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,T,A */
06397 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,T,C */
06398 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,T,G */
06399 ,{ INF, INF, INF, INF, INF} /* AT,NP,T,T,T */
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06401 }
06402 }
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06404 ,{ 270, 270, 250, 270, 270} /* AT,CG,E,E,A */
06405 ,{ 260, 260, 240, 260, 260} /* AT,CG,E,E,C */
06406 ,{ 260, 260, 240, 260, 260} /* AT,CG,E,E,G */
06407 ,{ 290, 290, 270, 290, 290} /* AT,CG,E,E,T */
06408 }
06409 ,{{ 290, 290, 270, 290, 290} /* AT,CG,E,A,E */
06410 ,{ 210, 210, 190, 210, 210} /* AT,CG,E,A,A */
06411 ,{ 240, 240, 220, 240, 240} /* AT,CG,E,A,C */
06412 ,{ 220, 220, 200, 220, 220} /* AT,CG,E,A,G */
06413 ,{ 290, 290, 270, 290, 290} /* AT,CG,E,A,T */
06414 }
06415 ,{{ 260, 260, 240, 260, 260} /* AT,CG,E,C,E */
06416 ,{ 240, 240, 220, 240, 240} /* AT,CG,E,C,A */
06417 ,{ 260, 260, 240, 260, 260} /* AT,CG,E,C,C */
06418 ,{ 200, 200, 180, 200, 200} /* AT,CG,E,C,G */
06419 ,{ 240, 240, 220, 240, 240} /* AT,CG,E,C,T */

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06420     }
06421     ,{{      270,      270,      250,      270,      270} /* AT,CG,E,G,E */
06422     ,{      220,      220,      200,      220,      220} /* AT,CG,E,G,A */
06423     ,{      230,      230,      210,      230,      230} /* AT,CG,E,G,C */
06424     ,{      220,      220,      200,      220,      220} /* AT,CG,E,G,G */
06425     ,{      270,      270,      250,      270,      270} /* AT,CG,E,G,T */
06426     }
06427     ,{{      270,      270,      250,      270,      270} /* AT,CG,E,T,E */
06428     ,{      270,      270,      250,      270,      270} /* AT,CG,E,T,A */
06429     ,{      240,      240,      220,      240,      240} /* AT,CG,E,T,C */
06430     ,{      260,      260,      240,      260,      260} /* AT,CG,E,T,G */
06431     ,{      220,      220,      200,      220,      220} /* AT,CG,E,T,T */
06432     }
06433     }
06434     ,{{{      290,      220,      240,      230,      290} /* AT,CG,A,E,E */
06435     ,{      270,      200,      220,      210,      270} /* AT,CG,A,E,A */
06436     ,{      260,      190,      210,      200,      260} /* AT,CG,A,E,C */
06437     ,{      260,      190,      210,      200,      260} /* AT,CG,A,E,G */
06438     ,{      290,      220,      240,      230,      290} /* AT,CG,A,E,T */
06439     }
06440     ,{{      290,      220,      240,      230,      290} /* AT,CG,A,A,E */
06441     ,{      210,      140,      160,      150,      210} /* AT,CG,A,A,A */
06442     ,{      240,      170,      190,      180,      240} /* AT,CG,A,A,C */
06443     ,{      220,      150,      170,      160,      220} /* AT,CG,A,A,G */
06444     ,{      290,      220,      240,      230,      290} /* AT,CG,A,A,T */
06445     }
06446     ,{{{      260,      190,      210,      200,      260} /* AT,CG,A,C,E */
06447     ,{      240,      170,      190,      180,      240} /* AT,CG,A,C,A */
06448     ,{      260,      190,      210,      200,      260} /* AT,CG,A,C,C */
06449     ,{      200,      130,      150,      140,      200} /* AT,CG,A,C,G */
06450     ,{      240,      170,      190,      180,      240} /* AT,CG,A,C,T */
06451     }
06452     ,{{{      270,      200,      220,      210,      270} /* AT,CG,A,G,E */
06453     ,{      220,      150,      170,      160,      220} /* AT,CG,A,G,A */
06454     ,{      230,      160,      180,      170,      230} /* AT,CG,A,G,C */
06455     ,{      220,      150,      170,      160,      220} /* AT,CG,A,G,G */
06456     ,{      270,      200,      220,      210,      270} /* AT,CG,A,G,T */
06457     }
06458     ,{{{      270,      200,      220,      210,      270} /* AT,CG,A,T,E */
06459     ,{      270,      200,      220,      210,      270} /* AT,CG,A,T,A */
06460     ,{      240,      170,      190,      180,      240} /* AT,CG,A,T,C */
06461     ,{      260,      190,      210,      200,      260} /* AT,CG,A,T,G */
06462     ,{      220,      150,      170,      160,      220} /* AT,CG,A,T,T */
06463     }
06464     }
06465     ,{{{      260,      240,      260,      250,      250} /* AT,CG,C,E,E */
06466     ,{      240,      220,      240,      230,      230} /* AT,CG,C,E,A */
06467     ,{      230,      210,      230,      220,      220} /* AT,CG,C,E,C */
06468     ,{      230,      210,      230,      220,      220} /* AT,CG,C,E,G */
06469     ,{      260,      240,      260,      250,      250} /* AT,CG,C,E,T */
06470     }
06471     ,{{      260,      240,      260,      250,      250} /* AT,CG,C,A,E */
06472     ,{      180,      160,      180,      170,      170} /* AT,CG,C,A,A */
06473     ,{      210,      190,      210,      200,      200} /* AT,CG,C,A,C */
06474     ,{      190,      170,      190,      180,      180} /* AT,CG,C,A,G */
06475     ,{      260,      240,      260,      250,      250} /* AT,CG,C,A,T */
06476     }
06477     ,{{      230,      210,      230,      220,      220} /* AT,CG,C,C,E */
06478     ,{      210,      190,      210,      200,      200} /* AT,CG,C,C,A */
06479     ,{      230,      210,      230,      220,      220} /* AT,CG,C,C,C */
06480     ,{      170,      150,      170,      160,      160} /* AT,CG,C,C,G */
06481     ,{      210,      190,      210,      200,      200} /* AT,CG,C,C,T */
06482     }
06483     ,{{      240,      220,      240,      230,      230} /* AT,CG,C,G,E */
06484     ,{      190,      170,      190,      180,      180} /* AT,CG,C,G,A */
06485     ,{      200,      180,      200,      190,      190} /* AT,CG,C,G,C */
06486     ,{      190,      170,      190,      180,      180} /* AT,CG,C,G,G */
06487     ,{      240,      220,      240,      230,      230} /* AT,CG,C,G,T */
06488     }
06489     ,{{      240,      220,      240,      230,      230} /* AT,CG,C,T,E */
06490     ,{      240,      220,      240,      230,      230} /* AT,CG,C,T,A */
06491     ,{      210,      190,      210,      200,      200} /* AT,CG,C,T,C */
06492     ,{      230,      210,      230,      220,      220} /* AT,CG,C,T,G */
06493     ,{      190,      170,      190,      180,      180} /* AT,CG,C,T,T */
06494     }
06495     }
06496     ,{{{      290,      230,      270,      230,      290} /* AT,CG,G,E,E */
06497     ,{      270,      210,      250,      210,      270} /* AT,CG,G,E,A */
06498     ,{      260,      200,      240,      200,      260} /* AT,CG,G,E,C */
06499     ,{      260,      200,      240,      200,      260} /* AT,CG,G,E,G */
06500     ,{      290,      230,      270,      230,      290} /* AT,CG,G,E,T */
06501     }
06502     ,{{      290,      230,      270,      230,      290} /* AT,CG,G,A,E */
06503     ,{      210,      150,      190,      150,      210} /* AT,CG,G,A,A */
06504     ,{      240,      180,      220,      180,      240} /* AT,CG,G,A,C */
06505     ,{      220,      160,      200,      160,      220} /* AT,CG,G,A,G */
06506     ,{      290,      230,      270,      230,      290} /* AT,CG,G,A,T */
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06507      }
06508      ,{{      260,      200,      240,      200,      260} /* AT,CG,G,C,E */
06509      ,{      240,      180,      220,      180,      240} /* AT,CG,G,C,A */
06510      ,{      260,      200,      240,      200,      260} /* AT,CG,G,C,C */
06511      ,{      200,      140,      180,      140,      200} /* AT,CG,G,C,G */
06512      ,{      240,      180,      220,      180,      240} /* AT,CG,G,C,T */
06513      }
06514      ,{{      270,      210,      250,      210,      270} /* AT,CG,G,G,E */
06515      ,{      220,      160,      200,      160,      220} /* AT,CG,G,G,A */
06516      ,{      230,      170,      210,      170,      230} /* AT,CG,G,G,C */
06517      ,{      220,      160,      200,      160,      220} /* AT,CG,G,G,G */
06518      ,{      270,      210,      250,      210,      270} /* AT,CG,G,G,T */
06519      }
06520      ,{{      270,      210,      250,      210,      270} /* AT,CG,G,T,E */
06521      ,{      270,      210,      250,      210,      270} /* AT,CG,G,T,A */
06522      ,{      240,      180,      220,      180,      240} /* AT,CG,G,T,C */
06523      ,{      260,      200,      240,      200,      260} /* AT,CG,G,T,G */
06524      ,{      220,      160,      200,      160,      220} /* AT,CG,G,T,T */
06525      }
06526      }
06527      ,{{{      290,      290,      250,      290,      230} /* AT,CG,T,E,E */
06528      ,{      270,      270,      230,      270,      210} /* AT,CG,T,E,A */
06529      ,{      260,      260,      220,      260,      200} /* AT,CG,T,E,C */
06530      ,{      260,      260,      220,      260,      200} /* AT,CG,T,E,G */
06531      ,{      290,      290,      250,      290,      230} /* AT,CG,T,E,T */
06532      }
06533      ,{{{      290,      290,      250,      290,      230} /* AT,CG,T,A,E */
06534      ,{      210,      210,      170,      210,      150} /* AT,CG,T,A,A */
06535      ,{      240,      240,      200,      240,      180} /* AT,CG,T,A,C */
06536      ,{      220,      220,      180,      220,      160} /* AT,CG,T,A,G */
06537      ,{      290,      290,      250,      290,      230} /* AT,CG,T,A,T */
06538      }
06539      ,{{{      260,      260,      220,      260,      200} /* AT,CG,T,C,E */
06540      ,{      240,      240,      200,      240,      180} /* AT,CG,T,C,A */
06541      ,{      260,      260,      220,      260,      200} /* AT,CG,T,C,C */
06542      ,{      200,      200,      160,      200,      140} /* AT,CG,T,C,G */
06543      ,{      240,      240,      200,      240,      180} /* AT,CG,T,C,T */
06544      }
06545      ,{{{      270,      270,      230,      270,      210} /* AT,CG,T,G,E */
06546      ,{      220,      220,      180,      220,      160} /* AT,CG,T,G,A */
06547      ,{      230,      230,      190,      230,      170} /* AT,CG,T,G,C */
06548      ,{      220,      220,      180,      220,      160} /* AT,CG,T,G,G */
06549      ,{      270,      270,      230,      270,      210} /* AT,CG,T,G,T */
06550      }
06551      ,{{{      270,      270,      230,      270,      210} /* AT,CG,T,T,E */
06552      ,{      270,      270,      230,      270,      210} /* AT,CG,T,T,A */
06553      ,{      240,      240,      200,      240,      180} /* AT,CG,T,T,C */
06554      ,{      260,      260,      220,      260,      200} /* AT,CG,T,T,G */
06555      ,{      220,      220,      180,      220,      160} /* AT,CG,T,T,T */
06556      }
06557      }
06558      }
06559      ,{{{      280,      280,      260,      280,      280} /* AT,GC,E,E,E */
06560      ,{      260,      260,      240,      260,      260} /* AT,GC,E,E,A */
06561      ,{      250,      250,      230,      250,      250} /* AT,GC,E,E,C */
06562      ,{      280,      280,      260,      280,      280} /* AT,GC,E,E,G */
06563      ,{      270,      270,      250,      270,      270} /* AT,GC,E,E,T */
06564      }
06565      ,{{{      270,      270,      250,      270,      270} /* AT,GC,E,A,E */
06566      ,{      200,      200,      180,      200,      200} /* AT,GC,E,A,A */
06567      ,{      230,      230,      210,      230,      230} /* AT,GC,E,A,C */
06568      ,{      210,      210,      190,      210,      210} /* AT,GC,E,A,G */
06569      ,{      270,      270,      250,      270,      270} /* AT,GC,E,A,T */
06570      }
06571      ,{{{      250,      250,      230,      250,      250} /* AT,GC,E,C,E */
06572      ,{      230,      230,      210,      230,      230} /* AT,GC,E,C,A */
06573      ,{      250,      250,      230,      250,      250} /* AT,GC,E,C,C */
06574      ,{      230,      230,      210,      230,      230} /* AT,GC,E,C,G */
06575      ,{      240,      240,      220,      240,      240} /* AT,GC,E,C,T */
06576      }
06577      ,{{{      270,      270,      250,      270,      270} /* AT,GC,E,G,E */
06578      ,{      210,      210,      190,      210,      210} /* AT,GC,E,G,A */
06579      ,{      180,      180,      160,      180,      180} /* AT,GC,E,G,C */
06580      ,{      210,      210,      190,      210,      210} /* AT,GC,E,G,G */
06581      ,{      270,      270,      250,      270,      270} /* AT,GC,E,G,T */
06582      }
06583      ,{{{      280,      280,      260,      280,      280} /* AT,GC,E,T,E */
06584      ,{      260,      260,      240,      260,      260} /* AT,GC,E,T,A */
06585      ,{      240,      240,      220,      240,      240} /* AT,GC,E,T,C */
06586      ,{      280,      280,      260,      280,      280} /* AT,GC,E,T,G */
06587      ,{      220,      220,      200,      220,      220} /* AT,GC,E,T,T */
06588      }
06589      }
06590      ,{{{      280,      210,      230,      220,      280} /* AT,GC,A,E,E */
06591      ,{      260,      190,      210,      200,      260} /* AT,GC,A,E,A */
06592      ,{      250,      180,      200,      190,      250} /* AT,GC,A,E,C */
06593      ,{      280,      210,      230,      220,      280} /* AT,GC,A,E,G */

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06594 , { 270, 200, 220, 210, 270} /* AT,GC,A,E,T */
06595 }
06596 , { { 270, 200, 220, 210, 270} /* AT,GC,A,A,E */
06597 , { 200, 130, 150, 140, 200} /* AT,GC,A,A,A */
06598 , { 230, 160, 180, 170, 230} /* AT,GC,A,A,C */
06599 , { 210, 140, 160, 150, 210} /* AT,GC,A,A,G */
06600 , { 270, 200, 220, 210, 270} /* AT,GC,A,A,T */
06601 }
06602 , { { 250, 180, 200, 190, 250} /* AT,GC,A,C,E */
06603 , { 230, 160, 180, 170, 230} /* AT,GC,A,C,A */
06604 , { 250, 180, 200, 190, 250} /* AT,GC,A,C,C */
06605 , { 230, 160, 180, 170, 230} /* AT,GC,A,C,G */
06606 , { 240, 170, 190, 180, 240} /* AT,GC,A,C,T */
06607 }
06608 , { { 270, 200, 220, 210, 270} /* AT,GC,A,G,E */
06609 , { 210, 140, 160, 150, 210} /* AT,GC,A,G,A */
06610 , { 180, 110, 130, 120, 180} /* AT,GC,A,G,C */
06611 , { 210, 140, 160, 150, 210} /* AT,GC,A,G,G */
06612 , { 270, 200, 220, 210, 270} /* AT,GC,A,G,T */
06613 }
06614 , { { 280, 210, 230, 220, 280} /* AT,GC,A,T,E */
06615 , { 260, 190, 210, 200, 260} /* AT,GC,A,T,A */
06616 , { 240, 170, 190, 180, 240} /* AT,GC,A,T,C */
06617 , { 280, 210, 230, 220, 280} /* AT,GC,A,T,G */
06618 , { 220, 150, 170, 160, 220} /* AT,GC,A,T,T */
06619 }
06620 }
06621 , { { { 250, 230, 250, 240, 240} /* AT,GC,C,E,E */
06622 , { 230, 210, 230, 220, 220} /* AT,GC,C,E,A */
06623 , { 220, 200, 220, 210, 210} /* AT,GC,C,E,C */
06624 , { 250, 230, 250, 240, 240} /* AT,GC,C,E,G */
06625 , { 240, 220, 240, 230, 230} /* AT,GC,C,E,T */
06626 }
06627 , { { 240, 220, 240, 230, 230} /* AT,GC,C,A,E */
06628 , { 170, 150, 170, 160, 160} /* AT,GC,C,A,A */
06629 , { 200, 180, 200, 190, 190} /* AT,GC,C,A,C */
06630 , { 180, 160, 180, 170, 170} /* AT,GC,C,A,G */
06631 , { 240, 220, 240, 230, 230} /* AT,GC,C,A,T */
06632 }
06633 , { { 220, 200, 220, 210, 210} /* AT,GC,C,C,E */
06634 , { 200, 180, 200, 190, 190} /* AT,GC,C,C,A */
06635 , { 220, 200, 220, 210, 210} /* AT,GC,C,C,C */
06636 , { 200, 180, 200, 190, 190} /* AT,GC,C,C,G */
06637 , { 210, 190, 210, 200, 200} /* AT,GC,C,C,T */
06638 }
06639 , { { 240, 220, 240, 230, 230} /* AT,GC,C,G,E */
06640 , { 180, 160, 180, 170, 170} /* AT,GC,C,G,A */
06641 , { 150, 130, 150, 140, 140} /* AT,GC,C,G,C */
06642 , { 180, 160, 180, 170, 170} /* AT,GC,C,G,G */
06643 , { 240, 220, 240, 230, 230} /* AT,GC,C,G,T */
06644 }
06645 , { { 250, 230, 250, 240, 240} /* AT,GC,C,T,E */
06646 , { 230, 210, 230, 220, 220} /* AT,GC,C,T,A */
06647 , { 210, 190, 210, 200, 200} /* AT,GC,C,T,C */
06648 , { 250, 230, 250, 240, 240} /* AT,GC,C,T,G */
06649 , { 190, 170, 190, 180, 180} /* AT,GC,C,T,T */
06650 }
06651 }
06652 , { { { 280, 220, 260, 220, 280} /* AT,GC,G,E,E */
06653 , { 260, 200, 240, 200, 260} /* AT,GC,G,E,A */
06654 , { 250, 190, 230, 190, 250} /* AT,GC,G,E,C */
06655 , { 280, 220, 260, 220, 280} /* AT,GC,G,E,G */
06656 , { 270, 210, 250, 210, 270} /* AT,GC,G,E,T */
06657 }
06658 , { { 270, 210, 250, 210, 270} /* AT,GC,G,A,E */
06659 , { 200, 140, 180, 140, 200} /* AT,GC,G,A,A */
06660 , { 230, 170, 210, 170, 230} /* AT,GC,G,A,C */
06661 , { 210, 150, 190, 150, 210} /* AT,GC,G,A,G */
06662 , { 270, 210, 250, 210, 270} /* AT,GC,G,A,T */
06663 }
06664 , { { 250, 190, 230, 190, 250} /* AT,GC,G,C,E */
06665 , { 230, 170, 210, 170, 230} /* AT,GC,G,C,A */
06666 , { 250, 190, 230, 190, 250} /* AT,GC,G,C,C */
06667 , { 230, 170, 210, 170, 230} /* AT,GC,G,C,G */
06668 , { 240, 180, 220, 180, 240} /* AT,GC,G,C,T */
06669 }
06670 , { { 270, 210, 250, 210, 270} /* AT,GC,G,G,E */
06671 , { 210, 150, 190, 150, 210} /* AT,GC,G,G,A */
06672 , { 180, 120, 160, 120, 180} /* AT,GC,G,G,C */
06673 , { 210, 150, 190, 150, 210} /* AT,GC,G,G,G */
06674 , { 270, 210, 250, 210, 270} /* AT,GC,G,G,T */
06675 }
06676 , { { 280, 220, 260, 220, 280} /* AT,GC,G,T,E */
06677 , { 260, 200, 240, 200, 260} /* AT,GC,G,T,A */
06678 , { 240, 180, 220, 180, 240} /* AT,GC,G,T,C */
06679 , { 280, 220, 260, 220, 280} /* AT,GC,G,T,G */
06680 , { 220, 160, 200, 160, 220} /* AT,GC,G,T,T */
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06681     }
06682     }
06683     ,{{{ 280, 280, 240, 280, 220} /* AT,GC,T,E,E */
06684     ,{ 260, 260, 220, 260, 200} /* AT,GC,T,E,A */
06685     ,{ 250, 250, 210, 250, 190} /* AT,GC,T,E,C */
06686     ,{ 280, 280, 240, 280, 220} /* AT,GC,T,E,G */
06687     ,{ 270, 270, 230, 270, 210} /* AT,GC,T,E,T */
06688     }
06689     ,{{{ 270, 270, 230, 270, 210} /* AT,GC,T,A,E */
06690     ,{ 200, 200, 160, 200, 140} /* AT,GC,T,A,A */
06691     ,{ 230, 230, 190, 230, 170} /* AT,GC,T,A,C */
06692     ,{ 210, 210, 170, 210, 150} /* AT,GC,T,A,G */
06693     ,{ 270, 270, 230, 270, 210} /* AT,GC,T,A,T */
06694     }
06695     ,{{{ 250, 250, 210, 250, 190} /* AT,GC,T,C,E */
06696     ,{ 230, 230, 190, 230, 170} /* AT,GC,T,C,A */
06697     ,{ 250, 250, 210, 250, 190} /* AT,GC,T,C,C */
06698     ,{ 230, 230, 190, 230, 170} /* AT,GC,T,C,G */
06699     ,{ 240, 240, 200, 240, 180} /* AT,GC,T,C,T */
06700     }
06701     ,{{{ 270, 270, 230, 270, 210} /* AT,GC,T,G,E */
06702     ,{ 210, 210, 170, 210, 150} /* AT,GC,T,G,A */
06703     ,{ 180, 180, 140, 180, 120} /* AT,GC,T,G,C */
06704     ,{ 210, 210, 170, 210, 150} /* AT,GC,T,G,G */
06705     ,{ 270, 270, 230, 270, 210} /* AT,GC,T,G,T */
06706     }
06707     ,{{{ 280, 280, 240, 280, 220} /* AT,GC,T,T,E */
06708     ,{ 260, 260, 220, 260, 200} /* AT,GC,T,T,A */
06709     ,{ 240, 240, 200, 240, 180} /* AT,GC,T,T,C */
06710     ,{ 280, 280, 240, 280, 220} /* AT,GC,T,T,G */
06711     ,{ 220, 220, 180, 220, 160} /* AT,GC,T,T,T */
06712     }
06713     }
06714     }
06715     ,{{{ 310, 310, 290, 310, 310} /* AT,GT,E,E,E */
06716     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,E,A */
06717     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,E,C */
06718     ,{ 310, 310, 290, 310, 310} /* AT,GT,E,E,G */
06719     ,{ 310, 310, 290, 310, 310} /* AT,GT,E,E,T */
06720     }
06721     ,{{{ 310, 310, 290, 310, 310} /* AT,GT,E,A,E */
06722     ,{ 260, 260, 240, 260, 260} /* AT,GT,E,A,A */
06723     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,A,C */
06724     ,{ 260, 260, 240, 260, 260} /* AT,GT,E,A,G */
06725     ,{ 310, 310, 290, 310, 310} /* AT,GT,E,A,T */
06726     }
06727     ,{{{ 290, 290, 270, 290, 290} /* AT,GT,E,C,E */
06728     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,C,A */
06729     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,C,C */
06730     ,{ 270, 270, 250, 270, 270} /* AT,GT,E,C,G */
06731     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,C,T */
06732     }
06733     ,{{{ 310, 310, 290, 310, 310} /* AT,GT,E,G,E */
06734     ,{ 260, 260, 240, 260, 260} /* AT,GT,E,G,A */
06735     ,{ 270, 270, 250, 270, 270} /* AT,GT,E,G,C */
06736     ,{ 260, 260, 240, 260, 260} /* AT,GT,E,G,G */
06737     ,{ 310, 310, 290, 310, 310} /* AT,GT,E,G,T */
06738     }
06739     ,{{{ 310, 310, 290, 310, 310} /* AT,GT,E,T,E */
06740     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,T,A */
06741     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,T,C */
06742     ,{ 310, 310, 290, 310, 310} /* AT,GT,E,T,G */
06743     ,{ 290, 290, 270, 290, 290} /* AT,GT,E,T,T */
06744     }
06745     }
06746     ,{{{ 310, 240, 260, 250, 310} /* AT,GT,A,E,E */
06747     ,{ 290, 220, 240, 230, 290} /* AT,GT,A,E,A */
06748     ,{ 290, 220, 240, 230, 290} /* AT,GT,A,E,C */
06749     ,{ 310, 240, 260, 250, 310} /* AT,GT,A,E,G */
06750     ,{ 310, 240, 260, 250, 310} /* AT,GT,A,E,T */
06751     }
06752     ,{{{ 310, 240, 260, 250, 310} /* AT,GT,A,A,E */
06753     ,{ 260, 190, 210, 200, 260} /* AT,GT,A,A,A */
06754     ,{ 290, 220, 240, 230, 290} /* AT,GT,A,A,C */
06755     ,{ 260, 190, 210, 200, 260} /* AT,GT,A,A,G */
06756     ,{ 310, 240, 260, 250, 310} /* AT,GT,A,A,T */
06757     }
06758     ,{{{ 290, 220, 240, 230, 290} /* AT,GT,A,C,E */
06759     ,{ 290, 220, 240, 230, 290} /* AT,GT,A,C,A */
06760     ,{ 290, 220, 240, 230, 290} /* AT,GT,A,C,C */
06761     ,{ 270, 200, 220, 210, 270} /* AT,GT,A,C,G */
06762     ,{ 290, 220, 240, 230, 290} /* AT,GT,A,C,T */
06763     }
06764     ,{{{ 310, 240, 260, 250, 310} /* AT,GT,A,G,E */
06765     ,{ 260, 190, 210, 200, 260} /* AT,GT,A,G,A */
06766     ,{ 270, 200, 220, 210, 270} /* AT,GT,A,G,C */
06767     ,{ 260, 190, 210, 200, 260} /* AT,GT,A,G,G */

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```

06768      , {      310,      240,      260,      250,      310} /* AT,GT,A,G,T */
06769      }
06770      , {{      310,      240,      260,      250,      310} /* AT,GT,A,T,E */
06771      , {      290,      220,      240,      230,      290} /* AT,GT,A,T,A */
06772      , {      290,      220,      240,      230,      290} /* AT,GT,A,T,C */
06773      , {      310,      240,      260,      250,      310} /* AT,GT,A,T,G */
06774      , {      290,      220,      240,      230,      290} /* AT,GT,A,T,T */
06775      }
06776      }
06777      , {{{      280,      260,      280,      270,      270} /* AT,GT,C,E,E */
06778      , {      260,      240,      260,      250,      250} /* AT,GT,C,E,A */
06779      , {      260,      240,      260,      250,      250} /* AT,GT,C,E,C */
06780      , {      280,      260,      280,      270,      270} /* AT,GT,C,E,G */
06781      , {      280,      260,      280,      270,      270} /* AT,GT,C,E,T */
06782      }
06783      , {{      280,      260,      280,      270,      270} /* AT,GT,C,A,E */
06784      , {      230,      210,      230,      220,      220} /* AT,GT,C,A,A */
06785      , {      260,      240,      260,      250,      250} /* AT,GT,C,A,C */
06786      , {      230,      210,      230,      220,      220} /* AT,GT,C,A,G */
06787      , {      280,      260,      280,      270,      270} /* AT,GT,C,A,T */
06788      }
06789      , {{      260,      240,      260,      250,      250} /* AT,GT,C,C,E */
06790      , {      260,      240,      260,      250,      250} /* AT,GT,C,C,A */
06791      , {      260,      240,      260,      250,      250} /* AT,GT,C,C,C */
06792      , {      240,      220,      240,      230,      230} /* AT,GT,C,C,G */
06793      , {      260,      240,      260,      250,      250} /* AT,GT,C,C,T */
06794      }
06795      , {{      280,      260,      280,      270,      270} /* AT,GT,C,G,E */
06796      , {      230,      210,      230,      220,      220} /* AT,GT,C,G,A */
06797      , {      240,      220,      240,      230,      230} /* AT,GT,C,G,C */
06798      , {      230,      210,      230,      220,      220} /* AT,GT,C,G,G */
06799      , {      280,      260,      280,      270,      270} /* AT,GT,C,G,T */
06800      }
06801      , {{      280,      260,      280,      270,      270} /* AT,GT,C,T,E */
06802      , {      260,      240,      260,      250,      250} /* AT,GT,C,T,A */
06803      , {      260,      240,      260,      250,      250} /* AT,GT,C,T,C */
06804      , {      280,      260,      280,      270,      270} /* AT,GT,C,T,G */
06805      , {      260,      240,      260,      250,      250} /* AT,GT,C,T,T */
06806      }
06807      }
06808      , {{{      310,      250,      290,      250,      310} /* AT,GT,G,E,E */
06809      , {      290,      230,      270,      230,      290} /* AT,GT,G,E,A */
06810      , {      290,      230,      270,      230,      290} /* AT,GT,G,E,C */
06811      , {      310,      250,      290,      250,      310} /* AT,GT,G,E,G */
06812      , {      310,      250,      290,      250,      310} /* AT,GT,G,E,T */
06813      }
06814      , {{      310,      250,      290,      250,      310} /* AT,GT,G,A,E */
06815      , {      260,      200,      240,      200,      260} /* AT,GT,G,A,A */
06816      , {      290,      230,      270,      230,      290} /* AT,GT,G,A,C */
06817      , {      260,      200,      240,      200,      260} /* AT,GT,G,A,G */
06818      , {      310,      250,      290,      250,      310} /* AT,GT,G,A,T */
06819      }
06820      , {{      290,      230,      270,      230,      290} /* AT,GT,G,C,E */
06821      , {      290,      230,      270,      230,      290} /* AT,GT,G,C,A */
06822      , {      290,      230,      270,      230,      290} /* AT,GT,G,C,C */
06823      , {      270,      210,      250,      210,      270} /* AT,GT,G,C,G */
06824      , {      290,      230,      270,      230,      290} /* AT,GT,G,C,T */
06825      }
06826      , {{      310,      250,      290,      250,      310} /* AT,GT,G,G,E */
06827      , {      260,      200,      240,      200,      260} /* AT,GT,G,G,A */
06828      , {      270,      210,      250,      210,      270} /* AT,GT,G,G,C */
06829      , {      260,      200,      240,      200,      260} /* AT,GT,G,G,G */
06830      , {      310,      250,      290,      250,      310} /* AT,GT,G,G,T */
06831      }
06832      , {{{      310,      250,      290,      250,      310} /* AT,GT,G,T,E */
06833      , {      290,      230,      270,      230,      290} /* AT,GT,G,T,A */
06834      , {      290,      230,      270,      230,      290} /* AT,GT,G,T,C */
06835      , {      310,      250,      290,      250,      310} /* AT,GT,G,T,G */
06836      , {      290,      230,      270,      230,      290} /* AT,GT,G,T,T */
06837      }
06838      }
06839      , {{{      310,      310,      270,      310,      250} /* AT,GT,T,E,E */
06840      , {      290,      290,      250,      290,      230} /* AT,GT,T,E,A */
06841      , {      290,      290,      250,      290,      230} /* AT,GT,T,E,C */
06842      , {      310,      310,      270,      310,      250} /* AT,GT,T,E,G */
06843      , {      310,      310,      270,      310,      250} /* AT,GT,T,E,T */
06844      }
06845      , {{      310,      310,      270,      310,      250} /* AT,GT,T,A,E */
06846      , {      260,      260,      220,      260,      200} /* AT,GT,T,A,A */
06847      , {      290,      290,      250,      290,      230} /* AT,GT,T,A,C */
06848      , {      260,      260,      220,      260,      200} /* AT,GT,T,A,G */
06849      , {      310,      310,      270,      310,      250} /* AT,GT,T,A,T */
06850      }
06851      , {{      290,      290,      250,      290,      230} /* AT,GT,T,C,E */
06852      , {      290,      290,      250,      290,      230} /* AT,GT,T,C,A */
06853      , {      290,      290,      250,      290,      230} /* AT,GT,T,C,C */
06854      , {      270,      270,      230,      270,      210} /* AT,GT,T,C,G */

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06855      , {      290,      290,      250,      290,      230} /* AT,GT,T,C,T */
06856      }
06857      , {{      310,      310,      270,      310,      250} /* AT,GT,T,G,E */
06858      , {      260,      260,      220,      260,      200} /* AT,GT,T,G,A */
06859      , {      270,      270,      230,      270,      210} /* AT,GT,T,G,C */
06860      , {      260,      260,      220,      260,      200} /* AT,GT,T,G,G */
06861      , {      310,      310,      270,      310,      250} /* AT,GT,T,G,T */
06862      }
06863      , {{      310,      310,      270,      310,      250} /* AT,GT,T,T,E */
06864      , {      290,      290,      250,      290,      230} /* AT,GT,T,T,A */
06865      , {      290,      290,      250,      290,      230} /* AT,GT,T,T,C */
06866      , {      310,      310,      270,      310,      250} /* AT,GT,T,T,G */
06867      , {      290,      290,      250,      290,      230} /* AT,GT,T,T,T */
06868      }
06869      }
06870      }
06871      , {{{      310,      310,      290,      310,      310} /* AT,TG,E,E,E */
06872      , {      310,      310,      290,      310,      310} /* AT,TG,E,E,A */
06873      , {      290,      290,      270,      290,      290} /* AT,TG,E,E,C */
06874      , {      310,      310,      290,      310,      310} /* AT,TG,E,E,G */
06875      , {      310,      310,      290,      310,      310} /* AT,TG,E,E,T */
06876      }
06877      , {{      310,      310,      290,      310,      310} /* AT,TG,E,A,E */
06878      , {      260,      260,      240,      260,      260} /* AT,TG,E,A,A */
06879      , {      290,      290,      270,      290,      290} /* AT,TG,E,A,C */
06880      , {      260,      260,      240,      260,      260} /* AT,TG,E,A,G */
06881      , {      310,      310,      290,      310,      310} /* AT,TG,E,A,T */
06882      }
06883      , {{      290,      290,      270,      290,      290} /* AT,TG,E,C,E */
06884      , {      290,      290,      270,      290,      290} /* AT,TG,E,C,A */
06885      , {      290,      290,      270,      290,      290} /* AT,TG,E,C,C */
06886      , {      260,      260,      240,      260,      260} /* AT,TG,E,C,G */
06887      , {      290,      290,      270,      290,      290} /* AT,TG,E,C,T */
06888      }
06889      , {{      310,      310,      290,      310,      310} /* AT,TG,E,G,E */
06890      , {      260,      260,      240,      260,      260} /* AT,TG,E,G,A */
06891      , {      280,      280,      260,      280,      280} /* AT,TG,E,G,C */
06892      , {      260,      260,      240,      260,      260} /* AT,TG,E,G,G */
06893      , {      310,      310,      290,      310,      310} /* AT,TG,E,G,T */
06894      }
06895      , {{      310,      310,      290,      310,      310} /* AT,TG,E,T,E */
06896      , {      310,      310,      290,      310,      310} /* AT,TG,E,T,A */
06897      , {      290,      290,      270,      290,      290} /* AT,TG,E,T,C */
06898      , {      310,      310,      290,      310,      310} /* AT,TG,E,T,G */
06899      , {      290,      290,      270,      290,      290} /* AT,TG,E,T,T */
06900      }
06901      }
06902      , {{{      310,      240,      260,      250,      310} /* AT,TG,A,E,E */
06903      , {      310,      240,      260,      250,      310} /* AT,TG,A,E,A */
06904      , {      290,      220,      240,      230,      290} /* AT,TG,A,E,C */
06905      , {      310,      240,      260,      250,      310} /* AT,TG,A,E,G */
06906      , {      310,      240,      260,      250,      310} /* AT,TG,A,E,T */
06907      }
06908      , {{      310,      240,      260,      250,      310} /* AT,TG,A,A,E */
06909      , {      260,      190,      210,      200,      260} /* AT,TG,A,A,A */
06910      , {      290,      220,      240,      230,      290} /* AT,TG,A,A,C */
06911      , {      260,      190,      210,      200,      260} /* AT,TG,A,A,G */
06912      , {      310,      240,      260,      250,      310} /* AT,TG,A,A,T */
06913      }
06914      , {{      290,      220,      240,      230,      290} /* AT,TG,A,C,E */
06915      , {      290,      220,      240,      230,      290} /* AT,TG,A,C,A */
06916      , {      290,      220,      240,      230,      290} /* AT,TG,A,C,C */
06917      , {      260,      190,      210,      200,      260} /* AT,TG,A,C,G */
06918      , {      290,      220,      240,      230,      290} /* AT,TG,A,C,T */
06919      }
06920      , {{      310,      240,      260,      250,      310} /* AT,TG,A,G,E */
06921      , {      260,      190,      210,      200,      260} /* AT,TG,A,G,A */
06922      , {      280,      210,      230,      220,      280} /* AT,TG,A,G,C */
06923      , {      260,      190,      210,      200,      260} /* AT,TG,A,G,G */
06924      , {      310,      240,      260,      250,      310} /* AT,TG,A,G,T */
06925      }
06926      , {{      310,      240,      260,      250,      310} /* AT,TG,A,T,E */
06927      , {      310,      240,      260,      250,      310} /* AT,TG,A,T,A */
06928      , {      290,      220,      240,      230,      290} /* AT,TG,A,T,C */
06929      , {      310,      240,      260,      250,      310} /* AT,TG,A,T,G */
06930      , {      290,      220,      240,      230,      290} /* AT,TG,A,T,T */
06931      }
06932      }
06933      , {{{      280,      260,      280,      270,      270} /* AT,TG,C,E,E */
06934      , {      280,      260,      280,      270,      270} /* AT,TG,C,E,A */
06935      , {      260,      240,      260,      250,      250} /* AT,TG,C,E,C */
06936      , {      280,      260,      280,      270,      270} /* AT,TG,C,E,G */
06937      , {      280,      260,      280,      270,      270} /* AT,TG,C,E,T */
06938      }
06939      , {{      280,      260,      280,      270,      270} /* AT,TG,C,A,E */
06940      , {      230,      210,      230,      220,      220} /* AT,TG,C,A,A */
06941      , {      260,      240,      260,      250,      250} /* AT,TG,C,A,C */

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06942      , {      230,      210,      230,      220,      220} /* AT, TG, C, A, G */
06943      , {      280,      260,      280,      270,      270} /* AT, TG, C, A, T */
06944      }
06945      , { {      260,      240,      260,      250,      250} /* AT, TG, C, C, E */
06946      , {      260,      240,      260,      250,      250} /* AT, TG, C, C, A */
06947      , {      260,      240,      260,      250,      250} /* AT, TG, C, C, C */
06948      , {      230,      210,      230,      220,      220} /* AT, TG, C, C, G */
06949      , {      260,      240,      260,      250,      250} /* AT, TG, C, C, T */
06950      }
06951      , { {      280,      260,      280,      270,      270} /* AT, TG, C, G, E */
06952      , {      230,      210,      230,      220,      220} /* AT, TG, C, G, A */
06953      , {      250,      230,      250,      240,      240} /* AT, TG, C, G, C */
06954      , {      230,      210,      230,      220,      220} /* AT, TG, C, G, G */
06955      , {      280,      260,      280,      270,      270} /* AT, TG, C, G, T */
06956      }
06957      , { {      280,      260,      280,      270,      270} /* AT, TG, C, T, E */
06958      , {      280,      260,      280,      270,      270} /* AT, TG, C, T, A */
06959      , {      260,      240,      260,      250,      250} /* AT, TG, C, T, C */
06960      , {      280,      260,      280,      270,      270} /* AT, TG, C, T, G */
06961      , {      260,      240,      260,      250,      250} /* AT, TG, C, T, T */
06962      }
06963      }
06964      , { { {      310,      250,      290,      250,      310} /* AT, TG, G, E, E */
06965      , {      310,      250,      290,      250,      310} /* AT, TG, G, E, A */
06966      , {      290,      230,      270,      230,      290} /* AT, TG, G, E, C */
06967      , {      310,      250,      290,      250,      310} /* AT, TG, G, E, G */
06968      , {      310,      250,      290,      250,      310} /* AT, TG, G, E, T */
06969      }
06970      , { {      310,      250,      290,      250,      310} /* AT, TG, G, A, E */
06971      , {      260,      200,      240,      200,      260} /* AT, TG, G, A, A */
06972      , {      290,      230,      270,      230,      290} /* AT, TG, G, A, C */
06973      , {      260,      200,      240,      200,      260} /* AT, TG, G, A, G */
06974      , {      310,      250,      290,      250,      310} /* AT, TG, G, A, T */
06975      }
06976      , { {      290,      230,      270,      230,      290} /* AT, TG, G, C, E */
06977      , {      290,      230,      270,      230,      290} /* AT, TG, G, C, A */
06978      , {      290,      230,      270,      230,      290} /* AT, TG, G, C, C */
06979      , {      260,      200,      240,      200,      260} /* AT, TG, G, C, G */
06980      , {      290,      230,      270,      230,      290} /* AT, TG, G, C, T */
06981      }
06982      , { {      310,      250,      290,      250,      310} /* AT, TG, G, G, E */
06983      , {      260,      200,      240,      200,      260} /* AT, TG, G, G, A */
06984      , {      280,      220,      260,      220,      280} /* AT, TG, G, G, C */
06985      , {      260,      200,      240,      200,      260} /* AT, TG, G, G, G */
06986      , {      310,      250,      290,      250,      310} /* AT, TG, G, G, T */
06987      }
06988      , { {      310,      250,      290,      250,      310} /* AT, TG, G, T, E */
06989      , {      310,      250,      290,      250,      310} /* AT, TG, G, T, A */
06990      , {      290,      230,      270,      230,      290} /* AT, TG, G, T, C */
06991      , {      310,      250,      290,      250,      310} /* AT, TG, G, T, G */
06992      , {      290,      230,      270,      230,      290} /* AT, TG, G, T, T */
06993      }
06994      }
06995      , { { {      310,      310,      270,      310,      250} /* AT, TG, T, E, E */
06996      , {      310,      310,      270,      310,      250} /* AT, TG, T, E, A */
06997      , {      290,      290,      250,      290,      230} /* AT, TG, T, E, C */
06998      , {      310,      310,      270,      310,      250} /* AT, TG, T, E, G */
06999      , {      310,      310,      270,      310,      250} /* AT, TG, T, E, T */
07000      }
07001      , { {      310,      310,      270,      310,      250} /* AT, TG, T, A, E */
07002      , {      260,      260,      220,      260,      200} /* AT, TG, T, A, A */
07003      , {      290,      290,      250,      290,      230} /* AT, TG, T, A, C */
07004      , {      260,      260,      220,      260,      200} /* AT, TG, T, A, G */
07005      , {      310,      310,      270,      310,      250} /* AT, TG, T, A, T */
07006      }
07007      , { {      290,      290,      250,      290,      230} /* AT, TG, T, C, E */
07008      , {      290,      290,      250,      290,      230} /* AT, TG, T, C, A */
07009      , {      290,      290,      250,      290,      230} /* AT, TG, T, C, C */
07010      , {      260,      260,      220,      260,      200} /* AT, TG, T, C, G */
07011      , {      290,      290,      250,      290,      230} /* AT, TG, T, C, T */
07012      }
07013      , { {      310,      310,      270,      310,      250} /* AT, TG, T, G, E */
07014      , {      260,      260,      220,      260,      200} /* AT, TG, T, G, A */
07015      , {      280,      280,      240,      280,      220} /* AT, TG, T, G, C */
07016      , {      260,      260,      220,      260,      200} /* AT, TG, T, G, G */
07017      , {      310,      310,      270,      310,      250} /* AT, TG, T, G, T */
07018      }
07019      , { {      310,      310,      270,      310,      250} /* AT, TG, T, T, E */
07020      , {      310,      310,      270,      310,      250} /* AT, TG, T, T, A */
07021      , {      290,      290,      250,      290,      230} /* AT, TG, T, T, C */
07022      , {      310,      310,      270,      310,      250} /* AT, TG, T, T, G */
07023      , {      290,      290,      250,      290,      230} /* AT, TG, T, T, T */
07024      }
07025      }
07026      }
07027      , { { { {      310,      310,      290,      310,      310} /* AT, AT, E, E, E */
07028      , {      310,      310,      290,      310,      310} /* AT, AT, E, E, A */

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07029      , {      280,      280,      260,      280,      280} /* AT,AT,E,E,C */
07030      , {      310,      310,      290,      310,      310} /* AT,AT,E,E,G */
07031      , {      310,      310,      290,      310,      310} /* AT,AT,E,E,T */
07032      }
07033      , {{      310,      310,      290,      310,      310} /* AT,AT,E,A,E */
07034      , {      240,      240,      220,      240,      240} /* AT,AT,E,A,A */
07035      , {      260,      260,      240,      260,      260} /* AT,AT,E,A,C */
07036      , {      250,      250,      230,      250,      250} /* AT,AT,E,A,G */
07037      , {      310,      310,      290,      310,      310} /* AT,AT,E,A,T */
07038      }
07039      , {{      290,      290,      270,      290,      290} /* AT,AT,E,C,E */
07040      , {      260,      260,      240,      260,      260} /* AT,AT,E,C,A */
07041      , {      280,      280,      260,      280,      280} /* AT,AT,E,C,C */
07042      , {      290,      290,      270,      290,      290} /* AT,AT,E,C,G */
07043      , {      270,      270,      250,      270,      270} /* AT,AT,E,C,T */
07044      }
07045      , {{      310,      310,      290,      310,      310} /* AT,AT,E,G,E */
07046      , {      250,      250,      230,      250,      250} /* AT,AT,E,G,A */
07047      , {      270,      270,      250,      270,      270} /* AT,AT,E,G,C */
07048      , {      250,      250,      230,      250,      250} /* AT,AT,E,G,G */
07049      , {      310,      310,      290,      310,      310} /* AT,AT,E,G,T */
07050      }
07051      , {{      310,      310,      290,      310,      310} /* AT,AT,E,T,E */
07052      , {      310,      310,      290,      310,      310} /* AT,AT,E,T,A */
07053      , {      270,      270,      250,      270,      270} /* AT,AT,E,T,C */
07054      , {      310,      310,      290,      310,      310} /* AT,AT,E,T,G */
07055      , {      250,      250,      230,      250,      250} /* AT,AT,E,T,T */
07056      }
07057      }
07058      , {{{      310,      240,      260,      250,      310} /* AT,AT,A,E,E */
07059      , {      310,      240,      260,      250,      310} /* AT,AT,A,E,A */
07060      , {      280,      210,      230,      220,      280} /* AT,AT,A,E,C */
07061      , {      310,      240,      260,      250,      310} /* AT,AT,A,E,G */
07062      , {      310,      240,      260,      250,      310} /* AT,AT,A,E,T */
07063      }
07064      , {{      310,      240,      260,      250,      310} /* AT,AT,A,A,E */
07065      , {      240,      170,      190,      180,      240} /* AT,AT,A,A,A */
07066      , {      260,      190,      210,      200,      260} /* AT,AT,A,A,C */
07067      , {      250,      180,      200,      190,      250} /* AT,AT,A,A,G */
07068      , {      310,      240,      260,      250,      310} /* AT,AT,A,A,T */
07069      }
07070      , {{      290,      220,      240,      230,      290} /* AT,AT,A,C,E */
07071      , {      260,      190,      210,      200,      260} /* AT,AT,A,C,A */
07072      , {      280,      210,      230,      220,      280} /* AT,AT,A,C,C */
07073      , {      290,      220,      240,      230,      290} /* AT,AT,A,C,G */
07074      , {      270,      200,      220,      210,      270} /* AT,AT,A,C,T */
07075      }
07076      , {{      310,      240,      260,      250,      310} /* AT,AT,A,G,E */
07077      , {      250,      180,      200,      190,      250} /* AT,AT,A,G,A */
07078      , {      270,      200,      220,      210,      270} /* AT,AT,A,G,C */
07079      , {      250,      180,      200,      190,      250} /* AT,AT,A,G,G */
07080      , {      310,      240,      260,      250,      310} /* AT,AT,A,G,T */
07081      }
07082      , {{{      310,      240,      260,      250,      310} /* AT,AT,A,T,E */
07083      , {      310,      240,      260,      250,      310} /* AT,AT,A,T,A */
07084      , {      270,      200,      220,      210,      270} /* AT,AT,A,T,C */
07085      , {      310,      240,      260,      250,      310} /* AT,AT,A,T,G */
07086      , {      250,      180,      200,      190,      250} /* AT,AT,A,T,T */
07087      }
07088      }
07089      , {{{      280,      260,      280,      270,      270} /* AT,AT,C,E,E */
07090      , {      280,      260,      280,      270,      270} /* AT,AT,C,E,A */
07091      , {      250,      230,      250,      240,      240} /* AT,AT,C,E,C */
07092      , {      280,      260,      280,      270,      270} /* AT,AT,C,E,G */
07093      , {      280,      260,      280,      270,      270} /* AT,AT,C,E,T */
07094      }
07095      , {{      280,      260,      280,      270,      270} /* AT,AT,C,A,E */
07096      , {      210,      190,      210,      200,      200} /* AT,AT,C,A,A */
07097      , {      230,      210,      230,      220,      220} /* AT,AT,C,A,C */
07098      , {      220,      200,      220,      210,      210} /* AT,AT,C,A,G */
07099      , {      280,      260,      280,      270,      270} /* AT,AT,C,A,T */
07100      }
07101      , {{      260,      240,      260,      250,      250} /* AT,AT,C,C,E */
07102      , {      230,      210,      230,      220,      220} /* AT,AT,C,C,A */
07103      , {      250,      230,      250,      240,      240} /* AT,AT,C,C,C */
07104      , {      260,      240,      260,      250,      250} /* AT,AT,C,C,G */
07105      , {      240,      220,      240,      230,      230} /* AT,AT,C,C,T */
07106      }
07107      , {{      280,      260,      280,      270,      270} /* AT,AT,C,G,E */
07108      , {      220,      200,      220,      210,      210} /* AT,AT,C,G,A */
07109      , {      240,      220,      240,      230,      230} /* AT,AT,C,G,C */
07110      , {      220,      200,      220,      210,      210} /* AT,AT,C,G,G */
07111      , {      280,      260,      280,      270,      270} /* AT,AT,C,G,T */
07112      }
07113      , {{{      280,      260,      280,      270,      270} /* AT,AT,C,T,E */
07114      , {      280,      260,      280,      270,      270} /* AT,AT,C,T,A */
07115      , {      240,      220,      240,      230,      230} /* AT,AT,C,T,C */

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07116      , {      280,      260,      280,      270,      270} /* AT,AT,C,T,G */
07117      , {      220,      200,      220,      210,      210} /* AT,AT,C,T,T */
07118      }
07119  }
07120  , {{{      310,      250,      290,      250,      310} /* AT,AT,G,E,E */
07121      , {      310,      250,      290,      250,      310} /* AT,AT,G,E,A */
07122      , {      280,      220,      260,      220,      280} /* AT,AT,G,E,C */
07123      , {      310,      250,      290,      250,      310} /* AT,AT,G,E,G */
07124      , {      310,      250,      290,      250,      310} /* AT,AT,G,E,T */
07125      }
07126      , {{{      310,      250,      290,      250,      310} /* AT,AT,G,A,E */
07127      , {      240,      180,      220,      180,      240} /* AT,AT,G,A,A */
07128      , {      260,      200,      240,      200,      260} /* AT,AT,G,A,C */
07129      , {      250,      190,      230,      190,      250} /* AT,AT,G,A,G */
07130      , {      310,      250,      290,      250,      310} /* AT,AT,G,A,T */
07131      }
07132      , {{{      290,      230,      270,      230,      290} /* AT,AT,G,C,E */
07133      , {      260,      200,      240,      200,      260} /* AT,AT,G,C,A */
07134      , {      280,      220,      260,      220,      280} /* AT,AT,G,C,C */
07135      , {      290,      230,      270,      230,      290} /* AT,AT,G,C,G */
07136      , {      270,      210,      250,      210,      270} /* AT,AT,G,C,T */
07137      }
07138      , {{{      310,      250,      290,      250,      310} /* AT,AT,G,G,E */
07139      , {      250,      190,      230,      190,      250} /* AT,AT,G,G,A */
07140      , {      270,      210,      250,      210,      270} /* AT,AT,G,G,C */
07141      , {      250,      190,      230,      190,      250} /* AT,AT,G,G,G */
07142      , {      310,      250,      290,      250,      310} /* AT,AT,G,G,T */
07143      }
07144      , {{{      310,      250,      290,      250,      310} /* AT,AT,G,T,E */
07145      , {      310,      250,      290,      250,      310} /* AT,AT,G,T,A */
07146      , {      270,      210,      250,      210,      270} /* AT,AT,G,T,C */
07147      , {      310,      250,      290,      250,      310} /* AT,AT,G,T,G */
07148      , {      250,      190,      230,      190,      250} /* AT,AT,G,T,T */
07149      }
07150  }
07151  , {{{      310,      310,      270,      310,      250} /* AT,AT,T,E,E */
07152      , {      310,      310,      270,      310,      250} /* AT,AT,T,E,A */
07153      , {      280,      280,      240,      280,      220} /* AT,AT,T,E,C */
07154      , {      310,      310,      270,      310,      250} /* AT,AT,T,E,G */
07155      , {      310,      310,      270,      310,      250} /* AT,AT,T,E,T */
07156      }
07157      , {{{      310,      310,      270,      310,      250} /* AT,AT,T,A,E */
07158      , {      240,      240,      200,      240,      180} /* AT,AT,T,A,A */
07159      , {      260,      260,      220,      260,      200} /* AT,AT,T,A,C */
07160      , {      250,      250,      210,      250,      190} /* AT,AT,T,A,G */
07161      , {      310,      310,      270,      310,      250} /* AT,AT,T,A,T */
07162      }
07163      , {{{      290,      290,      250,      290,      230} /* AT,AT,T,C,E */
07164      , {      260,      260,      220,      260,      200} /* AT,AT,T,C,A */
07165      , {      280,      280,      240,      280,      220} /* AT,AT,T,C,C */
07166      , {      290,      290,      250,      290,      230} /* AT,AT,T,C,G */
07167      , {      270,      270,      230,      270,      210} /* AT,AT,T,C,T */
07168      }
07169      , {{{      310,      310,      270,      310,      250} /* AT,AT,T,G,E */
07170      , {      250,      250,      210,      250,      190} /* AT,AT,T,G,A */
07171      , {      270,      270,      230,      270,      210} /* AT,AT,T,G,C */
07172      , {      250,      250,      210,      250,      190} /* AT,AT,T,G,G */
07173      , {      310,      310,      270,      310,      250} /* AT,AT,T,G,T */
07174      }
07175      , {{{      310,      310,      270,      310,      250} /* AT,AT,T,T,E */
07176      , {      310,      310,      270,      310,      250} /* AT,AT,T,T,A */
07177      , {      270,      270,      230,      270,      210} /* AT,AT,T,T,C */
07178      , {      310,      310,      270,      310,      250} /* AT,AT,T,T,G */
07179      , {      250,      250,      210,      250,      190} /* AT,AT,T,T,T */
07180      }
07181  }
07182  }
07183  , {{{      310,      310,      290,      310,      310} /* AT,TA,E,E,E */
07184      , {      310,      310,      290,      310,      310} /* AT,TA,E,E,A */
07185      , {      280,      280,      260,      280,      280} /* AT,TA,E,E,C */
07186      , {      310,      310,      290,      310,      310} /* AT,TA,E,E,G */
07187      , {      310,      310,      290,      310,      310} /* AT,TA,E,E,T */
07188      }
07189      , {{{      310,      310,      290,      310,      310} /* AT,TA,E,A,E */
07190      , {      250,      250,      230,      250,      250} /* AT,TA,E,A,A */
07191      , {      260,      260,      240,      260,      260} /* AT,TA,E,A,C */
07192      , {      250,      250,      230,      250,      250} /* AT,TA,E,A,G */
07193      , {      310,      310,      290,      310,      310} /* AT,TA,E,A,T */
07194      }
07195      , {{{      310,      310,      290,      310,      310} /* AT,TA,E,C,E */
07196      , {      260,      260,      240,      260,      260} /* AT,TA,E,C,A */
07197      , {      280,      280,      260,      280,      280} /* AT,TA,E,C,C */
07198      , {      310,      310,      290,      310,      310} /* AT,TA,E,C,G */
07199      , {      270,      270,      250,      270,      270} /* AT,TA,E,C,T */
07200      }
07201      , {{{      300,      300,      280,      300,      300} /* AT,TA,E,G,E */
07202      , {      250,      250,      230,      250,      250} /* AT,TA,E,G,A */

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07203      , {      260,      260,      240,      260,      260} /* AT,TA,E,G,C */
07204      , {      250,      250,      230,      250,      250} /* AT,TA,E,G,G */
07205      , {      300,      300,      280,      300,      300} /* AT,TA,E,G,T */
07206      }
07207      , { {      310,      310,      290,      310,      310} /* AT,TA,E,T,E */
07208      , {      310,      310,      290,      310,      310} /* AT,TA,E,T,A */
07209      , {      270,      270,      250,      270,      270} /* AT,TA,E,T,C */
07210      , {      310,      310,      290,      310,      310} /* AT,TA,E,T,G */
07211      , {      250,      250,      230,      250,      250} /* AT,TA,E,T,T */
07212      }
07213      }
07214      , { { {      310,      240,      260,      250,      310} /* AT,TA,A,E,E */
07215      , {      310,      240,      260,      250,      310} /* AT,TA,A,E,A */
07216      , {      280,      210,      230,      220,      280} /* AT,TA,A,E,C */
07217      , {      310,      240,      260,      250,      310} /* AT,TA,A,E,G */
07218      , {      310,      240,      260,      250,      310} /* AT,TA,A,E,T */
07219      }
07220      , { {      310,      240,      260,      250,      310} /* AT,TA,A,A,E */
07221      , {      250,      180,      200,      190,      250} /* AT,TA,A,A,A */
07222      , {      260,      190,      210,      200,      260} /* AT,TA,A,A,C */
07223      , {      250,      180,      200,      190,      250} /* AT,TA,A,A,G */
07224      , {      310,      240,      260,      250,      310} /* AT,TA,A,A,T */
07225      }
07226      , { {      310,      240,      260,      250,      310} /* AT,TA,A,C,E */
07227      , {      260,      190,      210,      200,      260} /* AT,TA,A,C,A */
07228      , {      280,      210,      230,      220,      280} /* AT,TA,A,C,C */
07229      , {      310,      240,      260,      250,      310} /* AT,TA,A,C,G */
07230      , {      270,      200,      220,      210,      270} /* AT,TA,A,C,T */
07231      }
07232      , { {      300,      230,      250,      240,      300} /* AT,TA,A,G,E */
07233      , {      250,      180,      200,      190,      250} /* AT,TA,A,G,A */
07234      , {      260,      190,      210,      200,      260} /* AT,TA,A,G,C */
07235      , {      250,      180,      200,      190,      250} /* AT,TA,A,G,G */
07236      , {      300,      230,      250,      240,      300} /* AT,TA,A,G,T */
07237      }
07238      , { {      310,      240,      260,      250,      310} /* AT,TA,A,T,E */
07239      , {      310,      240,      260,      250,      310} /* AT,TA,A,T,A */
07240      , {      270,      200,      220,      210,      270} /* AT,TA,A,T,C */
07241      , {      310,      240,      260,      250,      310} /* AT,TA,A,T,G */
07242      , {      250,      180,      200,      190,      250} /* AT,TA,A,T,T */
07243      }
07244      }
07245      , { { {      280,      260,      280,      270,      270} /* AT,TA,C,E,E */
07246      , {      280,      260,      280,      270,      270} /* AT,TA,C,E,A */
07247      , {      250,      230,      250,      240,      240} /* AT,TA,C,E,C */
07248      , {      280,      260,      280,      270,      270} /* AT,TA,C,E,G */
07249      , {      280,      260,      280,      270,      270} /* AT,TA,C,E,T */
07250      }
07251      , { {      280,      260,      280,      270,      270} /* AT,TA,C,A,E */
07252      , {      220,      200,      220,      210,      210} /* AT,TA,C,A,A */
07253      , {      230,      210,      230,      220,      220} /* AT,TA,C,A,C */
07254      , {      220,      200,      220,      210,      210} /* AT,TA,C,A,G */
07255      , {      280,      260,      280,      270,      270} /* AT,TA,C,A,T */
07256      }
07257      , { {      280,      260,      280,      270,      270} /* AT,TA,C,C,E */
07258      , {      230,      210,      230,      220,      220} /* AT,TA,C,C,A */
07259      , {      250,      230,      250,      240,      240} /* AT,TA,C,C,C */
07260      , {      280,      260,      280,      270,      270} /* AT,TA,C,C,G */
07261      , {      240,      220,      240,      230,      230} /* AT,TA,C,C,T */
07262      }
07263      , { {      270,      250,      270,      260,      260} /* AT,TA,C,G,E */
07264      , {      220,      200,      220,      210,      210} /* AT,TA,C,G,A */
07265      , {      230,      210,      230,      220,      220} /* AT,TA,C,G,C */
07266      , {      220,      200,      220,      210,      210} /* AT,TA,C,G,G */
07267      , {      270,      250,      270,      260,      260} /* AT,TA,C,G,T */
07268      }
07269      , { {      280,      260,      280,      270,      270} /* AT,TA,C,T,E */
07270      , {      280,      260,      280,      270,      270} /* AT,TA,C,T,A */
07271      , {      240,      220,      240,      230,      230} /* AT,TA,C,T,C */
07272      , {      280,      260,      280,      270,      270} /* AT,TA,C,T,G */
07273      , {      220,      200,      220,      210,      210} /* AT,TA,C,T,T */
07274      }
07275      }
07276      , { { {      310,      250,      290,      250,      310} /* AT,TA,G,E,E */
07277      , {      310,      250,      290,      250,      310} /* AT,TA,G,E,A */
07278      , {      280,      220,      260,      220,      280} /* AT,TA,G,E,C */
07279      , {      310,      250,      290,      250,      310} /* AT,TA,G,E,G */
07280      , {      310,      250,      290,      250,      310} /* AT,TA,G,E,T */
07281      }
07282      , { {      310,      250,      290,      250,      310} /* AT,TA,G,A,E */
07283      , {      250,      190,      230,      190,      250} /* AT,TA,G,A,A */
07284      , {      260,      200,      240,      200,      260} /* AT,TA,G,A,C */
07285      , {      250,      190,      230,      190,      250} /* AT,TA,G,A,G */
07286      , {      310,      250,      290,      250,      310} /* AT,TA,G,A,T */
07287      }
07288      , { {      310,      250,      290,      250,      310} /* AT,TA,G,C,E */
07289      , {      260,      200,      240,      200,      260} /* AT,TA,G,C,A */

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07290      , {      280,      220,      260,      220,      280} /* AT,TA,G,C,C */
07291      , {      310,      250,      290,      250,      310} /* AT,TA,G,C,G */
07292      , {      270,      210,      250,      210,      270} /* AT,TA,G,C,T */
07293      }
07294      , {{      300,      240,      280,      240,      300} /* AT,TA,G,G,E */
07295      , {      250,      190,      230,      190,      250} /* AT,TA,G,G,A */
07296      , {      260,      200,      240,      200,      260} /* AT,TA,G,G,C */
07297      , {      250,      190,      230,      190,      250} /* AT,TA,G,G,G */
07298      , {      300,      240,      280,      240,      300} /* AT,TA,G,G,T */
07299      }
07300      , {{      310,      250,      290,      250,      310} /* AT,TA,G,T,E */
07301      , {      310,      250,      290,      250,      310} /* AT,TA,G,T,A */
07302      , {      270,      210,      250,      210,      270} /* AT,TA,G,T,C */
07303      , {      310,      250,      290,      250,      310} /* AT,TA,G,T,G */
07304      , {      250,      190,      230,      190,      250} /* AT,TA,G,T,T */
07305      }
07306      }
07307      , {{{      310,      310,      270,      310,      250} /* AT,TA,T,E,E */
07308      , {      310,      310,      270,      310,      250} /* AT,TA,T,E,A */
07309      , {      280,      280,      240,      280,      220} /* AT,TA,T,E,C */
07310      , {      310,      310,      270,      310,      250} /* AT,TA,T,E,G */
07311      , {      310,      310,      270,      310,      250} /* AT,TA,T,E,T */
07312      }
07313      , {{      310,      310,      270,      310,      250} /* AT,TA,T,A,E */
07314      , {      250,      250,      210,      250,      190} /* AT,TA,T,A,A */
07315      , {      260,      260,      220,      260,      200} /* AT,TA,T,A,C */
07316      , {      250,      250,      210,      250,      190} /* AT,TA,T,A,G */
07317      , {      310,      310,      270,      310,      250} /* AT,TA,T,A,T */
07318      }
07319      , {{{      310,      310,      270,      310,      250} /* AT,TA,T,C,E */
07320      , {      260,      260,      220,      260,      200} /* AT,TA,T,C,A */
07321      , {      280,      280,      240,      280,      220} /* AT,TA,T,C,C */
07322      , {      310,      310,      270,      310,      250} /* AT,TA,T,C,G */
07323      , {      270,      270,      230,      270,      210} /* AT,TA,T,C,T */
07324      }
07325      , {{{      300,      300,      260,      300,      240} /* AT,TA,T,G,E */
07326      , {      250,      250,      210,      250,      190} /* AT,TA,T,G,A */
07327      , {      260,      260,      220,      260,      200} /* AT,TA,T,G,C */
07328      , {      250,      250,      210,      250,      190} /* AT,TA,T,G,G */
07329      , {      300,      300,      260,      300,      240} /* AT,TA,T,G,T */
07330      }
07331      , {{{      310,      310,      270,      310,      250} /* AT,TA,T,T,E */
07332      , {      310,      310,      270,      310,      250} /* AT,TA,T,T,A */
07333      , {      270,      270,      230,      270,      210} /* AT,TA,T,T,C */
07334      , {      310,      310,      270,      310,      250} /* AT,TA,T,T,G */
07335      , {      250,      250,      210,      250,      190} /* AT,TA,T,T,T */
07336      }
07337      }
07338      }
07339      , {{{      310,      310,      290,      310,      310} /* AT,NN,E,E,E */
07340      , {      310,      310,      290,      310,      310} /* AT,NN,E,E,A */
07341      , {      290,      290,      270,      290,      290} /* AT,NN,E,E,C */
07342      , {      310,      310,      290,      310,      310} /* AT,NN,E,E,G */
07343      , {      310,      310,      290,      310,      310} /* AT,NN,E,E,T */
07344      }
07345      , {{{      310,      310,      290,      310,      310} /* AT,NN,E,A,E */
07346      , {      260,      260,      240,      260,      260} /* AT,NN,E,A,A */
07347      , {      290,      290,      270,      290,      290} /* AT,NN,E,A,C */
07348      , {      260,      260,      240,      260,      260} /* AT,NN,E,A,G */
07349      , {      310,      310,      290,      310,      310} /* AT,NN,E,A,T */
07350      }
07351      , {{{      310,      310,      290,      310,      310} /* AT,NN,E,C,E */
07352      , {      290,      290,      270,      290,      290} /* AT,NN,E,C,A */
07353      , {      290,      290,      270,      290,      290} /* AT,NN,E,C,C */
07354      , {      310,      310,      290,      310,      310} /* AT,NN,E,C,G */
07355      , {      290,      290,      270,      290,      290} /* AT,NN,E,C,T */
07356      }
07357      , {{{      310,      310,      290,      310,      310} /* AT,NN,E,G,E */
07358      , {      260,      260,      240,      260,      260} /* AT,NN,E,G,A */
07359      , {      280,      280,      260,      280,      280} /* AT,NN,E,G,C */
07360      , {      260,      260,      240,      260,      260} /* AT,NN,E,G,G */
07361      , {      310,      310,      290,      310,      310} /* AT,NN,E,G,T */
07362      }
07363      , {{{      310,      310,      290,      310,      310} /* AT,NN,E,T,E */
07364      , {      310,      310,      290,      310,      310} /* AT,NN,E,T,A */
07365      , {      290,      290,      270,      290,      290} /* AT,NN,E,T,C */
07366      , {      310,      310,      290,      310,      310} /* AT,NN,E,T,G */
07367      , {      290,      290,      270,      290,      290} /* AT,NN,E,T,T */
07368      }
07369      }
07370      , {{{      310,      240,      260,      250,      310} /* AT,NN,A,E,E */
07371      , {      310,      240,      260,      250,      310} /* AT,NN,A,E,A */
07372      , {      290,      220,      240,      230,      290} /* AT,NN,A,E,C */
07373      , {      310,      240,      260,      250,      310} /* AT,NN,A,E,G */
07374      , {      310,      240,      260,      250,      310} /* AT,NN,A,E,T */
07375      }
07376      , {{{      310,      240,      260,      250,      310} /* AT,NN,A,A,E */

```

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07377 , { 260, 190, 210, 200, 260} /* AT, NN, A, A, A */
07378 , { 290, 220, 240, 230, 290} /* AT, NN, A, A, C */
07379 , { 260, 190, 210, 200, 260} /* AT, NN, A, A, G */
07380 , { 310, 240, 260, 250, 310} /* AT, NN, A, A, T */
07381 }
07382 , { { 310, 240, 260, 250, 310} /* AT, NN, A, C, E */
07383 , { 290, 220, 240, 230, 290} /* AT, NN, A, C, A */
07384 , { 290, 220, 240, 230, 290} /* AT, NN, A, C, C */
07385 , { 310, 240, 260, 250, 310} /* AT, NN, A, C, G */
07386 , { 290, 220, 240, 230, 290} /* AT, NN, A, C, T */
07387 }
07388 , { { 310, 240, 260, 250, 310} /* AT, NN, A, G, E */
07389 , { 260, 190, 210, 200, 260} /* AT, NN, A, G, A */
07390 , { 280, 210, 230, 220, 280} /* AT, NN, A, G, C */
07391 , { 260, 190, 210, 200, 260} /* AT, NN, A, G, G */
07392 , { 310, 240, 260, 250, 310} /* AT, NN, A, G, T */
07393 }
07394 , { { 310, 240, 260, 250, 310} /* AT, NN, A, T, E */
07395 , { 310, 240, 260, 250, 310} /* AT, NN, A, T, A */
07396 , { 290, 220, 240, 230, 290} /* AT, NN, A, T, C */
07397 , { 310, 240, 260, 250, 310} /* AT, NN, A, T, G */
07398 , { 290, 220, 240, 230, 290} /* AT, NN, A, T, T */
07399 }
07400 }
07401 , { { { 280, 260, 280, 270, 270} /* AT, NN, C, E, E */
07402 , { 280, 260, 280, 270, 270} /* AT, NN, C, E, A */
07403 , { 260, 240, 260, 250, 250} /* AT, NN, C, E, C */
07404 , { 280, 260, 280, 270, 270} /* AT, NN, C, E, G */
07405 , { 280, 260, 280, 270, 270} /* AT, NN, C, E, T */
07406 }
07407 , { { 280, 260, 280, 270, 270} /* AT, NN, C, A, E */
07408 , { 230, 210, 230, 220, 220} /* AT, NN, C, A, A */
07409 , { 260, 240, 260, 250, 250} /* AT, NN, C, A, C */
07410 , { 230, 210, 230, 220, 220} /* AT, NN, C, A, G */
07411 , { 280, 260, 280, 270, 270} /* AT, NN, C, A, T */
07412 }
07413 , { { 280, 260, 280, 270, 270} /* AT, NN, C, C, E */
07414 , { 260, 240, 260, 250, 250} /* AT, NN, C, C, A */
07415 , { 260, 240, 260, 250, 250} /* AT, NN, C, C, C */
07416 , { 280, 260, 280, 270, 270} /* AT, NN, C, C, G */
07417 , { 260, 240, 260, 250, 250} /* AT, NN, C, C, T */
07418 }
07419 , { { 280, 260, 280, 270, 270} /* AT, NN, C, G, E */
07420 , { 230, 210, 230, 220, 220} /* AT, NN, C, G, A */
07421 , { 250, 230, 250, 240, 240} /* AT, NN, C, G, C */
07422 , { 230, 210, 230, 220, 220} /* AT, NN, C, G, G */
07423 , { 280, 260, 280, 270, 270} /* AT, NN, C, G, T */
07424 }
07425 , { { 280, 260, 280, 270, 270} /* AT, NN, C, T, E */
07426 , { 280, 260, 280, 270, 270} /* AT, NN, C, T, A */
07427 , { 260, 240, 260, 250, 250} /* AT, NN, C, T, C */
07428 , { 280, 260, 280, 270, 270} /* AT, NN, C, T, G */
07429 , { 260, 240, 260, 250, 250} /* AT, NN, C, T, T */
07430 }
07431 }
07432 , { { { 310, 250, 290, 250, 310} /* AT, NN, G, E, E */
07433 , { 310, 250, 290, 250, 310} /* AT, NN, G, E, A */
07434 , { 290, 230, 270, 230, 290} /* AT, NN, G, E, C */
07435 , { 310, 250, 290, 250, 310} /* AT, NN, G, E, G */
07436 , { 310, 250, 290, 250, 310} /* AT, NN, G, E, T */
07437 }
07438 , { { 310, 250, 290, 250, 310} /* AT, NN, G, A, E */
07439 , { 260, 200, 240, 200, 260} /* AT, NN, G, A, A */
07440 , { 290, 230, 270, 230, 290} /* AT, NN, G, A, C */
07441 , { 260, 200, 240, 200, 260} /* AT, NN, G, A, G */
07442 , { 310, 250, 290, 250, 310} /* AT, NN, G, A, T */
07443 }
07444 , { { 310, 250, 290, 250, 310} /* AT, NN, G, C, E */
07445 , { 290, 230, 270, 230, 290} /* AT, NN, G, C, A */
07446 , { 290, 230, 270, 230, 290} /* AT, NN, G, C, C */
07447 , { 310, 250, 290, 250, 310} /* AT, NN, G, C, G */
07448 , { 290, 230, 270, 230, 290} /* AT, NN, G, C, T */
07449 }
07450 , { { 310, 250, 290, 250, 310} /* AT, NN, G, G, E */
07451 , { 260, 200, 240, 200, 260} /* AT, NN, G, G, A */
07452 , { 280, 220, 260, 220, 280} /* AT, NN, G, G, C */
07453 , { 260, 200, 240, 200, 260} /* AT, NN, G, G, G */
07454 , { 310, 250, 290, 250, 310} /* AT, NN, G, G, T */
07455 }
07456 , { { 310, 250, 290, 250, 310} /* AT, NN, G, T, E */
07457 , { 310, 250, 290, 250, 310} /* AT, NN, G, T, A */
07458 , { 290, 230, 270, 230, 290} /* AT, NN, G, T, C */
07459 , { 310, 250, 290, 250, 310} /* AT, NN, G, T, G */
07460 , { 290, 230, 270, 230, 290} /* AT, NN, G, T, T */
07461 }
07462 }
07463 , { { { 310, 310, 270, 310, 250} /* AT, NN, T, E, E */

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07464      , {      310,      310,      270,      310,      250} /* AT,NN,T,E,A */
07465      , {      290,      290,      250,      290,      230} /* AT,NN,T,E,C */
07466      , {      310,      310,      270,      310,      250} /* AT,NN,T,E,G */
07467      , {      310,      310,      270,      310,      250} /* AT,NN,T,E,T */
07468      }
07469      , { {      310,      310,      270,      310,      250} /* AT,NN,T,A,E */
07470      , {      260,      260,      220,      260,      200} /* AT,NN,T,A,A */
07471      , {      290,      290,      250,      290,      230} /* AT,NN,T,A,C */
07472      , {      260,      260,      220,      260,      200} /* AT,NN,T,A,G */
07473      , {      310,      310,      270,      310,      250} /* AT,NN,T,A,T */
07474      }
07475      , { {      310,      310,      270,      310,      250} /* AT,NN,T,C,E */
07476      , {      290,      290,      250,      290,      230} /* AT,NN,T,C,A */
07477      , {      290,      290,      250,      290,      230} /* AT,NN,T,C,C */
07478      , {      310,      310,      270,      310,      250} /* AT,NN,T,C,G */
07479      , {      290,      290,      250,      290,      230} /* AT,NN,T,C,T */
07480      }
07481      , { {      310,      310,      270,      310,      250} /* AT,NN,T,G,E */
07482      , {      260,      260,      220,      260,      200} /* AT,NN,T,G,A */
07483      , {      280,      280,      240,      280,      220} /* AT,NN,T,G,C */
07484      , {      260,      260,      220,      260,      200} /* AT,NN,T,G,G */
07485      , {      310,      310,      270,      310,      250} /* AT,NN,T,G,T */
07486      }
07487      , { {      310,      310,      270,      310,      250} /* AT,NN,T,T,E */
07488      , {      310,      310,      270,      310,      250} /* AT,NN,T,T,A */
07489      , {      290,      290,      250,      290,      230} /* AT,NN,T,T,C */
07490      , {      310,      310,      270,      310,      250} /* AT,NN,T,T,G */
07491      , {      290,      290,      250,      290,      230} /* AT,NN,T,T,T */
07492      }
07493      }
07494      }
07495      }
07496      , { { { { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,E,E */
07497      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,E,A */
07498      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,E,C */
07499      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,E,G */
07500      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,E,T */
07501      }
07502      , { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,A,E */
07503      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,A,A */
07504      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,A,C */
07505      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,A,G */
07506      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,A,T */
07507      }
07508      , { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,C,E */
07509      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,C,A */
07510      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,C,C */
07511      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,C,G */
07512      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,C,T */
07513      }
07514      , { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,G,E */
07515      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,G,A */
07516      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,G,C */
07517      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,G,G */
07518      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,G,T */
07519      }
07520      , { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,T,E */
07521      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,T,A */
07522      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,T,C */
07523      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,T,G */
07524      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,E,T,T */
07525      }
07526      }
07527      , { { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,E,E */
07528      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,E,A */
07529      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,E,C */
07530      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,E,G */
07531      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,E,T */
07532      }
07533      , { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,A,E */
07534      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,A,A */
07535      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,A,C */
07536      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,A,G */
07537      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,A,T */
07538      }
07539      , { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,C,E */
07540      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,C,A */
07541      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,C,C */
07542      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,C,G */
07543      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,C,T */
07544      }
07545      , { {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,G,E */
07546      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,G,A */
07547      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,G,C */
07548      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,G,G */
07549      , {      INF,      INF,      INF,      INF,      INF} /* TA,NP,A,G,T */
07550      }

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07551 ,{{ INF, INF, INF, INF, INF} /* TA,NP,A,T,E */
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07553 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,T,C */
07554 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,T,G */
07555 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,T,T */
07556 }
07557 }
07558 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,C,E,E */
07559 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,E,A */
07560 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,E,C */
07561 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,E,G */
07562 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,E,T */
07563 }
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07566 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,A,C */
07567 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,A,G */
07568 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,A,T */
07569 }
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07573 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,C,G */
07574 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,C,T */
07575 }
07576 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,C,G,E */
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07578 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,G,C */
07579 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,G,G */
07580 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,G,T */
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07582 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,C,T,E */
07583 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,T,A */
07584 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,T,C */
07585 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,T,G */
07586 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,T,T */
07587 }
07588 }
07589 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,G,E,E */
07590 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,E,A */
07591 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,E,C */
07592 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,E,G */
07593 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,E,T */
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07595 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,G,A,E */
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07597 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,A,C */
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07603 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,C,C */
07604 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,C,G */
07605 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,C,T */
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07607 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,G,G,E */
07608 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,G,A */
07609 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,G,C */
07610 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,G,G */
07611 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,G,T */
07612 }
07613 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,G,T,E */
07614 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,T,A */
07615 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,T,C */
07616 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,T,G */
07617 ,{ INF, INF, INF, INF, INF} /* TA,NP,G,T,T */
07618 }
07619 }
07620 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,T,E,E */
07621 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,E,A */
07622 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,E,C */
07623 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,E,G */
07624 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,E,T */
07625 }
07626 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,T,A,E */
07627 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,A,A */
07628 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,A,C */
07629 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,A,G */
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07631 }
07632 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,T,C,E */
07633 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,C,A */
07634 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,C,C */
07635 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,C,G */
07636 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,C,T */
07637 }

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07639 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,G,A */
07640 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,G,C */
07641 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,G,G */
07642 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,G,T */
07643 }
07644 ,{{ INF, INF, INF, INF, INF} /* TA,NP,T,T,E */
07645 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,T,A */
07646 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,T,C */
07647 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,T,G */
07648 ,{ INF, INF, INF, INF, INF} /* TA,NP,T,T,T */
07649 }
07650 }
07651 }
07652 ,{{{ 290, 290, 290, 280, 290} /* TA,CG,E,E,E */
07653 ,{ 270, 270, 270, 260, 270} /* TA,CG,E,E,A */
07654 ,{ 260, 260, 260, 250, 260} /* TA,CG,E,E,C */
07655 ,{ 260, 260, 260, 250, 260} /* TA,CG,E,E,G */
07656 ,{ 290, 290, 290, 280, 290} /* TA,CG,E,E,T */
07657 }
07658 ,{{{ 290, 290, 290, 280, 290} /* TA,CG,E,A,E */
07659 ,{ 210, 210, 210, 200, 210} /* TA,CG,E,A,A */
07660 ,{ 240, 240, 240, 230, 240} /* TA,CG,E,A,C */
07661 ,{ 220, 220, 220, 210, 220} /* TA,CG,E,A,G */
07662 ,{ 290, 290, 290, 280, 290} /* TA,CG,E,A,T */
07663 }
07664 ,{{{ 260, 260, 260, 250, 260} /* TA,CG,E,C,E */
07665 ,{ 240, 240, 240, 230, 240} /* TA,CG,E,C,A */
07666 ,{ 260, 260, 260, 250, 260} /* TA,CG,E,C,C */
07667 ,{ 200, 200, 200, 190, 200} /* TA,CG,E,C,G */
07668 ,{ 240, 240, 240, 230, 240} /* TA,CG,E,C,T */
07669 }
07670 ,{{{ 270, 270, 270, 260, 270} /* TA,CG,E,G,E */
07671 ,{ 220, 220, 220, 210, 220} /* TA,CG,E,G,A */
07672 ,{ 230, 230, 230, 220, 230} /* TA,CG,E,G,C */
07673 ,{ 220, 220, 220, 210, 220} /* TA,CG,E,G,G */
07674 ,{ 270, 270, 270, 260, 270} /* TA,CG,E,G,T */
07675 }
07676 ,{{{ 270, 270, 270, 260, 270} /* TA,CG,E,T,E */
07677 ,{ 270, 270, 270, 260, 270} /* TA,CG,E,T,A */
07678 ,{ 240, 240, 240, 230, 240} /* TA,CG,E,T,C */
07679 ,{ 260, 260, 260, 250, 260} /* TA,CG,E,T,G */
07680 ,{ 220, 220, 220, 210, 220} /* TA,CG,E,T,T */
07681 }
07682 }
07683 ,{{{ 290, 230, 240, 230, 290} /* TA,CG,A,E,E */
07684 ,{ 270, 210, 220, 210, 270} /* TA,CG,A,E,A */
07685 ,{ 260, 200, 210, 200, 260} /* TA,CG,A,E,C */
07686 ,{ 260, 200, 210, 200, 260} /* TA,CG,A,E,G */
07687 ,{ 290, 230, 240, 230, 290} /* TA,CG,A,E,T */
07688 }
07689 ,{{{ 290, 230, 240, 230, 290} /* TA,CG,A,A,E */
07690 ,{ 210, 150, 160, 150, 210} /* TA,CG,A,A,A */
07691 ,{ 240, 180, 190, 180, 240} /* TA,CG,A,A,C */
07692 ,{ 220, 160, 170, 160, 220} /* TA,CG,A,A,G */
07693 ,{ 290, 230, 240, 230, 290} /* TA,CG,A,A,T */
07694 }
07695 ,{{{ 260, 200, 210, 200, 260} /* TA,CG,A,C,E */
07696 ,{ 240, 180, 190, 180, 240} /* TA,CG,A,C,A */
07697 ,{ 260, 200, 210, 200, 260} /* TA,CG,A,C,C */
07698 ,{ 200, 140, 150, 140, 200} /* TA,CG,A,C,G */
07699 ,{ 240, 180, 190, 180, 240} /* TA,CG,A,C,T */
07700 }
07701 ,{{{ 270, 210, 220, 210, 270} /* TA,CG,A,G,E */
07702 ,{ 220, 160, 170, 160, 220} /* TA,CG,A,G,A */
07703 ,{ 230, 170, 180, 170, 230} /* TA,CG,A,G,C */
07704 ,{ 220, 160, 170, 160, 220} /* TA,CG,A,G,G */
07705 ,{ 270, 210, 220, 210, 270} /* TA,CG,A,G,T */
07706 }
07707 ,{{{ 270, 210, 220, 210, 270} /* TA,CG,A,T,E */
07708 ,{ 270, 210, 220, 210, 270} /* TA,CG,A,T,A */
07709 ,{ 240, 180, 190, 180, 240} /* TA,CG,A,T,C */
07710 ,{ 260, 200, 210, 200, 260} /* TA,CG,A,T,G */
07711 ,{ 220, 160, 170, 160, 220} /* TA,CG,A,T,T */
07712 }
07713 }
07714 ,{{{ 260, 240, 260, 240, 250} /* TA,CG,C,E,E */
07715 ,{ 240, 220, 240, 220, 230} /* TA,CG,C,E,A */
07716 ,{ 230, 210, 230, 210, 220} /* TA,CG,C,E,C */
07717 ,{ 230, 210, 230, 210, 220} /* TA,CG,C,E,G */
07718 ,{ 260, 240, 260, 240, 250} /* TA,CG,C,E,T */
07719 }
07720 ,{{{ 260, 240, 260, 240, 250} /* TA,CG,C,A,E */
07721 ,{ 180, 160, 180, 160, 170} /* TA,CG,C,A,A */
07722 ,{ 210, 190, 210, 190, 200} /* TA,CG,C,A,C */
07723 ,{ 190, 170, 190, 170, 180} /* TA,CG,C,A,G */
07724 ,{ 260, 240, 260, 240, 250} /* TA,CG,C,A,T */

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07725     }
07726     ,{{    230,    210,    230,    210,    220} /* TA,CG,C,C,E */
07727     ,{     210,    190,    210,    190,    200} /* TA,CG,C,C,A */
07728     ,{     230,    210,    230,    210,    220} /* TA,CG,C,C,C */
07729     ,{     170,    150,    170,    150,    160} /* TA,CG,C,C,G */
07730     ,{     210,    190,    210,    190,    200} /* TA,CG,C,C,T */
07731     }
07732     ,{{    240,    220,    240,    220,    230} /* TA,CG,C,G,E */
07733     ,{     190,    170,    190,    170,    180} /* TA,CG,C,G,A */
07734     ,{     200,    180,    200,    180,    190} /* TA,CG,C,G,C */
07735     ,{     190,    170,    190,    170,    180} /* TA,CG,C,G,G */
07736     ,{     240,    220,    240,    220,    230} /* TA,CG,C,G,T */
07737     }
07738     ,{{    240,    220,    240,    220,    230} /* TA,CG,C,T,E */
07739     ,{     240,    220,    240,    220,    230} /* TA,CG,C,T,A */
07740     ,{     210,    190,    210,    190,    200} /* TA,CG,C,T,C */
07741     ,{     230,    210,    230,    210,    220} /* TA,CG,C,T,G */
07742     ,{     190,    170,    190,    170,    180} /* TA,CG,C,T,T */
07743     }
07744     }
07745     ,{{{    290,    230,    290,    230,    290} /* TA,CG,G,E,E */
07746     ,{     270,    210,    270,    210,    270} /* TA,CG,G,E,A */
07747     ,{     260,    200,    260,    200,    260} /* TA,CG,G,E,C */
07748     ,{     260,    200,    260,    200,    260} /* TA,CG,G,E,G */
07749     ,{     290,    230,    290,    230,    290} /* TA,CG,G,E,T */
07750     }
07751     ,{{{    290,    230,    290,    230,    290} /* TA,CG,G,A,E */
07752     ,{     210,    150,    210,    150,    210} /* TA,CG,G,A,A */
07753     ,{     240,    180,    240,    180,    240} /* TA,CG,G,A,C */
07754     ,{     220,    160,    220,    160,    220} /* TA,CG,G,A,G */
07755     ,{     290,    230,    290,    230,    290} /* TA,CG,G,A,T */
07756     }
07757     ,{{{    260,    200,    260,    200,    260} /* TA,CG,G,C,E */
07758     ,{     240,    180,    240,    180,    240} /* TA,CG,G,C,A */
07759     ,{     260,    200,    260,    200,    260} /* TA,CG,G,C,C */
07760     ,{     200,    140,    200,    140,    200} /* TA,CG,G,C,G */
07761     ,{     240,    180,    240,    180,    240} /* TA,CG,G,C,T */
07762     }
07763     ,{{{    270,    210,    270,    210,    270} /* TA,CG,G,G,E */
07764     ,{     220,    160,    220,    160,    220} /* TA,CG,G,G,A */
07765     ,{     230,    170,    230,    170,    230} /* TA,CG,G,G,C */
07766     ,{     220,    160,    220,    160,    220} /* TA,CG,G,G,G */
07767     ,{     270,    210,    270,    210,    270} /* TA,CG,G,G,T */
07768     }
07769     ,{{{    270,    210,    270,    210,    270} /* TA,CG,G,T,E */
07770     ,{     270,    210,    270,    210,    270} /* TA,CG,G,T,A */
07771     ,{     240,    180,    240,    180,    240} /* TA,CG,G,T,C */
07772     ,{     260,    200,    260,    200,    260} /* TA,CG,G,T,G */
07773     ,{     220,    160,    220,    160,    220} /* TA,CG,G,T,T */
07774     }
07775     }
07776     ,{{{    290,    290,    250,    280,    230} /* TA,CG,T,E,E */
07777     ,{     270,    270,    230,    260,    210} /* TA,CG,T,E,A */
07778     ,{     260,    260,    220,    250,    200} /* TA,CG,T,E,C */
07779     ,{     260,    260,    220,    250,    200} /* TA,CG,T,E,G */
07780     ,{     290,    290,    250,    280,    230} /* TA,CG,T,E,T */
07781     }
07782     ,{{{    290,    290,    250,    280,    230} /* TA,CG,T,A,E */
07783     ,{     210,    210,    170,    200,    150} /* TA,CG,T,A,A */
07784     ,{     240,    240,    200,    230,    180} /* TA,CG,T,A,C */
07785     ,{     220,    220,    180,    210,    160} /* TA,CG,T,A,G */
07786     ,{     290,    290,    250,    280,    230} /* TA,CG,T,A,T */
07787     }
07788     ,{{{    260,    260,    220,    250,    200} /* TA,CG,T,C,E */
07789     ,{     240,    240,    200,    230,    180} /* TA,CG,T,C,A */
07790     ,{     260,    260,    220,    250,    200} /* TA,CG,T,C,C */
07791     ,{     200,    200,    160,    190,    140} /* TA,CG,T,C,G */
07792     ,{     240,    240,    200,    230,    180} /* TA,CG,T,C,T */
07793     }
07794     ,{{{    270,    270,    230,    260,    210} /* TA,CG,T,G,E */
07795     ,{     220,    220,    180,    210,    160} /* TA,CG,T,G,A */
07796     ,{     230,    230,    190,    220,    170} /* TA,CG,T,G,C */
07797     ,{     220,    220,    180,    210,    160} /* TA,CG,T,G,G */
07798     ,{     270,    270,    230,    260,    210} /* TA,CG,T,G,T */
07799     }
07800     ,{{{    270,    270,    230,    260,    210} /* TA,CG,T,T,E */
07801     ,{     270,    270,    230,    260,    210} /* TA,CG,T,T,A */
07802     ,{     240,    240,    200,    230,    180} /* TA,CG,T,T,C */
07803     ,{     260,    260,    220,    250,    200} /* TA,CG,T,T,G */
07804     ,{     220,    220,    180,    210,    160} /* TA,CG,T,T,T */
07805     }
07806     }
07807     }
07808     ,{{{    280,    280,    280,    270,    280} /* TA,GC,E,E,E */
07809     ,{     260,    260,    260,    250,    260} /* TA,GC,E,E,A */
07810     ,{     250,    250,    250,    240,    250} /* TA,GC,E,E,C */
07811     ,{     280,    280,    280,    270,    280} /* TA,GC,E,E,G */

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07812      , {      270,      270,      270,      260,      270} /* TA,GC,E,E,T */
07813      }
07814      , { {      270,      270,      270,      260,      270} /* TA,GC,E,A,E */
07815      , {      200,      200,      200,      190,      200} /* TA,GC,E,A,A */
07816      , {      230,      230,      230,      220,      230} /* TA,GC,E,A,C */
07817      , {      210,      210,      210,      200,      210} /* TA,GC,E,A,G */
07818      , {      270,      270,      270,      260,      270} /* TA,GC,E,A,T */
07819      }
07820      , { {      250,      250,      250,      240,      250} /* TA,GC,E,C,E */
07821      , {      230,      230,      230,      220,      230} /* TA,GC,E,C,A */
07822      , {      250,      250,      250,      240,      250} /* TA,GC,E,C,C */
07823      , {      230,      230,      230,      220,      230} /* TA,GC,E,C,G */
07824      , {      240,      240,      240,      230,      240} /* TA,GC,E,C,T */
07825      }
07826      , { {      270,      270,      270,      260,      270} /* TA,GC,E,G,E */
07827      , {      210,      210,      210,      200,      210} /* TA,GC,E,G,A */
07828      , {      180,      180,      180,      170,      180} /* TA,GC,E,G,C */
07829      , {      210,      210,      210,      200,      210} /* TA,GC,E,G,G */
07830      , {      270,      270,      270,      260,      270} /* TA,GC,E,G,T */
07831      }
07832      , { {      280,      280,      280,      270,      280} /* TA,GC,E,T,E */
07833      , {      260,      260,      260,      250,      260} /* TA,GC,E,T,A */
07834      , {      240,      240,      240,      230,      240} /* TA,GC,E,T,C */
07835      , {      280,      280,      280,      270,      280} /* TA,GC,E,T,G */
07836      , {      220,      220,      220,      210,      220} /* TA,GC,E,T,T */
07837      }
07838      }
07839      , { { {      280,      220,      230,      220,      280} /* TA,GC,A,E,E */
07840      , {      260,      200,      210,      200,      260} /* TA,GC,A,E,A */
07841      , {      250,      190,      200,      190,      250} /* TA,GC,A,E,C */
07842      , {      280,      220,      230,      220,      280} /* TA,GC,A,E,G */
07843      , {      270,      210,      220,      210,      270} /* TA,GC,A,E,T */
07844      }
07845      , { {      270,      210,      220,      210,      270} /* TA,GC,A,A,E */
07846      , {      200,      140,      150,      140,      200} /* TA,GC,A,A,A */
07847      , {      230,      170,      180,      170,      230} /* TA,GC,A,A,C */
07848      , {      210,      150,      160,      150,      210} /* TA,GC,A,A,G */
07849      , {      270,      210,      220,      210,      270} /* TA,GC,A,A,T */
07850      }
07851      , { {      250,      190,      200,      190,      250} /* TA,GC,A,C,E */
07852      , {      230,      170,      180,      170,      230} /* TA,GC,A,C,A */
07853      , {      250,      190,      200,      190,      250} /* TA,GC,A,C,C */
07854      , {      230,      170,      180,      170,      230} /* TA,GC,A,C,G */
07855      , {      240,      180,      190,      180,      240} /* TA,GC,A,C,T */
07856      }
07857      , { {      270,      210,      220,      210,      270} /* TA,GC,A,G,E */
07858      , {      210,      150,      160,      150,      210} /* TA,GC,A,G,A */
07859      , {      180,      120,      130,      120,      180} /* TA,GC,A,G,C */
07860      , {      210,      150,      160,      150,      210} /* TA,GC,A,G,G */
07861      , {      270,      210,      220,      210,      270} /* TA,GC,A,G,T */
07862      }
07863      , { {      280,      220,      230,      220,      280} /* TA,GC,A,T,E */
07864      , {      260,      200,      210,      200,      260} /* TA,GC,A,T,A */
07865      , {      240,      180,      190,      180,      240} /* TA,GC,A,T,C */
07866      , {      280,      220,      230,      220,      280} /* TA,GC,A,T,G */
07867      , {      220,      160,      170,      160,      220} /* TA,GC,A,T,T */
07868      }
07869      }
07870      , { { {      250,      230,      250,      230,      240} /* TA,GC,C,E,E */
07871      , {      230,      210,      230,      210,      220} /* TA,GC,C,E,A */
07872      , {      220,      200,      220,      200,      210} /* TA,GC,C,E,C */
07873      , {      250,      230,      250,      230,      240} /* TA,GC,C,E,G */
07874      , {      240,      220,      240,      220,      230} /* TA,GC,C,E,T */
07875      }
07876      , { {      240,      220,      240,      220,      230} /* TA,GC,C,A,E */
07877      , {      170,      150,      170,      150,      160} /* TA,GC,C,A,A */
07878      , {      200,      180,      200,      180,      190} /* TA,GC,C,A,C */
07879      , {      180,      160,      180,      160,      170} /* TA,GC,C,A,G */
07880      , {      240,      220,      240,      220,      230} /* TA,GC,C,A,T */
07881      }
07882      , { {      220,      200,      220,      200,      210} /* TA,GC,C,C,E */
07883      , {      200,      180,      200,      180,      190} /* TA,GC,C,C,A */
07884      , {      220,      200,      220,      200,      210} /* TA,GC,C,C,C */
07885      , {      200,      180,      200,      180,      190} /* TA,GC,C,C,G */
07886      , {      210,      190,      210,      190,      200} /* TA,GC,C,C,T */
07887      }
07888      , { {      240,      220,      240,      220,      230} /* TA,GC,C,G,E */
07889      , {      180,      160,      180,      160,      170} /* TA,GC,C,G,A */
07890      , {      150,      130,      150,      130,      140} /* TA,GC,C,G,C */
07891      , {      180,      160,      180,      160,      170} /* TA,GC,C,G,G */
07892      , {      240,      220,      240,      220,      230} /* TA,GC,C,G,T */
07893      }
07894      , { {      250,      230,      250,      230,      240} /* TA,GC,C,T,E */
07895      , {      230,      210,      230,      210,      220} /* TA,GC,C,T,A */
07896      , {      210,      190,      210,      190,      200} /* TA,GC,C,T,C */
07897      , {      250,      230,      250,      230,      240} /* TA,GC,C,T,G */
07898      , {      190,      170,      190,      170,      180} /* TA,GC,C,T,T */

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07899    }
07900    }
07901    ,{{{ 280, 220, 280, 220, 280} /* TA,GC,G,E,E */
07902    ,{ 260, 200, 260, 200, 260} /* TA,GC,G,E,A */
07903    ,{ 250, 190, 250, 190, 250} /* TA,GC,G,E,C */
07904    ,{ 280, 220, 280, 220, 280} /* TA,GC,G,E,G */
07905    ,{ 270, 210, 270, 210, 270} /* TA,GC,G,E,T */
07906    }
07907    ,{{{ 270, 210, 270, 210, 270} /* TA,GC,G,A,E */
07908    ,{ 200, 140, 200, 140, 200} /* TA,GC,G,A,A */
07909    ,{ 230, 170, 230, 170, 230} /* TA,GC,G,A,C */
07910    ,{ 210, 150, 210, 150, 210} /* TA,GC,G,A,G */
07911    ,{ 270, 210, 270, 210, 270} /* TA,GC,G,A,T */
07912    }
07913    ,{{{ 250, 190, 250, 190, 250} /* TA,GC,G,C,E */
07914    ,{ 230, 170, 230, 170, 230} /* TA,GC,G,C,A */
07915    ,{ 250, 190, 250, 190, 250} /* TA,GC,G,C,C */
07916    ,{ 230, 170, 230, 170, 230} /* TA,GC,G,C,G */
07917    ,{ 240, 180, 240, 180, 240} /* TA,GC,G,C,T */
07918    }
07919    ,{{{ 270, 210, 270, 210, 270} /* TA,GC,G,G,E */
07920    ,{ 210, 150, 210, 150, 210} /* TA,GC,G,G,A */
07921    ,{ 180, 120, 180, 120, 180} /* TA,GC,G,G,C */
07922    ,{ 210, 150, 210, 150, 210} /* TA,GC,G,G,G */
07923    ,{ 270, 210, 270, 210, 270} /* TA,GC,G,G,T */
07924    }
07925    ,{{{ 280, 220, 280, 220, 280} /* TA,GC,G,T,E */
07926    ,{ 260, 200, 260, 200, 260} /* TA,GC,G,T,A */
07927    ,{ 240, 180, 240, 180, 240} /* TA,GC,G,T,C */
07928    ,{ 280, 220, 280, 220, 280} /* TA,GC,G,T,G */
07929    ,{ 220, 160, 220, 160, 220} /* TA,GC,G,T,T */
07930    }
07931    }
07932    ,{{{ 280, 280, 240, 270, 220} /* TA,GC,T,E,E */
07933    ,{ 260, 260, 220, 250, 200} /* TA,GC,T,E,A */
07934    ,{ 250, 250, 210, 240, 190} /* TA,GC,T,E,C */
07935    ,{ 280, 280, 240, 270, 220} /* TA,GC,T,E,G */
07936    ,{ 270, 270, 230, 260, 210} /* TA,GC,T,E,T */
07937    }
07938    ,{{{ 270, 270, 230, 260, 210} /* TA,GC,T,A,E */
07939    ,{ 200, 200, 160, 190, 140} /* TA,GC,T,A,A */
07940    ,{ 230, 230, 190, 220, 170} /* TA,GC,T,A,C */
07941    ,{ 210, 210, 170, 200, 150} /* TA,GC,T,A,G */
07942    ,{ 270, 270, 230, 260, 210} /* TA,GC,T,A,T */
07943    }
07944    ,{{{ 250, 250, 210, 240, 190} /* TA,GC,T,C,E */
07945    ,{ 230, 230, 190, 220, 170} /* TA,GC,T,C,A */
07946    ,{ 250, 250, 210, 240, 190} /* TA,GC,T,C,C */
07947    ,{ 230, 230, 190, 220, 170} /* TA,GC,T,C,G */
07948    ,{ 240, 240, 200, 230, 180} /* TA,GC,T,C,T */
07949    }
07950    ,{{{ 270, 270, 230, 260, 210} /* TA,GC,T,G,E */
07951    ,{ 210, 210, 170, 200, 150} /* TA,GC,T,G,A */
07952    ,{ 180, 180, 140, 170, 120} /* TA,GC,T,G,C */
07953    ,{ 210, 210, 170, 200, 150} /* TA,GC,T,G,G */
07954    ,{ 270, 270, 230, 260, 210} /* TA,GC,T,G,T */
07955    }
07956    ,{{{ 280, 280, 240, 270, 220} /* TA,GC,T,T,E */
07957    ,{ 260, 260, 220, 250, 200} /* TA,GC,T,T,A */
07958    ,{ 240, 240, 200, 230, 180} /* TA,GC,T,T,C */
07959    ,{ 280, 280, 240, 270, 220} /* TA,GC,T,T,G */
07960    ,{ 220, 220, 180, 210, 160} /* TA,GC,T,T,T */
07961    }
07962    }
07963    }
07964    ,{{{ 310, 310, 310, 300, 310} /* TA,GT,E,E,E */
07965    ,{ 290, 290, 290, 280, 290} /* TA,GT,E,E,A */
07966    ,{ 290, 290, 290, 280, 290} /* TA,GT,E,E,C */
07967    ,{ 310, 310, 310, 300, 310} /* TA,GT,E,E,G */
07968    ,{ 310, 310, 310, 300, 310} /* TA,GT,E,E,T */
07969    }
07970    ,{{{ 310, 310, 310, 300, 310} /* TA,GT,E,A,E */
07971    ,{ 260, 260, 260, 250, 260} /* TA,GT,E,A,A */
07972    ,{ 290, 290, 290, 280, 290} /* TA,GT,E,A,C */
07973    ,{ 260, 260, 260, 250, 260} /* TA,GT,E,A,G */
07974    ,{ 310, 310, 310, 300, 310} /* TA,GT,E,A,T */
07975    }
07976    ,{{{ 290, 290, 290, 280, 290} /* TA,GT,E,C,E */
07977    ,{ 290, 290, 290, 280, 290} /* TA,GT,E,C,A */
07978    ,{ 290, 290, 290, 280, 290} /* TA,GT,E,C,C */
07979    ,{ 270, 270, 270, 260, 270} /* TA,GT,E,C,G */
07980    ,{ 290, 290, 290, 280, 290} /* TA,GT,E,C,T */
07981    }
07982    ,{{{ 310, 310, 310, 300, 310} /* TA,GT,E,G,E */
07983    ,{ 260, 260, 260, 250, 260} /* TA,GT,E,G,A */
07984    ,{ 270, 270, 270, 260, 270} /* TA,GT,E,G,C */
07985    ,{ 260, 260, 260, 250, 260} /* TA,GT,E,G,G */

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07986     , {      310,      310,      310,      300,      310} /* TA,GT,E,G,T */
07987     }
07988     , {{      310,      310,      310,      300,      310} /* TA,GT,E,T,E */
07989     , {      290,      290,      290,      280,      290} /* TA,GT,E,T,A */
07990     , {      290,      290,      290,      280,      290} /* TA,GT,E,T,C */
07991     , {      310,      310,      310,      300,      310} /* TA,GT,E,T,G */
07992     , {      290,      290,      290,      280,      290} /* TA,GT,E,T,T */
07993     }
07994     }
07995     , {{{      310,      250,      260,      250,      310} /* TA,GT,A,E,E */
07996     , {      290,      230,      240,      230,      290} /* TA,GT,A,E,A */
07997     , {      290,      230,      240,      230,      290} /* TA,GT,A,E,C */
07998     , {      310,      250,      260,      250,      310} /* TA,GT,A,E,G */
07999     , {      310,      250,      260,      250,      310} /* TA,GT,A,E,T */
08000     }
08001     , {{      310,      250,      260,      250,      310} /* TA,GT,A,A,E */
08002     , {      260,      200,      210,      200,      260} /* TA,GT,A,A,A */
08003     , {      290,      230,      240,      230,      290} /* TA,GT,A,A,C */
08004     , {      260,      200,      210,      200,      260} /* TA,GT,A,A,G */
08005     , {      310,      250,      260,      250,      310} /* TA,GT,A,A,T */
08006     }
08007     , {{{      290,      230,      240,      230,      290} /* TA,GT,A,C,E */
08008     , {      290,      230,      240,      230,      290} /* TA,GT,A,C,A */
08009     , {      290,      230,      240,      230,      290} /* TA,GT,A,C,C */
08010     , {      270,      210,      220,      210,      270} /* TA,GT,A,C,G */
08011     , {      290,      230,      240,      230,      290} /* TA,GT,A,C,T */
08012     }
08013     , {{{      310,      250,      260,      250,      310} /* TA,GT,A,G,E */
08014     , {      260,      200,      210,      200,      260} /* TA,GT,A,G,A */
08015     , {      270,      210,      220,      210,      270} /* TA,GT,A,G,C */
08016     , {      260,      200,      210,      200,      260} /* TA,GT,A,G,G */
08017     , {      310,      250,      260,      250,      310} /* TA,GT,A,G,T */
08018     }
08019     , {{{      310,      250,      260,      250,      310} /* TA,GT,A,T,E */
08020     , {      290,      230,      240,      230,      290} /* TA,GT,A,T,A */
08021     , {      290,      230,      240,      230,      290} /* TA,GT,A,T,C */
08022     , {      310,      250,      260,      250,      310} /* TA,GT,A,T,G */
08023     , {      290,      230,      240,      230,      290} /* TA,GT,A,T,T */
08024     }
08025     }
08026     , {{{      280,      260,      280,      260,      270} /* TA,GT,C,E,E */
08027     , {      260,      240,      260,      240,      250} /* TA,GT,C,E,A */
08028     , {      260,      240,      260,      240,      250} /* TA,GT,C,E,C */
08029     , {      280,      260,      280,      260,      270} /* TA,GT,C,E,G */
08030     , {      280,      260,      280,      260,      270} /* TA,GT,C,E,T */
08031     }
08032     , {{{      280,      260,      280,      260,      270} /* TA,GT,C,A,E */
08033     , {      230,      210,      230,      210,      220} /* TA,GT,C,A,A */
08034     , {      260,      240,      260,      240,      250} /* TA,GT,C,A,C */
08035     , {      230,      210,      230,      210,      220} /* TA,GT,C,A,G */
08036     , {      280,      260,      280,      260,      270} /* TA,GT,C,A,T */
08037     }
08038     , {{{      260,      240,      260,      240,      250} /* TA,GT,C,C,E */
08039     , {      260,      240,      260,      240,      250} /* TA,GT,C,C,A */
08040     , {      260,      240,      260,      240,      250} /* TA,GT,C,C,C */
08041     , {      240,      220,      240,      220,      230} /* TA,GT,C,C,G */
08042     , {      260,      240,      260,      240,      250} /* TA,GT,C,C,T */
08043     }
08044     , {{{      280,      260,      280,      260,      270} /* TA,GT,C,G,E */
08045     , {      230,      210,      230,      210,      220} /* TA,GT,C,G,A */
08046     , {      240,      220,      240,      220,      230} /* TA,GT,C,G,C */
08047     , {      230,      210,      230,      210,      220} /* TA,GT,C,G,G */
08048     , {      280,      260,      280,      260,      270} /* TA,GT,C,G,T */
08049     }
08050     , {{{      280,      260,      280,      260,      270} /* TA,GT,C,T,E */
08051     , {      260,      240,      260,      240,      250} /* TA,GT,C,T,A */
08052     , {      260,      240,      260,      240,      250} /* TA,GT,C,T,C */
08053     , {      280,      260,      280,      260,      270} /* TA,GT,C,T,G */
08054     , {      260,      240,      260,      240,      250} /* TA,GT,C,T,T */
08055     }
08056     }
08057     , {{{      310,      250,      310,      250,      310} /* TA,GT,G,E,E */
08058     , {      290,      230,      290,      230,      290} /* TA,GT,G,E,A */
08059     , {      290,      230,      290,      230,      290} /* TA,GT,G,E,C */
08060     , {      310,      250,      310,      250,      310} /* TA,GT,G,E,G */
08061     , {      310,      250,      310,      250,      310} /* TA,GT,G,E,T */
08062     }
08063     , {{{      310,      250,      310,      250,      310} /* TA,GT,G,A,E */
08064     , {      260,      200,      260,      200,      260} /* TA,GT,G,A,A */
08065     , {      290,      230,      290,      230,      290} /* TA,GT,G,A,C */
08066     , {      260,      200,      260,      200,      260} /* TA,GT,G,A,G */
08067     , {      310,      250,      310,      250,      310} /* TA,GT,G,A,T */
08068     }
08069     , {{{      290,      230,      290,      230,      290} /* TA,GT,G,C,E */
08070     , {      290,      230,      290,      230,      290} /* TA,GT,G,C,A */
08071     , {      290,      230,      290,      230,      290} /* TA,GT,G,C,C */
08072     , {      270,      210,      270,      210,      270} /* TA,GT,G,C,G */

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08073      , {      290,      230,      290,      230,      290} /* TA,GT,G,C,T */
08074      }
08075      , {{      310,      250,      310,      250,      310} /* TA,GT,G,G,E */
08076      , {      260,      200,      260,      200,      260} /* TA,GT,G,G,A */
08077      , {      270,      210,      270,      210,      270} /* TA,GT,G,G,C */
08078      , {      260,      200,      260,      200,      260} /* TA,GT,G,G,G */
08079      , {      310,      250,      310,      250,      310} /* TA,GT,G,G,T */
08080      }
08081      , {{      310,      250,      310,      250,      310} /* TA,GT,G,T,E */
08082      , {      290,      230,      290,      230,      290} /* TA,GT,G,T,A */
08083      , {      290,      230,      290,      230,      290} /* TA,GT,G,T,C */
08084      , {      310,      250,      310,      250,      310} /* TA,GT,G,T,G */
08085      , {      290,      230,      290,      230,      290} /* TA,GT,G,T,T */
08086      }
08087      }
08088      , {{{      310,      310,      270,      300,      250} /* TA,GT,T,E,E */
08089      , {      290,      290,      250,      280,      230} /* TA,GT,T,E,A */
08090      , {      290,      290,      250,      280,      230} /* TA,GT,T,E,C */
08091      , {      310,      310,      270,      300,      250} /* TA,GT,T,E,G */
08092      , {      310,      310,      270,      300,      250} /* TA,GT,T,E,T */
08093      }
08094      , {{      310,      310,      270,      300,      250} /* TA,GT,T,A,E */
08095      , {      260,      260,      220,      250,      200} /* TA,GT,T,A,A */
08096      , {      290,      290,      250,      280,      230} /* TA,GT,T,A,C */
08097      , {      260,      260,      220,      250,      200} /* TA,GT,T,A,G */
08098      , {      310,      310,      270,      300,      250} /* TA,GT,T,A,T */
08099      }
08100      , {{      290,      290,      250,      280,      230} /* TA,GT,T,C,E */
08101      , {      290,      290,      250,      280,      230} /* TA,GT,T,C,A */
08102      , {      290,      290,      250,      280,      230} /* TA,GT,T,C,C */
08103      , {      270,      270,      230,      260,      210} /* TA,GT,T,C,G */
08104      , {      290,      290,      250,      280,      230} /* TA,GT,T,C,T */
08105      }
08106      , {{      310,      310,      270,      300,      250} /* TA,GT,T,G,E */
08107      , {      260,      260,      220,      250,      200} /* TA,GT,T,G,A */
08108      , {      270,      270,      230,      260,      210} /* TA,GT,T,G,C */
08109      , {      260,      260,      220,      250,      200} /* TA,GT,T,G,G */
08110      , {      310,      310,      270,      300,      250} /* TA,GT,T,G,T */
08111      }
08112      , {{      310,      310,      270,      300,      250} /* TA,GT,T,T,E */
08113      , {      290,      290,      250,      280,      230} /* TA,GT,T,T,A */
08114      , {      290,      290,      250,      280,      230} /* TA,GT,T,T,C */
08115      , {      310,      310,      270,      300,      250} /* TA,GT,T,T,G */
08116      , {      290,      290,      250,      280,      230} /* TA,GT,T,T,T */
08117      }
08118      }
08119      }
08120      , {{{      310,      310,      310,      300,      310} /* TA,TG,E,E,E */
08121      , {      310,      310,      310,      300,      310} /* TA,TG,E,E,A */
08122      , {      290,      290,      290,      280,      290} /* TA,TG,E,E,C */
08123      , {      310,      310,      310,      300,      310} /* TA,TG,E,E,G */
08124      , {      310,      310,      310,      300,      310} /* TA,TG,E,E,T */
08125      }
08126      , {{      310,      310,      310,      300,      310} /* TA,TG,E,A,E */
08127      , {      260,      260,      260,      250,      260} /* TA,TG,E,A,A */
08128      , {      290,      290,      290,      280,      290} /* TA,TG,E,A,C */
08129      , {      260,      260,      260,      250,      260} /* TA,TG,E,A,G */
08130      , {      310,      310,      310,      300,      310} /* TA,TG,E,A,T */
08131      }
08132      , {{      290,      290,      290,      280,      290} /* TA,TG,E,C,E */
08133      , {      290,      290,      290,      280,      290} /* TA,TG,E,C,A */
08134      , {      290,      290,      290,      280,      290} /* TA,TG,E,C,C */
08135      , {      260,      260,      260,      250,      260} /* TA,TG,E,C,G */
08136      , {      290,      290,      290,      280,      290} /* TA,TG,E,C,T */
08137      }
08138      , {{      310,      310,      310,      300,      310} /* TA,TG,E,G,E */
08139      , {      260,      260,      260,      250,      260} /* TA,TG,E,G,A */
08140      , {      280,      280,      280,      270,      280} /* TA,TG,E,G,C */
08141      , {      260,      260,      260,      250,      260} /* TA,TG,E,G,G */
08142      , {      310,      310,      310,      300,      310} /* TA,TG,E,G,T */
08143      }
08144      , {{      310,      310,      310,      300,      310} /* TA,TG,E,T,E */
08145      , {      310,      310,      310,      300,      310} /* TA,TG,E,T,A */
08146      , {      290,      290,      290,      280,      290} /* TA,TG,E,T,C */
08147      , {      310,      310,      310,      300,      310} /* TA,TG,E,T,G */
08148      , {      290,      290,      290,      280,      290} /* TA,TG,E,T,T */
08149      }
08150      }
08151      , {{{      310,      250,      260,      250,      310} /* TA,TG,A,E,E */
08152      , {      310,      250,      260,      250,      310} /* TA,TG,A,E,A */
08153      , {      290,      230,      240,      230,      290} /* TA,TG,A,E,C */
08154      , {      310,      250,      260,      250,      310} /* TA,TG,A,E,G */
08155      , {      310,      250,      260,      250,      310} /* TA,TG,A,E,T */
08156      }
08157      , {{      310,      250,      260,      250,      310} /* TA,TG,A,A,E */
08158      , {      260,      200,      210,      200,      260} /* TA,TG,A,A,A */
08159      , {      290,      230,      240,      230,      290} /* TA,TG,A,A,C */

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08160      , {      260,      200,      210,      200,      260} /* TA, TG, A, A, G */
08161      , {      310,      250,      260,      250,      310} /* TA, TG, A, A, T */
08162      }
08163      , { {      290,      230,      240,      230,      290} /* TA, TG, A, C, E */
08164      , {      290,      230,      240,      230,      290} /* TA, TG, A, C, A */
08165      , {      290,      230,      240,      230,      290} /* TA, TG, A, C, C */
08166      , {      260,      200,      210,      200,      260} /* TA, TG, A, C, G */
08167      , {      290,      230,      240,      230,      290} /* TA, TG, A, C, T */
08168      }
08169      , { {      310,      250,      260,      250,      310} /* TA, TG, A, G, E */
08170      , {      260,      200,      210,      200,      260} /* TA, TG, A, G, A */
08171      , {      280,      220,      230,      220,      280} /* TA, TG, A, G, C */
08172      , {      260,      200,      210,      200,      260} /* TA, TG, A, G, G */
08173      , {      310,      250,      260,      250,      310} /* TA, TG, A, G, T */
08174      }
08175      , { {      310,      250,      260,      250,      310} /* TA, TG, A, T, E */
08176      , {      310,      250,      260,      250,      310} /* TA, TG, A, T, A */
08177      , {      290,      230,      240,      230,      290} /* TA, TG, A, T, C */
08178      , {      310,      250,      260,      250,      310} /* TA, TG, A, T, G */
08179      , {      290,      230,      240,      230,      290} /* TA, TG, A, T, T */
08180      }
08181      }
08182      , { { {      280,      260,      280,      260,      270} /* TA, TG, C, E, E */
08183      , {      280,      260,      280,      260,      270} /* TA, TG, C, E, A */
08184      , {      260,      240,      260,      240,      250} /* TA, TG, C, E, C */
08185      , {      280,      260,      280,      260,      270} /* TA, TG, C, E, G */
08186      , {      280,      260,      280,      260,      270} /* TA, TG, C, E, T */
08187      }
08188      , { {      280,      260,      280,      260,      270} /* TA, TG, C, A, E */
08189      , {      230,      210,      230,      210,      220} /* TA, TG, C, A, A */
08190      , {      260,      240,      260,      240,      250} /* TA, TG, C, A, C */
08191      , {      230,      210,      230,      210,      220} /* TA, TG, C, A, G */
08192      , {      280,      260,      280,      260,      270} /* TA, TG, C, A, T */
08193      }
08194      , { {      260,      240,      260,      240,      250} /* TA, TG, C, C, E */
08195      , {      260,      240,      260,      240,      250} /* TA, TG, C, C, A */
08196      , {      260,      240,      260,      240,      250} /* TA, TG, C, C, C */
08197      , {      230,      210,      230,      210,      220} /* TA, TG, C, C, G */
08198      , {      260,      240,      260,      240,      250} /* TA, TG, C, C, T */
08199      }
08200      , { {      280,      260,      280,      260,      270} /* TA, TG, C, G, E */
08201      , {      230,      210,      230,      210,      220} /* TA, TG, C, G, A */
08202      , {      250,      230,      250,      230,      240} /* TA, TG, C, G, C */
08203      , {      230,      210,      230,      210,      220} /* TA, TG, C, G, G */
08204      , {      280,      260,      280,      260,      270} /* TA, TG, C, G, T */
08205      }
08206      , { {      280,      260,      280,      260,      270} /* TA, TG, C, T, E */
08207      , {      280,      260,      280,      260,      270} /* TA, TG, C, T, A */
08208      , {      260,      240,      260,      240,      250} /* TA, TG, C, T, C */
08209      , {      280,      260,      280,      260,      270} /* TA, TG, C, T, G */
08210      , {      260,      240,      260,      240,      250} /* TA, TG, C, T, T */
08211      }
08212      }
08213      , { { {      310,      250,      310,      250,      310} /* TA, TG, G, E, E */
08214      , {      310,      250,      310,      250,      310} /* TA, TG, G, E, A */
08215      , {      290,      230,      290,      230,      290} /* TA, TG, G, E, C */
08216      , {      310,      250,      310,      250,      310} /* TA, TG, G, E, G */
08217      , {      310,      250,      310,      250,      310} /* TA, TG, G, E, T */
08218      }
08219      , { {      310,      250,      310,      250,      310} /* TA, TG, G, A, E */
08220      , {      260,      200,      260,      200,      260} /* TA, TG, G, A, A */
08221      , {      290,      230,      290,      230,      290} /* TA, TG, G, A, C */
08222      , {      260,      200,      260,      200,      260} /* TA, TG, G, A, G */
08223      , {      310,      250,      310,      250,      310} /* TA, TG, G, A, T */
08224      }
08225      , { {      290,      230,      290,      230,      290} /* TA, TG, G, C, E */
08226      , {      290,      230,      290,      230,      290} /* TA, TG, G, C, A */
08227      , {      290,      230,      290,      230,      290} /* TA, TG, G, C, C */
08228      , {      260,      200,      260,      200,      260} /* TA, TG, G, C, G */
08229      , {      290,      230,      290,      230,      290} /* TA, TG, G, C, T */
08230      }
08231      , { {      310,      250,      310,      250,      310} /* TA, TG, G, G, E */
08232      , {      260,      200,      260,      200,      260} /* TA, TG, G, G, A */
08233      , {      280,      220,      280,      220,      280} /* TA, TG, G, G, C */
08234      , {      260,      200,      260,      200,      260} /* TA, TG, G, G, G */
08235      , {      310,      250,      310,      250,      310} /* TA, TG, G, G, T */
08236      }
08237      , { {      310,      250,      310,      250,      310} /* TA, TG, G, T, E */
08238      , {      310,      250,      310,      250,      310} /* TA, TG, G, T, A */
08239      , {      290,      230,      290,      230,      290} /* TA, TG, G, T, C */
08240      , {      310,      250,      310,      250,      310} /* TA, TG, G, T, G */
08241      , {      290,      230,      290,      230,      290} /* TA, TG, G, T, T */
08242      }
08243      }
08244      , { { {      310,      310,      270,      300,      250} /* TA, TG, T, E, E */
08245      , {      310,      310,      270,      300,      250} /* TA, TG, T, E, A */
08246      , {      290,      290,      250,      280,      230} /* TA, TG, T, E, C */

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08247      , {      310,      310,      270,      300,      250} /* TA, TG, T, E, G */
08248      , {      310,      310,      270,      300,      250} /* TA, TG, T, E, T */
08249      }
08250      , {{      310,      310,      270,      300,      250} /* TA, TG, T, A, E */
08251      , {      260,      260,      220,      250,      200} /* TA, TG, T, A, A */
08252      , {      290,      290,      250,      280,      230} /* TA, TG, T, A, C */
08253      , {      260,      260,      220,      250,      200} /* TA, TG, T, A, G */
08254      , {      310,      310,      270,      300,      250} /* TA, TG, T, A, T */
08255      }
08256      , {{      290,      290,      250,      280,      230} /* TA, TG, T, C, E */
08257      , {      290,      290,      250,      280,      230} /* TA, TG, T, C, A */
08258      , {      290,      290,      250,      280,      230} /* TA, TG, T, C, C */
08259      , {      260,      260,      220,      250,      200} /* TA, TG, T, C, G */
08260      , {      290,      290,      250,      280,      230} /* TA, TG, T, C, T */
08261      }
08262      , {{      310,      310,      270,      300,      250} /* TA, TG, T, G, E */
08263      , {      260,      260,      220,      250,      200} /* TA, TG, T, G, A */
08264      , {      280,      280,      240,      270,      220} /* TA, TG, T, G, C */
08265      , {      260,      260,      220,      250,      200} /* TA, TG, T, G, G */
08266      , {      310,      310,      270,      300,      250} /* TA, TG, T, G, T */
08267      }
08268      , {{      310,      310,      270,      300,      250} /* TA, TG, T, T, E */
08269      , {      310,      310,      270,      300,      250} /* TA, TG, T, T, A */
08270      , {      290,      290,      250,      280,      230} /* TA, TG, T, T, C */
08271      , {      310,      310,      270,      300,      250} /* TA, TG, T, T, G */
08272      , {      290,      290,      250,      280,      230} /* TA, TG, T, T, T */
08273      }
08274      }
08275      }
08276      , {{{      310,      310,      310,      300,      310} /* TA, AT, E, E, E */
08277      , {      310,      310,      310,      300,      310} /* TA, AT, E, E, A */
08278      , {      280,      280,      280,      270,      280} /* TA, AT, E, E, C */
08279      , {      310,      310,      310,      300,      310} /* TA, AT, E, E, G */
08280      , {      310,      310,      310,      300,      310} /* TA, AT, E, E, T */
08281      }
08282      , {{      310,      310,      310,      300,      310} /* TA, AT, E, A, E */
08283      , {      240,      240,      240,      230,      240} /* TA, AT, E, A, A */
08284      , {      260,      260,      260,      250,      260} /* TA, AT, E, A, C */
08285      , {      250,      250,      250,      240,      250} /* TA, AT, E, A, G */
08286      , {      310,      310,      310,      300,      310} /* TA, AT, E, A, T */
08287      }
08288      , {{      290,      290,      290,      280,      290} /* TA, AT, E, C, E */
08289      , {      260,      260,      260,      250,      260} /* TA, AT, E, C, A */
08290      , {      280,      280,      280,      270,      280} /* TA, AT, E, C, C */
08291      , {      290,      290,      290,      280,      290} /* TA, AT, E, C, G */
08292      , {      270,      270,      270,      260,      270} /* TA, AT, E, C, T */
08293      }
08294      , {{      310,      310,      310,      300,      310} /* TA, AT, E, G, E */
08295      , {      250,      250,      250,      240,      250} /* TA, AT, E, G, A */
08296      , {      270,      270,      270,      260,      270} /* TA, AT, E, G, C */
08297      , {      250,      250,      250,      240,      250} /* TA, AT, E, G, G */
08298      , {      310,      310,      310,      300,      310} /* TA, AT, E, G, T */
08299      }
08300      , {{{      310,      310,      310,      300,      310} /* TA, AT, E, T, E */
08301      , {      310,      310,      310,      300,      310} /* TA, AT, E, T, A */
08302      , {      270,      270,      270,      260,      270} /* TA, AT, E, T, C */
08303      , {      310,      310,      310,      300,      310} /* TA, AT, E, T, G */
08304      , {      250,      250,      250,      240,      250} /* TA, AT, E, T, T */
08305      }
08306      }
08307      , {{{      310,      250,      260,      250,      310} /* TA, AT, A, E, E */
08308      , {      310,      250,      260,      250,      310} /* TA, AT, A, E, A */
08309      , {      280,      220,      230,      220,      280} /* TA, AT, A, E, C */
08310      , {      310,      250,      260,      250,      310} /* TA, AT, A, E, G */
08311      , {      310,      250,      260,      250,      310} /* TA, AT, A, E, T */
08312      }
08313      , {{      310,      250,      260,      250,      310} /* TA, AT, A, A, E */
08314      , {      240,      180,      190,      180,      240} /* TA, AT, A, A, A */
08315      , {      260,      200,      210,      200,      260} /* TA, AT, A, A, C */
08316      , {      250,      190,      200,      190,      250} /* TA, AT, A, A, G */
08317      , {      310,      250,      260,      250,      310} /* TA, AT, A, A, T */
08318      }
08319      , {{      290,      230,      240,      230,      290} /* TA, AT, A, C, E */
08320      , {      260,      200,      210,      200,      260} /* TA, AT, A, C, A */
08321      , {      280,      220,      230,      220,      280} /* TA, AT, A, C, C */
08322      , {      290,      230,      240,      230,      290} /* TA, AT, A, C, G */
08323      , {      270,      210,      220,      210,      270} /* TA, AT, A, C, T */
08324      }
08325      , {{      310,      250,      260,      250,      310} /* TA, AT, A, G, E */
08326      , {      250,      190,      200,      190,      250} /* TA, AT, A, G, A */
08327      , {      270,      210,      220,      210,      270} /* TA, AT, A, G, C */
08328      , {      250,      190,      200,      190,      250} /* TA, AT, A, G, G */
08329      , {      310,      250,      260,      250,      310} /* TA, AT, A, G, T */
08330      }
08331      , {{{      310,      250,      260,      250,      310} /* TA, AT, A, T, E */
08332      , {      310,      250,      260,      250,      310} /* TA, AT, A, T, A */
08333      , {      270,      210,      220,      210,      270} /* TA, AT, A, T, C */

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08334      , {      310,      250,      260,      250,      310} /* TA,AT,A,T,G */
08335      , {      250,      190,      200,      190,      250} /* TA,AT,A,T,T */
08336      }
08337    }
08338  , {{{      280,      260,      280,      260,      270} /* TA,AT,C,E,E */
08339  , {      280,      260,      280,      260,      270} /* TA,AT,C,E,A */
08340  , {      250,      230,      250,      230,      240} /* TA,AT,C,E,C */
08341  , {      280,      260,      280,      260,      270} /* TA,AT,C,E,G */
08342  , {      280,      260,      280,      260,      270} /* TA,AT,C,E,T */
08343  }
08344  , {{{      280,      260,      280,      260,      270} /* TA,AT,C,A,E */
08345  , {      210,      190,      210,      190,      200} /* TA,AT,C,A,A */
08346  , {      230,      210,      230,      210,      220} /* TA,AT,C,A,C */
08347  , {      220,      200,      220,      200,      210} /* TA,AT,C,A,G */
08348  , {      280,      260,      280,      260,      270} /* TA,AT,C,A,T */
08349  }
08350  , {{{      260,      240,      260,      240,      250} /* TA,AT,C,C,E */
08351  , {      230,      210,      230,      210,      220} /* TA,AT,C,C,A */
08352  , {      250,      230,      250,      230,      240} /* TA,AT,C,C,C */
08353  , {      260,      240,      260,      240,      250} /* TA,AT,C,C,G */
08354  , {      240,      220,      240,      220,      230} /* TA,AT,C,C,T */
08355  }
08356  , {{{      280,      260,      280,      260,      270} /* TA,AT,C,G,E */
08357  , {      220,      200,      220,      200,      210} /* TA,AT,C,G,A */
08358  , {      240,      220,      240,      220,      230} /* TA,AT,C,G,C */
08359  , {      220,      200,      220,      200,      210} /* TA,AT,C,G,G */
08360  , {      280,      260,      280,      260,      270} /* TA,AT,C,G,T */
08361  }
08362  , {{{      280,      260,      280,      260,      270} /* TA,AT,C,T,E */
08363  , {      280,      260,      280,      260,      270} /* TA,AT,C,T,A */
08364  , {      240,      220,      240,      220,      230} /* TA,AT,C,T,C */
08365  , {      280,      260,      280,      260,      270} /* TA,AT,C,T,G */
08366  , {      220,      200,      220,      200,      210} /* TA,AT,C,T,T */
08367  }
08368  }
08369  , {{{      310,      250,      310,      250,      310} /* TA,AT,G,E,E */
08370  , {      310,      250,      310,      250,      310} /* TA,AT,G,E,A */
08371  , {      280,      220,      280,      220,      280} /* TA,AT,G,E,C */
08372  , {      310,      250,      310,      250,      310} /* TA,AT,G,E,G */
08373  , {      310,      250,      310,      250,      310} /* TA,AT,G,E,T */
08374  }
08375  , {{{      310,      250,      310,      250,      310} /* TA,AT,G,A,E */
08376  , {      240,      180,      240,      180,      240} /* TA,AT,G,A,A */
08377  , {      260,      200,      260,      200,      260} /* TA,AT,G,A,C */
08378  , {      250,      190,      250,      190,      250} /* TA,AT,G,A,G */
08379  , {      310,      250,      310,      250,      310} /* TA,AT,G,A,T */
08380  }
08381  , {{{      290,      230,      290,      230,      290} /* TA,AT,G,C,E */
08382  , {      260,      200,      260,      200,      260} /* TA,AT,G,C,A */
08383  , {      280,      220,      280,      220,      280} /* TA,AT,G,C,C */
08384  , {      290,      230,      290,      230,      290} /* TA,AT,G,C,G */
08385  , {      270,      210,      270,      210,      270} /* TA,AT,G,C,T */
08386  }
08387  , {{{      310,      250,      310,      250,      310} /* TA,AT,G,G,E */
08388  , {      250,      190,      250,      190,      250} /* TA,AT,G,G,A */
08389  , {      270,      210,      270,      210,      270} /* TA,AT,G,G,C */
08390  , {      250,      190,      250,      190,      250} /* TA,AT,G,G,G */
08391  , {      310,      250,      310,      250,      310} /* TA,AT,G,G,T */
08392  }
08393  , {{{      310,      250,      310,      250,      310} /* TA,AT,G,T,E */
08394  , {      310,      250,      310,      250,      310} /* TA,AT,G,T,A */
08395  , {      270,      210,      270,      210,      270} /* TA,AT,G,T,C */
08396  , {      310,      250,      310,      250,      310} /* TA,AT,G,T,G */
08397  , {      250,      190,      250,      190,      250} /* TA,AT,G,T,T */
08398  }
08399  }
08400  , {{{      310,      310,      270,      300,      250} /* TA,AT,T,E,E */
08401  , {      310,      310,      270,      300,      250} /* TA,AT,T,E,A */
08402  , {      280,      280,      240,      270,      220} /* TA,AT,T,E,C */
08403  , {      310,      310,      270,      300,      250} /* TA,AT,T,E,G */
08404  , {      310,      310,      270,      300,      250} /* TA,AT,T,E,T */
08405  }
08406  , {{{      310,      310,      270,      300,      250} /* TA,AT,T,A,E */
08407  , {      240,      240,      200,      230,      180} /* TA,AT,T,A,A */
08408  , {      260,      260,      220,      250,      200} /* TA,AT,T,A,C */
08409  , {      250,      250,      210,      240,      190} /* TA,AT,T,A,G */
08410  , {      310,      310,      270,      300,      250} /* TA,AT,T,A,T */
08411  }
08412  , {{{      290,      290,      250,      280,      230} /* TA,AT,T,C,E */
08413  , {      260,      260,      220,      250,      200} /* TA,AT,T,C,A */
08414  , {      280,      280,      240,      270,      220} /* TA,AT,T,C,C */
08415  , {      290,      290,      250,      280,      230} /* TA,AT,T,C,G */
08416  , {      270,      270,      230,      260,      210} /* TA,AT,T,C,T */
08417  }
08418  , {{{      310,      310,      270,      300,      250} /* TA,AT,T,G,E */
08419  , {      250,      250,      210,      240,      190} /* TA,AT,T,G,A */
08420  , {      270,      270,      230,      260,      210} /* TA,AT,T,G,C */

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08421      , {      250,      250,      210,      240,      190} /* TA,AT,T,G,G */
08422      , {      310,      310,      270,      300,      250} /* TA,AT,T,G,T */
08423      }
08424      , {{      310,      310,      270,      300,      250} /* TA,AT,T,T,E */
08425      , {      310,      310,      270,      300,      250} /* TA,AT,T,T,A */
08426      , {      270,      270,      230,      260,      210} /* TA,AT,T,T,C */
08427      , {      310,      310,      270,      300,      250} /* TA,AT,T,T,G */
08428      , {      250,      250,      210,      240,      190} /* TA,AT,T,T,T */
08429      }
08430      }
08431      }
08432      , {{{      310,      310,      310,      300,      310} /* TA,TA,E,E,E */
08433      , {      310,      310,      310,      300,      310} /* TA,TA,E,E,A */
08434      , {      280,      280,      280,      270,      280} /* TA,TA,E,E,C */
08435      , {      310,      310,      310,      300,      310} /* TA,TA,E,E,G */
08436      , {      310,      310,      310,      300,      310} /* TA,TA,E,E,T */
08437      }
08438      , {{      310,      310,      310,      300,      310} /* TA,TA,E,A,E */
08439      , {      250,      250,      250,      240,      250} /* TA,TA,E,A,A */
08440      , {      260,      260,      260,      250,      260} /* TA,TA,E,A,C */
08441      , {      250,      250,      250,      240,      250} /* TA,TA,E,A,G */
08442      , {      310,      310,      310,      300,      310} /* TA,TA,E,A,T */
08443      }
08444      , {{      310,      310,      310,      300,      310} /* TA,TA,E,C,E */
08445      , {      260,      260,      260,      250,      260} /* TA,TA,E,C,A */
08446      , {      280,      280,      280,      270,      280} /* TA,TA,E,C,C */
08447      , {      310,      310,      310,      300,      310} /* TA,TA,E,C,G */
08448      , {      270,      270,      270,      260,      270} /* TA,TA,E,C,T */
08449      }
08450      , {{      300,      300,      300,      290,      300} /* TA,TA,E,G,E */
08451      , {      250,      250,      250,      240,      250} /* TA,TA,E,G,A */
08452      , {      260,      260,      260,      250,      260} /* TA,TA,E,G,C */
08453      , {      250,      250,      250,      240,      250} /* TA,TA,E,G,G */
08454      , {      300,      300,      300,      290,      300} /* TA,TA,E,G,T */
08455      }
08456      , {{      310,      310,      310,      300,      310} /* TA,TA,E,T,E */
08457      , {      310,      310,      310,      300,      310} /* TA,TA,E,T,A */
08458      , {      270,      270,      270,      260,      270} /* TA,TA,E,T,C */
08459      , {      310,      310,      310,      300,      310} /* TA,TA,E,T,G */
08460      , {      250,      250,      250,      240,      250} /* TA,TA,E,T,T */
08461      }
08462      }
08463      , {{{      310,      250,      260,      250,      310} /* TA,TA,A,E,E */
08464      , {      310,      250,      260,      250,      310} /* TA,TA,A,E,A */
08465      , {      280,      220,      230,      220,      280} /* TA,TA,A,E,C */
08466      , {      310,      250,      260,      250,      310} /* TA,TA,A,E,G */
08467      , {      310,      250,      260,      250,      310} /* TA,TA,A,E,T */
08468      }
08469      , {{      310,      250,      260,      250,      310} /* TA,TA,A,A,E */
08470      , {      250,      190,      200,      190,      250} /* TA,TA,A,A,A */
08471      , {      260,      200,      210,      200,      260} /* TA,TA,A,A,C */
08472      , {      250,      190,      200,      190,      250} /* TA,TA,A,A,G */
08473      , {      310,      250,      260,      250,      310} /* TA,TA,A,A,T */
08474      }
08475      , {{      310,      250,      260,      250,      310} /* TA,TA,A,C,E */
08476      , {      260,      200,      210,      200,      260} /* TA,TA,A,C,A */
08477      , {      280,      220,      230,      220,      280} /* TA,TA,A,C,C */
08478      , {      310,      250,      260,      250,      310} /* TA,TA,A,C,G */
08479      , {      270,      210,      220,      210,      270} /* TA,TA,A,C,T */
08480      }
08481      , {{      300,      240,      250,      240,      300} /* TA,TA,A,G,E */
08482      , {      250,      190,      200,      190,      250} /* TA,TA,A,G,A */
08483      , {      260,      200,      210,      200,      260} /* TA,TA,A,G,C */
08484      , {      250,      190,      200,      190,      250} /* TA,TA,A,G,G */
08485      , {      300,      240,      250,      240,      300} /* TA,TA,A,G,T */
08486      }
08487      , {{      310,      250,      260,      250,      310} /* TA,TA,A,T,E */
08488      , {      310,      250,      260,      250,      310} /* TA,TA,A,T,A */
08489      , {      270,      210,      220,      210,      270} /* TA,TA,A,T,C */
08490      , {      310,      250,      260,      250,      310} /* TA,TA,A,T,G */
08491      , {      250,      190,      200,      190,      250} /* TA,TA,A,T,T */
08492      }
08493      }
08494      , {{{      280,      260,      280,      260,      270} /* TA,TA,C,E,E */
08495      , {      280,      260,      280,      260,      270} /* TA,TA,C,E,A */
08496      , {      250,      230,      250,      230,      240} /* TA,TA,C,E,C */
08497      , {      280,      260,      280,      260,      270} /* TA,TA,C,E,G */
08498      , {      280,      260,      280,      260,      270} /* TA,TA,C,E,T */
08499      }
08500      , {{      280,      260,      280,      260,      270} /* TA,TA,C,A,E */
08501      , {      220,      200,      220,      200,      210} /* TA,TA,C,A,A */
08502      , {      230,      210,      230,      210,      220} /* TA,TA,C,A,C */
08503      , {      220,      200,      220,      200,      210} /* TA,TA,C,A,G */
08504      , {      280,      260,      280,      260,      270} /* TA,TA,C,A,T */
08505      }
08506      , {{      280,      260,      280,      260,      270} /* TA,TA,C,C,E */
08507      , {      230,      210,      230,      210,      220} /* TA,TA,C,C,A */

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08508      , {      250,      230,      250,      230,      240} /* TA,TA,C,C,C */
08509      , {      280,      260,      280,      260,      270} /* TA,TA,C,C,G */
08510      , {      240,      220,      240,      220,      230} /* TA,TA,C,C,T */
08511      }
08512      , { {      270,      250,      270,      250,      260} /* TA,TA,C,G,E */
08513      , {      220,      200,      220,      200,      210} /* TA,TA,C,G,A */
08514      , {      230,      210,      230,      210,      220} /* TA,TA,C,G,C */
08515      , {      220,      200,      220,      200,      210} /* TA,TA,C,G,G */
08516      , {      270,      250,      270,      250,      260} /* TA,TA,C,G,T */
08517      }
08518      , { {      280,      260,      280,      260,      270} /* TA,TA,C,T,E */
08519      , {      280,      260,      280,      260,      270} /* TA,TA,C,T,A */
08520      , {      240,      220,      240,      220,      230} /* TA,TA,C,T,C */
08521      , {      280,      260,      280,      260,      270} /* TA,TA,C,T,G */
08522      , {      220,      200,      220,      200,      210} /* TA,TA,C,T,T */
08523      }
08524      }
08525      , { { {      310,      250,      310,      250,      310} /* TA,TA,G,E,E */
08526      , {      310,      250,      310,      250,      310} /* TA,TA,G,E,A */
08527      , {      280,      220,      280,      220,      280} /* TA,TA,G,E,C */
08528      , {      310,      250,      310,      250,      310} /* TA,TA,G,E,G */
08529      , {      310,      250,      310,      250,      310} /* TA,TA,G,E,T */
08530      }
08531      , { {      310,      250,      310,      250,      310} /* TA,TA,G,A,E */
08532      , {      250,      190,      250,      190,      250} /* TA,TA,G,A,A */
08533      , {      260,      200,      260,      200,      260} /* TA,TA,G,A,C */
08534      , {      250,      190,      250,      190,      250} /* TA,TA,G,A,G */
08535      , {      310,      250,      310,      250,      310} /* TA,TA,G,A,T */
08536      }
08537      , { {      310,      250,      310,      250,      310} /* TA,TA,G,C,E */
08538      , {      260,      200,      260,      200,      260} /* TA,TA,G,C,A */
08539      , {      280,      220,      280,      220,      280} /* TA,TA,G,C,C */
08540      , {      310,      250,      310,      250,      310} /* TA,TA,G,C,G */
08541      , {      270,      210,      270,      210,      270} /* TA,TA,G,C,T */
08542      }
08543      , { {      300,      240,      300,      240,      300} /* TA,TA,G,G,E */
08544      , {      250,      190,      250,      190,      250} /* TA,TA,G,G,A */
08545      , {      260,      200,      260,      200,      260} /* TA,TA,G,G,C */
08546      , {      250,      190,      250,      190,      250} /* TA,TA,G,G,G */
08547      , {      300,      240,      300,      240,      300} /* TA,TA,G,G,T */
08548      }
08549      , { {      310,      250,      310,      250,      310} /* TA,TA,G,T,E */
08550      , {      310,      250,      310,      250,      310} /* TA,TA,G,T,A */
08551      , {      270,      210,      270,      210,      270} /* TA,TA,G,T,C */
08552      , {      310,      250,      310,      250,      310} /* TA,TA,G,T,G */
08553      , {      250,      190,      250,      190,      250} /* TA,TA,G,T,T */
08554      }
08555      }
08556      , { { {      310,      310,      270,      300,      250} /* TA,TA,T,E,E */
08557      , {      310,      310,      270,      300,      250} /* TA,TA,T,E,A */
08558      , {      280,      280,      240,      270,      220} /* TA,TA,T,E,C */
08559      , {      310,      310,      270,      300,      250} /* TA,TA,T,E,G */
08560      , {      310,      310,      270,      300,      250} /* TA,TA,T,E,T */
08561      }
08562      , { {      310,      310,      270,      300,      250} /* TA,TA,T,A,E */
08563      , {      250,      250,      210,      240,      190} /* TA,TA,T,A,A */
08564      , {      260,      260,      220,      250,      200} /* TA,TA,T,A,C */
08565      , {      250,      250,      210,      240,      190} /* TA,TA,T,A,G */
08566      , {      310,      310,      270,      300,      250} /* TA,TA,T,A,T */
08567      }
08568      , { {      310,      310,      270,      300,      250} /* TA,TA,T,C,E */
08569      , {      260,      260,      220,      250,      200} /* TA,TA,T,C,A */
08570      , {      280,      280,      240,      270,      220} /* TA,TA,T,C,C */
08571      , {      310,      310,      270,      300,      250} /* TA,TA,T,C,G */
08572      , {      270,      270,      230,      260,      210} /* TA,TA,T,C,T */
08573      }
08574      , { {      300,      300,      260,      290,      240} /* TA,TA,T,G,E */
08575      , {      250,      250,      210,      240,      190} /* TA,TA,T,G,A */
08576      , {      260,      260,      220,      250,      200} /* TA,TA,T,G,C */
08577      , {      250,      250,      210,      240,      190} /* TA,TA,T,G,G */
08578      , {      300,      300,      260,      290,      240} /* TA,TA,T,G,T */
08579      }
08580      , { {      310,      310,      270,      300,      250} /* TA,TA,T,T,E */
08581      , {      310,      310,      270,      300,      250} /* TA,TA,T,T,A */
08582      , {      270,      270,      230,      260,      210} /* TA,TA,T,T,C */
08583      , {      310,      310,      270,      300,      250} /* TA,TA,T,T,G */
08584      , {      250,      250,      210,      240,      190} /* TA,TA,T,T,T */
08585      }
08586      }
08587      }
08588      , { { { {      310,      310,      310,      300,      310} /* TA,NN,E,E,E */
08589      , {      310,      310,      310,      300,      310} /* TA,NN,E,E,A */
08590      , {      290,      290,      290,      280,      290} /* TA,NN,E,E,C */
08591      , {      310,      310,      310,      300,      310} /* TA,NN,E,E,G */
08592      , {      310,      310,      310,      300,      310} /* TA,NN,E,E,T */
08593      }
08594      , { {      310,      310,      310,      300,      310} /* TA,NN,E,A,E */

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08595      , {      260,      260,      260,      250,      260} /* TA, NN, E, A, A */
08596      , {      290,      290,      290,      280,      290} /* TA, NN, E, A, C */
08597      , {      260,      260,      260,      250,      260} /* TA, NN, E, A, G */
08598      , {      310,      310,      310,      300,      310} /* TA, NN, E, A, T */
08599      }
08600      , { {      310,      310,      310,      300,      310} /* TA, NN, E, C, E */
08601      , {      290,      290,      290,      280,      290} /* TA, NN, E, C, A */
08602      , {      290,      290,      290,      280,      290} /* TA, NN, E, C, C */
08603      , {      310,      310,      310,      300,      310} /* TA, NN, E, C, G */
08604      , {      290,      290,      290,      280,      290} /* TA, NN, E, C, T */
08605      }
08606      , { {      310,      310,      310,      300,      310} /* TA, NN, E, G, E */
08607      , {      260,      260,      260,      250,      260} /* TA, NN, E, G, A */
08608      , {      280,      280,      280,      270,      280} /* TA, NN, E, G, C */
08609      , {      260,      260,      260,      250,      260} /* TA, NN, E, G, G */
08610      , {      310,      310,      310,      300,      310} /* TA, NN, E, G, T */
08611      }
08612      , { {      310,      310,      310,      300,      310} /* TA, NN, E, T, E */
08613      , {      310,      310,      310,      300,      310} /* TA, NN, E, T, A */
08614      , {      290,      290,      290,      280,      290} /* TA, NN, E, T, C */
08615      , {      310,      310,      310,      300,      310} /* TA, NN, E, T, G */
08616      , {      290,      290,      290,      280,      290} /* TA, NN, E, T, T */
08617      }
08618      }
08619      , { { {      310,      250,      260,      250,      310} /* TA, NN, A, E, E */
08620      , {      310,      250,      260,      250,      310} /* TA, NN, A, E, A */
08621      , {      290,      230,      240,      230,      290} /* TA, NN, A, E, C */
08622      , {      310,      250,      260,      250,      310} /* TA, NN, A, E, G */
08623      , {      310,      250,      260,      250,      310} /* TA, NN, A, E, T */
08624      }
08625      , { {      310,      250,      260,      250,      310} /* TA, NN, A, A, E */
08626      , {      260,      200,      210,      200,      260} /* TA, NN, A, A, A */
08627      , {      290,      230,      240,      230,      290} /* TA, NN, A, A, C */
08628      , {      260,      200,      210,      200,      260} /* TA, NN, A, A, G */
08629      , {      310,      250,      260,      250,      310} /* TA, NN, A, A, T */
08630      }
08631      , { {      310,      250,      260,      250,      310} /* TA, NN, A, C, E */
08632      , {      290,      230,      240,      230,      290} /* TA, NN, A, C, A */
08633      , {      290,      230,      240,      230,      290} /* TA, NN, A, C, C */
08634      , {      310,      250,      260,      250,      310} /* TA, NN, A, C, G */
08635      , {      290,      230,      240,      230,      290} /* TA, NN, A, C, T */
08636      }
08637      , { {      310,      250,      260,      250,      310} /* TA, NN, A, G, E */
08638      , {      260,      200,      210,      200,      260} /* TA, NN, A, G, A */
08639      , {      280,      220,      230,      220,      280} /* TA, NN, A, G, C */
08640      , {      260,      200,      210,      200,      260} /* TA, NN, A, G, G */
08641      , {      310,      250,      260,      250,      310} /* TA, NN, A, G, T */
08642      }
08643      , { {      310,      250,      260,      250,      310} /* TA, NN, A, T, E */
08644      , {      310,      250,      260,      250,      310} /* TA, NN, A, T, A */
08645      , {      290,      230,      240,      230,      290} /* TA, NN, A, T, C */
08646      , {      310,      250,      260,      250,      310} /* TA, NN, A, T, G */
08647      , {      290,      230,      240,      230,      290} /* TA, NN, A, T, T */
08648      }
08649      }
08650      , { { {      280,      260,      280,      260,      270} /* TA, NN, C, E, E */
08651      , {      280,      260,      280,      260,      270} /* TA, NN, C, E, A */
08652      , {      260,      240,      260,      240,      250} /* TA, NN, C, E, C */
08653      , {      280,      260,      280,      260,      270} /* TA, NN, C, E, G */
08654      , {      280,      260,      280,      260,      270} /* TA, NN, C, E, T */
08655      }
08656      , { {      280,      260,      280,      260,      270} /* TA, NN, C, A, E */
08657      , {      230,      210,      230,      210,      220} /* TA, NN, C, A, A */
08658      , {      260,      240,      260,      240,      250} /* TA, NN, C, A, C */
08659      , {      230,      210,      230,      210,      220} /* TA, NN, C, A, G */
08660      , {      280,      260,      280,      260,      270} /* TA, NN, C, A, T */
08661      }
08662      , { {      280,      260,      280,      260,      270} /* TA, NN, C, C, E */
08663      , {      260,      240,      260,      240,      250} /* TA, NN, C, C, A */
08664      , {      260,      240,      260,      240,      250} /* TA, NN, C, C, C */
08665      , {      280,      260,      280,      260,      270} /* TA, NN, C, C, G */
08666      , {      260,      240,      260,      240,      250} /* TA, NN, C, C, T */
08667      }
08668      , { {      280,      260,      280,      260,      270} /* TA, NN, C, G, E */
08669      , {      230,      210,      230,      210,      220} /* TA, NN, C, G, A */
08670      , {      250,      230,      250,      230,      240} /* TA, NN, C, G, C */
08671      , {      230,      210,      230,      210,      220} /* TA, NN, C, G, G */
08672      , {      280,      260,      280,      260,      270} /* TA, NN, C, G, T */
08673      }
08674      , { {      280,      260,      280,      260,      270} /* TA, NN, C, T, E */
08675      , {      280,      260,      280,      260,      270} /* TA, NN, C, T, A */
08676      , {      260,      240,      260,      240,      250} /* TA, NN, C, T, C */
08677      , {      280,      260,      280,      260,      270} /* TA, NN, C, T, G */
08678      , {      260,      240,      260,      240,      250} /* TA, NN, C, T, T */
08679      }
08680      }
08681      , { { {      310,      250,      310,      250,      310} /* TA, NN, G, E, E */

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08682      , {      310,      250,      310,      250,      310} /* TA,NN,G,E,A */
08683      , {      290,      230,      290,      230,      290} /* TA,NN,G,E,C */
08684      , {      310,      250,      310,      250,      310} /* TA,NN,G,E,G */
08685      , {      310,      250,      310,      250,      310} /* TA,NN,G,E,T */
08686      }
08687      , { {      310,      250,      310,      250,      310} /* TA,NN,G,A,E */
08688      , {      260,      200,      260,      200,      260} /* TA,NN,G,A,A */
08689      , {      290,      230,      290,      230,      290} /* TA,NN,G,A,C */
08690      , {      260,      200,      260,      200,      260} /* TA,NN,G,A,G */
08691      , {      310,      250,      310,      250,      310} /* TA,NN,G,A,T */
08692      }
08693      , { {      310,      250,      310,      250,      310} /* TA,NN,G,C,E */
08694      , {      290,      230,      290,      230,      290} /* TA,NN,G,C,A */
08695      , {      290,      230,      290,      230,      290} /* TA,NN,G,C,C */
08696      , {      310,      250,      310,      250,      310} /* TA,NN,G,C,G */
08697      , {      290,      230,      290,      230,      290} /* TA,NN,G,C,T */
08698      }
08699      , { {      310,      250,      310,      250,      310} /* TA,NN,G,G,E */
08700      , {      260,      200,      260,      200,      260} /* TA,NN,G,G,A */
08701      , {      280,      220,      280,      220,      280} /* TA,NN,G,G,C */
08702      , {      260,      200,      260,      200,      260} /* TA,NN,G,G,G */
08703      , {      310,      250,      310,      250,      310} /* TA,NN,G,G,T */
08704      }
08705      , { {      310,      250,      310,      250,      310} /* TA,NN,G,T,E */
08706      , {      310,      250,      310,      250,      310} /* TA,NN,G,T,A */
08707      , {      290,      230,      290,      230,      290} /* TA,NN,G,T,C */
08708      , {      310,      250,      310,      250,      310} /* TA,NN,G,T,G */
08709      , {      290,      230,      290,      230,      290} /* TA,NN,G,T,T */
08710      }
08711      }
08712      , { { {      310,      310,      270,      300,      250} /* TA,NN,T,E,E */
08713      , {      310,      310,      270,      300,      250} /* TA,NN,T,E,A */
08714      , {      290,      290,      250,      280,      230} /* TA,NN,T,E,C */
08715      , {      310,      310,      270,      300,      250} /* TA,NN,T,E,G */
08716      , {      310,      310,      270,      300,      250} /* TA,NN,T,E,T */
08717      }
08718      , { {      310,      310,      270,      300,      250} /* TA,NN,T,A,E */
08719      , {      260,      260,      220,      250,      200} /* TA,NN,T,A,A */
08720      , {      290,      290,      250,      280,      230} /* TA,NN,T,A,C */
08721      , {      260,      260,      220,      250,      200} /* TA,NN,T,A,G */
08722      , {      310,      310,      270,      300,      250} /* TA,NN,T,A,T */
08723      }
08724      , { {      310,      310,      270,      300,      250} /* TA,NN,T,C,E */
08725      , {      290,      290,      250,      280,      230} /* TA,NN,T,C,A */
08726      , {      290,      290,      250,      280,      230} /* TA,NN,T,C,C */
08727      , {      310,      310,      270,      300,      250} /* TA,NN,T,C,G */
08728      , {      290,      290,      250,      280,      230} /* TA,NN,T,C,T */
08729      }
08730      , { {      310,      310,      270,      300,      250} /* TA,NN,T,G,E */
08731      , {      260,      260,      220,      250,      200} /* TA,NN,T,G,A */
08732      , {      280,      280,      240,      270,      220} /* TA,NN,T,G,C */
08733      , {      260,      260,      220,      250,      200} /* TA,NN,T,G,G */
08734      , {      310,      310,      270,      300,      250} /* TA,NN,T,G,T */
08735      }
08736      , { {      310,      310,      270,      300,      250} /* TA,NN,T,T,E */
08737      , {      310,      310,      270,      300,      250} /* TA,NN,T,T,A */
08738      , {      290,      290,      250,      280,      230} /* TA,NN,T,T,C */
08739      , {      310,      310,      270,      300,      250} /* TA,NN,T,T,G */
08740      , {      290,      290,      250,      280,      230} /* TA,NN,T,T,T */
08741      }
08742      }
08743      }
08744      }
08745      , { { { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,E,E */
08746      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,E,A */
08747      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,E,C */
08748      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,E,G */
08749      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,E,T */
08750      }
08751      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,A,E */
08752      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,A,A */
08753      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,A,C */
08754      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,A,G */
08755      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,A,T */
08756      }
08757      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,C,E */
08758      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,C,A */
08759      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,C,C */
08760      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,C,G */
08761      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,C,T */
08762      }
08763      , { {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,E */
08764      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,A */
08765      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,C */
08766      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,G */
08767      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,E,G,T */
08768      }

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08769 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,T,E */
08770 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T,A */
08771 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T,C */
08772 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T,G */
08773 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T,T */
08774 }
08775 }
08776 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,A,E,E */
08777 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,E,A */
08778 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,E,C */
08779 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,E,G */
08780 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,E,T */
08781 }
08782 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,A,A,E */
08783 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,A,A */
08784 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,A,C */
08785 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,A,G */
08786 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,A,T */
08787 }
08788 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,A,C,E */
08789 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,C,A */
08790 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,C,C */
08791 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,C,G */
08792 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,C,T */
08793 }
08794 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,A,G,E */
08795 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,G,A */
08796 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,G,C */
08797 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,G,G */
08798 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,G,T */
08799 }
08800 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,A,T,E */
08801 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,T,A */
08802 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,T,C */
08803 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,T,G */
08804 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,T,T */
08805 }
08806 }
08807 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,C,E,E */
08808 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,E,A */
08809 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,E,C */
08810 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,E,G */
08811 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,E,T */
08812 }
08813 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,C,A,E */
08814 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,A,A */
08815 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,A,C */
08816 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,A,G */
08817 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,A,T */
08818 }
08819 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,C,C,E */
08820 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,C,A */
08821 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,C,C */
08822 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,C,G */
08823 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,C,T */
08824 }
08825 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,C,G,E */
08826 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,G,A */
08827 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,G,C */
08828 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,G,G */
08829 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,G,T */
08830 }
08831 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,C,T,E */
08832 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,T,A */
08833 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,T,C */
08834 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,T,G */
08835 ,{ INF, INF, INF, INF, INF} /* NN,NP,C,T,T */
08836 }
08837 }
08838 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,G,E,E */
08839 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,E,A */
08840 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,E,C */
08841 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,E,G */
08842 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,E,T */
08843 }
08844 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,G,A,E */
08845 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,A,A */
08846 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,A,C */
08847 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,A,G */
08848 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,A,T */
08849 }
08850 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,G,C,E */
08851 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,C,A */
08852 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,C,C */
08853 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,C,G */
08854 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,C,T */
08855 }

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08856 ,{{ INF, INF, INF, INF, INF} /* NN,NP,G,G,E */
08857 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,G,A */
08858 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,G,C */
08859 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,G,G */
08860 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,G,T */
08861 }
08862 ,{{ INF, INF, INF, INF, INF} /* NN,NP,G,T,E */
08863 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,T,A */
08864 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,T,C */
08865 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,T,G */
08866 ,{ INF, INF, INF, INF, INF} /* NN,NP,G,T,T */
08867 }
08868 }
08869 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,T,E,E */
08870 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,E,A */
08871 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,E,C */
08872 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,E,G */
08873 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,E,T */
08874 }
08875 ,{{ INF, INF, INF, INF, INF} /* NN,NP,T,A,E */
08876 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,A,A */
08877 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,A,C */
08878 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,A,G */
08879 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,A,T */
08880 }
08881 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,T,C,E */
08882 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,C,A */
08883 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,C,C */
08884 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,C,G */
08885 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,C,T */
08886 }
08887 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,T,G,E */
08888 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,G,A */
08889 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,G,C */
08890 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,G,G */
08891 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,G,T */
08892 }
08893 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,T,T,E */
08894 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,T,A */
08895 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,T,C */
08896 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,T,G */
08897 ,{ INF, INF, INF, INF, INF} /* NN,NP,T,T,T */
08898 }
08899 }
08900 }
08901 ,{{{ 290, 290, 290, 290, 290} /* NN,CG,E,E,E */
08902 ,{ 270, 270, 270, 270, 270} /* NN,CG,E,E,A */
08903 ,{ 260, 260, 260, 260, 260} /* NN,CG,E,E,C */
08904 ,{ 260, 260, 260, 260, 260} /* NN,CG,E,E,G */
08905 ,{ 290, 290, 290, 290, 290} /* NN,CG,E,E,T */
08906 }
08907 ,{{{ 290, 290, 290, 290, 290} /* NN,CG,E,A,E */
08908 ,{ 210, 210, 210, 210, 210} /* NN,CG,E,A,A */
08909 ,{ 240, 240, 240, 240, 240} /* NN,CG,E,A,C */
08910 ,{ 220, 220, 220, 220, 220} /* NN,CG,E,A,G */
08911 ,{ 290, 290, 290, 290, 290} /* NN,CG,E,A,T */
08912 }
08913 ,{{{ 260, 260, 260, 260, 260} /* NN,CG,E,C,E */
08914 ,{ 240, 240, 240, 240, 240} /* NN,CG,E,C,A */
08915 ,{ 260, 260, 260, 260, 260} /* NN,CG,E,C,C */
08916 ,{ 200, 200, 200, 200, 200} /* NN,CG,E,C,G */
08917 ,{ 240, 240, 240, 240, 240} /* NN,CG,E,C,T */
08918 }
08919 ,{{{ 270, 270, 270, 270, 270} /* NN,CG,E,G,E */
08920 ,{ 220, 220, 220, 220, 220} /* NN,CG,E,G,A */
08921 ,{ 230, 230, 230, 230, 230} /* NN,CG,E,G,C */
08922 ,{ 220, 220, 220, 220, 220} /* NN,CG,E,G,G */
08923 ,{ 270, 270, 270, 270, 270} /* NN,CG,E,G,T */
08924 }
08925 ,{{{ 270, 270, 270, 270, 270} /* NN,CG,E,T,E */
08926 ,{ 270, 270, 270, 270, 270} /* NN,CG,E,T,A */
08927 ,{ 240, 240, 240, 240, 240} /* NN,CG,E,T,C */
08928 ,{ 260, 260, 260, 260, 260} /* NN,CG,E,T,G */
08929 ,{ 220, 220, 220, 220, 220} /* NN,CG,E,T,T */
08930 }
08931 }
08932 ,{{{ 290, 240, 270, 240, 290} /* NN,CG,A,E,E */
08933 ,{ 270, 220, 250, 220, 270} /* NN,CG,A,E,A */
08934 ,{ 260, 210, 240, 210, 260} /* NN,CG,A,E,C */
08935 ,{ 260, 210, 240, 210, 260} /* NN,CG,A,E,G */
08936 ,{ 290, 240, 270, 240, 290} /* NN,CG,A,E,T */
08937 }
08938 ,{{{ 290, 240, 270, 240, 290} /* NN,CG,A,A,E */
08939 ,{ 210, 160, 190, 160, 210} /* NN,CG,A,A,A */
08940 ,{ 240, 190, 220, 190, 240} /* NN,CG,A,A,C */
08941 ,{ 220, 170, 200, 170, 220} /* NN,CG,A,A,G */
08942 ,{ 290, 240, 270, 240, 290} /* NN,CG,A,A,T */

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08943      }
08944      ,{{ 260, 210, 240, 210, 260} /* NN,CG,A,C,E */
08945      ,{ 240, 190, 220, 190, 240} /* NN,CG,A,C,A */
08946      ,{ 260, 210, 240, 210, 260} /* NN,CG,A,C,C */
08947      ,{ 200, 150, 180, 150, 200} /* NN,CG,A,C,G */
08948      ,{ 240, 190, 220, 190, 240} /* NN,CG,A,C,T */
08949      }
08950      ,{{ 270, 220, 250, 220, 270} /* NN,CG,A,G,E */
08951      ,{ 220, 170, 200, 170, 220} /* NN,CG,A,G,A */
08952      ,{ 230, 180, 210, 180, 230} /* NN,CG,A,G,C */
08953      ,{ 220, 170, 200, 170, 220} /* NN,CG,A,G,G */
08954      ,{ 270, 220, 250, 220, 270} /* NN,CG,A,G,T */
08955      }
08956      ,{{ 270, 220, 250, 220, 270} /* NN,CG,A,T,E */
08957      ,{ 270, 220, 250, 220, 270} /* NN,CG,A,T,A */
08958      ,{ 240, 190, 220, 190, 240} /* NN,CG,A,T,C */
08959      ,{ 260, 210, 240, 210, 260} /* NN,CG,A,T,G */
08960      ,{ 220, 170, 200, 170, 220} /* NN,CG,A,T,T */
08961      }
08962      }
08963      ,{{{ 270, 270, 270, 260, 270} /* NN,CG,C,E,E */
08964      ,{ 250, 250, 250, 240, 250} /* NN,CG,C,E,A */
08965      ,{ 240, 240, 240, 230, 240} /* NN,CG,C,E,C */
08966      ,{ 240, 240, 240, 230, 240} /* NN,CG,C,E,G */
08967      ,{ 270, 270, 270, 260, 270} /* NN,CG,C,E,T */
08968      }
08969      ,{{{ 270, 270, 270, 260, 270} /* NN,CG,C,A,E */
08970      ,{ 190, 190, 190, 180, 190} /* NN,CG,C,A,A */
08971      ,{ 220, 220, 220, 210, 220} /* NN,CG,C,A,C */
08972      ,{ 200, 200, 200, 190, 200} /* NN,CG,C,A,G */
08973      ,{ 270, 270, 270, 260, 270} /* NN,CG,C,A,T */
08974      }
08975      ,{{{ 240, 240, 240, 230, 240} /* NN,CG,C,C,E */
08976      ,{ 220, 220, 220, 210, 220} /* NN,CG,C,C,A */
08977      ,{ 240, 240, 240, 230, 240} /* NN,CG,C,C,C */
08978      ,{ 180, 180, 180, 170, 180} /* NN,CG,C,C,G */
08979      ,{ 220, 220, 220, 210, 220} /* NN,CG,C,C,T */
08980      }
08981      ,{{{ 250, 250, 250, 240, 250} /* NN,CG,C,G,E */
08982      ,{ 200, 200, 200, 190, 200} /* NN,CG,C,G,A */
08983      ,{ 210, 210, 210, 200, 210} /* NN,CG,C,G,C */
08984      ,{ 200, 200, 200, 190, 200} /* NN,CG,C,G,G */
08985      ,{ 250, 250, 250, 240, 250} /* NN,CG,C,G,T */
08986      }
08987      ,{{{ 250, 250, 250, 240, 250} /* NN,CG,C,T,E */
08988      ,{ 250, 250, 250, 240, 250} /* NN,CG,C,T,A */
08989      ,{ 220, 220, 220, 210, 220} /* NN,CG,C,T,C */
08990      ,{ 240, 240, 240, 230, 240} /* NN,CG,C,T,G */
08991      ,{ 200, 200, 200, 190, 200} /* NN,CG,C,T,T */
08992      }
08993      }
08994      ,{{{ 290, 240, 290, 240, 290} /* NN,CG,G,E,E */
08995      ,{ 270, 220, 270, 220, 270} /* NN,CG,G,E,A */
08996      ,{ 260, 210, 260, 210, 260} /* NN,CG,G,E,C */
08997      ,{ 260, 210, 260, 210, 260} /* NN,CG,G,E,G */
08998      ,{ 290, 240, 290, 240, 290} /* NN,CG,G,E,T */
08999      }
09000      ,{{{ 290, 240, 290, 240, 290} /* NN,CG,G,A,E */
09001      ,{ 210, 160, 210, 160, 210} /* NN,CG,G,A,A */
09002      ,{ 240, 190, 240, 190, 240} /* NN,CG,G,A,C */
09003      ,{ 220, 170, 220, 170, 220} /* NN,CG,G,A,G */
09004      ,{ 290, 240, 290, 240, 290} /* NN,CG,G,A,T */
09005      }
09006      ,{{{ 260, 210, 260, 210, 260} /* NN,CG,G,C,E */
09007      ,{ 240, 190, 240, 190, 240} /* NN,CG,G,C,A */
09008      ,{ 260, 210, 260, 210, 260} /* NN,CG,G,C,C */
09009      ,{ 200, 150, 200, 150, 200} /* NN,CG,G,C,G */
09010      ,{ 240, 190, 240, 190, 240} /* NN,CG,G,C,T */
09011      }
09012      ,{{{ 270, 220, 270, 220, 270} /* NN,CG,G,G,E */
09013      ,{ 220, 170, 220, 170, 220} /* NN,CG,G,G,A */
09014      ,{ 230, 180, 230, 180, 230} /* NN,CG,G,G,C */
09015      ,{ 220, 170, 220, 170, 220} /* NN,CG,G,G,G */
09016      ,{ 270, 220, 270, 220, 270} /* NN,CG,G,G,T */
09017      }
09018      ,{{{ 270, 220, 270, 220, 270} /* NN,CG,G,T,E */
09019      ,{ 270, 220, 270, 220, 270} /* NN,CG,G,T,A */
09020      ,{ 240, 190, 240, 190, 240} /* NN,CG,G,T,C */
09021      ,{ 260, 210, 260, 210, 260} /* NN,CG,G,T,G */
09022      ,{ 220, 170, 220, 170, 220} /* NN,CG,G,T,T */
09023      }
09024      }
09025      ,{{{ 290, 290, 270, 290, 270} /* NN,CG,T,E,E */
09026      ,{ 270, 270, 250, 270, 250} /* NN,CG,T,E,A */
09027      ,{ 260, 260, 240, 260, 240} /* NN,CG,T,E,C */
09028      ,{ 260, 260, 240, 260, 240} /* NN,CG,T,E,G */
09029      ,{ 290, 290, 270, 290, 270} /* NN,CG,T,E,T */

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09030      }
09031      ,{{      290,      290,      270,      290,      270} /* NN,CG,T,A,E */
09032      ,{      210,      210,      190,      210,      190} /* NN,CG,T,A,A */
09033      ,{      240,      240,      220,      240,      220} /* NN,CG,T,A,C */
09034      ,{      220,      220,      200,      220,      200} /* NN,CG,T,A,G */
09035      ,{      290,      290,      270,      290,      270} /* NN,CG,T,A,T */
09036      }
09037      ,{{      260,      260,      240,      260,      240} /* NN,CG,T,C,E */
09038      ,{      240,      240,      220,      240,      220} /* NN,CG,T,C,A */
09039      ,{      260,      260,      240,      260,      240} /* NN,CG,T,C,C */
09040      ,{      200,      200,      180,      200,      180} /* NN,CG,T,C,G */
09041      ,{      240,      240,      220,      240,      220} /* NN,CG,T,C,T */
09042      }
09043      ,{{      270,      270,      250,      270,      250} /* NN,CG,T,G,E */
09044      ,{      220,      220,      200,      220,      200} /* NN,CG,T,G,A */
09045      ,{      230,      230,      210,      230,      210} /* NN,CG,T,G,C */
09046      ,{      220,      220,      200,      220,      200} /* NN,CG,T,G,G */
09047      ,{      270,      270,      250,      270,      250} /* NN,CG,T,G,T */
09048      }
09049      ,{{      270,      270,      250,      270,      250} /* NN,CG,T,T,E */
09050      ,{      270,      270,      250,      270,      250} /* NN,CG,T,T,A */
09051      ,{      240,      240,      220,      240,      220} /* NN,CG,T,T,C */
09052      ,{      260,      260,      240,      260,      240} /* NN,CG,T,T,G */
09053      ,{      220,      220,      200,      220,      200} /* NN,CG,T,T,T */
09054      }
09055      }
09056      }
09057      ,{{{      280,      280,      280,      280,      280} /* NN,GC,E,E,E */
09058      ,{      260,      260,      260,      260,      260} /* NN,GC,E,E,A */
09059      ,{      250,      250,      250,      250,      250} /* NN,GC,E,E,C */
09060      ,{      280,      280,      280,      280,      280} /* NN,GC,E,E,G */
09061      ,{      270,      270,      270,      270,      270} /* NN,GC,E,E,T */
09062      }
09063      ,{{      270,      270,      270,      270,      270} /* NN,GC,E,A,E */
09064      ,{      200,      200,      200,      200,      200} /* NN,GC,E,A,A */
09065      ,{      230,      230,      230,      230,      230} /* NN,GC,E,A,C */
09066      ,{      210,      210,      210,      210,      210} /* NN,GC,E,A,G */
09067      ,{      270,      270,      270,      270,      270} /* NN,GC,E,A,T */
09068      }
09069      ,{{      250,      250,      250,      250,      250} /* NN,GC,E,C,E */
09070      ,{      230,      230,      230,      230,      230} /* NN,GC,E,C,A */
09071      ,{      250,      250,      250,      250,      250} /* NN,GC,E,C,C */
09072      ,{      230,      230,      230,      230,      230} /* NN,GC,E,C,G */
09073      ,{      240,      240,      240,      240,      240} /* NN,GC,E,C,T */
09074      }
09075      ,{{      270,      270,      270,      270,      270} /* NN,GC,E,G,E */
09076      ,{      210,      210,      210,      210,      210} /* NN,GC,E,G,A */
09077      ,{      180,      180,      180,      180,      180} /* NN,GC,E,G,C */
09078      ,{      210,      210,      210,      210,      210} /* NN,GC,E,G,G */
09079      ,{      270,      270,      270,      270,      270} /* NN,GC,E,G,T */
09080      }
09081      ,{{      280,      280,      280,      280,      280} /* NN,GC,E,T,E */
09082      ,{      260,      260,      260,      260,      260} /* NN,GC,E,T,A */
09083      ,{      240,      240,      240,      240,      240} /* NN,GC,E,T,C */
09084      ,{      280,      280,      280,      280,      280} /* NN,GC,E,T,G */
09085      ,{      220,      220,      220,      220,      220} /* NN,GC,E,T,T */
09086      }
09087      }
09088      ,{{{      280,      230,      260,      230,      280} /* NN,GC,A,E,E */
09089      ,{      260,      210,      240,      210,      260} /* NN,GC,A,E,A */
09090      ,{      250,      200,      230,      200,      250} /* NN,GC,A,E,C */
09091      ,{      280,      230,      260,      230,      280} /* NN,GC,A,E,G */
09092      ,{      270,      220,      250,      220,      270} /* NN,GC,A,E,T */
09093      }
09094      ,{{{      270,      220,      250,      220,      270} /* NN,GC,A,A,E */
09095      ,{      200,      150,      180,      150,      200} /* NN,GC,A,A,A */
09096      ,{      230,      180,      210,      180,      230} /* NN,GC,A,A,C */
09097      ,{      210,      160,      190,      160,      210} /* NN,GC,A,A,G */
09098      ,{      270,      220,      250,      220,      270} /* NN,GC,A,A,T */
09099      }
09100      ,{{{      250,      200,      230,      200,      250} /* NN,GC,A,C,E */
09101      ,{      230,      180,      210,      180,      230} /* NN,GC,A,C,A */
09102      ,{      250,      200,      230,      200,      250} /* NN,GC,A,C,C */
09103      ,{      230,      180,      210,      180,      230} /* NN,GC,A,C,G */
09104      ,{      240,      190,      220,      190,      240} /* NN,GC,A,C,T */
09105      }
09106      ,{{      270,      220,      250,      220,      270} /* NN,GC,A,G,E */
09107      ,{      210,      160,      190,      160,      210} /* NN,GC,A,G,A */
09108      ,{      180,      130,      160,      130,      180} /* NN,GC,A,G,C */
09109      ,{      210,      160,      190,      160,      210} /* NN,GC,A,G,G */
09110      ,{      270,      220,      250,      220,      270} /* NN,GC,A,G,T */
09111      }
09112      ,{{{      280,      230,      260,      230,      280} /* NN,GC,A,T,E */
09113      ,{      260,      210,      240,      210,      260} /* NN,GC,A,T,A */
09114      ,{      240,      190,      220,      190,      240} /* NN,GC,A,T,C */
09115      ,{      280,      230,      260,      230,      280} /* NN,GC,A,T,G */
09116      ,{      220,      170,      200,      170,      220} /* NN,GC,A,T,T */

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09117     }
09118     }
09119     ,{{ { 260, 260, 260, 250, 260} /* NN,GC,C,E,E */
09120     , { 240, 240, 240, 230, 240} /* NN,GC,C,E,A */
09121     , { 230, 230, 230, 220, 230} /* NN,GC,C,E,C */
09122     , { 260, 260, 260, 250, 260} /* NN,GC,C,E,G */
09123     , { 250, 250, 250, 240, 250} /* NN,GC,C,E,T */
09124     }
09125     ,{{ { 250, 250, 250, 240, 250} /* NN,GC,C,A,E */
09126     , { 180, 180, 180, 170, 180} /* NN,GC,C,A,A */
09127     , { 210, 210, 210, 200, 210} /* NN,GC,C,A,C */
09128     , { 190, 190, 190, 180, 190} /* NN,GC,C,A,G */
09129     , { 250, 250, 250, 240, 250} /* NN,GC,C,A,T */
09130     }
09131     ,{{ { 230, 230, 230, 220, 230} /* NN,GC,C,C,E */
09132     , { 210, 210, 210, 200, 210} /* NN,GC,C,C,A */
09133     , { 230, 230, 230, 220, 230} /* NN,GC,C,C,C */
09134     , { 210, 210, 210, 200, 210} /* NN,GC,C,C,G */
09135     , { 220, 220, 220, 210, 220} /* NN,GC,C,C,T */
09136     }
09137     ,{{ { 250, 250, 250, 240, 250} /* NN,GC,C,G,E */
09138     , { 190, 190, 190, 180, 190} /* NN,GC,C,G,A */
09139     , { 160, 160, 160, 150, 160} /* NN,GC,C,G,C */
09140     , { 190, 190, 190, 180, 190} /* NN,GC,C,G,G */
09141     , { 250, 250, 250, 240, 250} /* NN,GC,C,G,T */
09142     }
09143     ,{{ { 260, 260, 260, 250, 260} /* NN,GC,C,T,E */
09144     , { 240, 240, 240, 230, 240} /* NN,GC,C,T,A */
09145     , { 220, 220, 220, 210, 220} /* NN,GC,C,T,C */
09146     , { 260, 260, 260, 250, 260} /* NN,GC,C,T,G */
09147     , { 200, 200, 200, 190, 200} /* NN,GC,C,T,T */
09148     }
09149     }
09150     ,{{ { 280, 230, 280, 230, 280} /* NN,GC,G,E,E */
09151     , { 260, 210, 260, 210, 260} /* NN,GC,G,E,A */
09152     , { 250, 200, 250, 200, 250} /* NN,GC,G,E,C */
09153     , { 280, 230, 280, 230, 280} /* NN,GC,G,E,G */
09154     , { 270, 220, 270, 220, 270} /* NN,GC,G,E,T */
09155     }
09156     ,{{ { 270, 220, 270, 220, 270} /* NN,GC,G,A,E */
09157     , { 200, 150, 200, 150, 200} /* NN,GC,G,A,A */
09158     , { 230, 180, 230, 180, 230} /* NN,GC,G,A,C */
09159     , { 210, 160, 210, 160, 210} /* NN,GC,G,A,G */
09160     , { 270, 220, 270, 220, 270} /* NN,GC,G,A,T */
09161     }
09162     ,{{ { 250, 200, 250, 200, 250} /* NN,GC,G,C,E */
09163     , { 230, 180, 230, 180, 230} /* NN,GC,G,C,A */
09164     , { 250, 200, 250, 200, 250} /* NN,GC,G,C,C */
09165     , { 230, 180, 230, 180, 230} /* NN,GC,G,C,G */
09166     , { 240, 190, 240, 190, 240} /* NN,GC,G,C,T */
09167     }
09168     ,{{ { 270, 220, 270, 220, 270} /* NN,GC,G,G,E */
09169     , { 210, 160, 210, 160, 210} /* NN,GC,G,G,A */
09170     , { 180, 130, 180, 130, 180} /* NN,GC,G,G,C */
09171     , { 210, 160, 210, 160, 210} /* NN,GC,G,G,G */
09172     , { 270, 220, 270, 220, 270} /* NN,GC,G,G,T */
09173     }
09174     ,{{ { 280, 230, 280, 230, 280} /* NN,GC,G,T,E */
09175     , { 260, 210, 260, 210, 260} /* NN,GC,G,T,A */
09176     , { 240, 190, 240, 190, 240} /* NN,GC,G,T,C */
09177     , { 280, 230, 280, 230, 280} /* NN,GC,G,T,G */
09178     , { 220, 170, 220, 170, 220} /* NN,GC,G,T,T */
09179     }
09180     }
09181     ,{{ { 280, 280, 260, 280, 260} /* NN,GC,T,E,E */
09182     , { 260, 260, 240, 260, 240} /* NN,GC,T,E,A */
09183     , { 250, 250, 230, 250, 230} /* NN,GC,T,E,C */
09184     , { 280, 280, 260, 280, 260} /* NN,GC,T,E,G */
09185     , { 270, 270, 250, 270, 250} /* NN,GC,T,E,T */
09186     }
09187     ,{{ { 270, 270, 250, 270, 250} /* NN,GC,T,A,E */
09188     , { 200, 200, 180, 200, 180} /* NN,GC,T,A,A */
09189     , { 230, 230, 210, 230, 210} /* NN,GC,T,A,C */
09190     , { 210, 210, 190, 210, 190} /* NN,GC,T,A,G */
09191     , { 270, 270, 250, 270, 250} /* NN,GC,T,A,T */
09192     }
09193     ,{{ { 250, 250, 230, 250, 230} /* NN,GC,T,C,E */
09194     , { 230, 230, 210, 230, 210} /* NN,GC,T,C,A */
09195     , { 250, 250, 230, 250, 230} /* NN,GC,T,C,C */
09196     , { 230, 230, 210, 230, 210} /* NN,GC,T,C,G */
09197     , { 240, 240, 220, 240, 220} /* NN,GC,T,C,T */
09198     }
09199     ,{{ { 270, 270, 250, 270, 250} /* NN,GC,T,G,E */
09200     , { 210, 210, 190, 210, 190} /* NN,GC,T,G,A */
09201     , { 180, 180, 160, 180, 160} /* NN,GC,T,G,C */
09202     , { 210, 210, 190, 210, 190} /* NN,GC,T,G,G */
09203     , { 270, 270, 250, 270, 250} /* NN,GC,T,G,T */

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```
09204     }
09205     ,{{      280,      280,      260,      280,      260} /* NN,GC,T,T,E */
09206     ,{      260,      260,      240,      260,      240} /* NN,GC,T,T,A */
09207     ,{      240,      240,      220,      240,      220} /* NN,GC,T,T,C */
09208     ,{      280,      280,      260,      280,      260} /* NN,GC,T,T,G */
09209     ,{      220,      220,      200,      220,      200} /* NN,GC,T,T,T */
09210     }
09211     }
09212     }
09213     ,{{{      310,      310,      310,      310,      310} /* NN,GT,E,E,E */
09214     ,{      290,      290,      290,      290,      290} /* NN,GT,E,E,A */
09215     ,{      290,      290,      290,      290,      290} /* NN,GT,E,E,C */
09216     ,{      310,      310,      310,      310,      310} /* NN,GT,E,E,G */
09217     ,{      310,      310,      310,      310,      310} /* NN,GT,E,E,T */
09218     }
09219     ,{{      310,      310,      310,      310,      310} /* NN,GT,E,A,E */
09220     ,{      260,      260,      260,      260,      260} /* NN,GT,E,A,A */
09221     ,{      290,      290,      290,      290,      290} /* NN,GT,E,A,C */
09222     ,{      260,      260,      260,      260,      260} /* NN,GT,E,A,G */
09223     ,{      310,      310,      310,      310,      310} /* NN,GT,E,A,T */
09224     }
09225     ,{{      290,      290,      290,      290,      290} /* NN,GT,E,C,E */
09226     ,{      290,      290,      290,      290,      290} /* NN,GT,E,C,A */
09227     ,{      290,      290,      290,      290,      290} /* NN,GT,E,C,C */
09228     ,{      270,      270,      270,      270,      270} /* NN,GT,E,C,G */
09229     ,{      290,      290,      290,      290,      290} /* NN,GT,E,C,T */
09230     }
09231     ,{{      310,      310,      310,      310,      310} /* NN,GT,E,G,E */
09232     ,{      260,      260,      260,      260,      260} /* NN,GT,E,G,A */
09233     ,{      270,      270,      270,      270,      270} /* NN,GT,E,G,C */
09234     ,{      260,      260,      260,      260,      260} /* NN,GT,E,G,G */
09235     ,{      310,      310,      310,      310,      310} /* NN,GT,E,G,T */
09236     }
09237     ,{{      310,      310,      310,      310,      310} /* NN,GT,E,T,E */
09238     ,{      290,      290,      290,      290,      290} /* NN,GT,E,T,A */
09239     ,{      290,      290,      290,      290,      290} /* NN,GT,E,T,C */
09240     ,{      310,      310,      310,      310,      310} /* NN,GT,E,T,G */
09241     ,{      290,      290,      290,      290,      290} /* NN,GT,E,T,T */
09242     }
09243     }
09244     ,{{{      310,      260,      290,      260,      310} /* NN,GT,A,E,E */
09245     ,{      290,      240,      270,      240,      290} /* NN,GT,A,E,A */
09246     ,{      290,      240,      270,      240,      290} /* NN,GT,A,E,C */
09247     ,{      310,      260,      290,      260,      310} /* NN,GT,A,E,G */
09248     ,{      310,      260,      290,      260,      310} /* NN,GT,A,E,T */
09249     }
09250     ,{{      310,      260,      290,      260,      310} /* NN,GT,A,A,E */
09251     ,{      260,      210,      240,      210,      260} /* NN,GT,A,A,A */
09252     ,{      290,      240,      270,      240,      290} /* NN,GT,A,A,C */
09253     ,{      260,      210,      240,      210,      260} /* NN,GT,A,A,G */
09254     ,{      310,      260,      290,      260,      310} /* NN,GT,A,A,T */
09255     }
09256     ,{{      290,      240,      270,      240,      290} /* NN,GT,A,C,E */
09257     ,{      290,      240,      270,      240,      290} /* NN,GT,A,C,A */
09258     ,{      290,      240,      270,      240,      290} /* NN,GT,A,C,C */
09259     ,{      270,      220,      250,      220,      270} /* NN,GT,A,C,G */
09260     ,{      290,      240,      270,      240,      290} /* NN,GT,A,C,T */
09261     }
09262     ,{{      310,      260,      290,      260,      310} /* NN,GT,A,G,E */
09263     ,{      260,      210,      240,      210,      260} /* NN,GT,A,G,A */
09264     ,{      270,      220,      250,      220,      270} /* NN,GT,A,G,C */
09265     ,{      260,      210,      240,      210,      260} /* NN,GT,A,G,G */
09266     ,{      310,      260,      290,      260,      310} /* NN,GT,A,G,T */
09267     }
09268     ,{{      310,      260,      290,      260,      310} /* NN,GT,A,T,E */
09269     ,{      290,      240,      270,      240,      290} /* NN,GT,A,T,A */
09270     ,{      290,      240,      270,      240,      290} /* NN,GT,A,T,C */
09271     ,{      310,      260,      290,      260,      310} /* NN,GT,A,T,G */
09272     ,{      290,      240,      270,      240,      290} /* NN,GT,A,T,T */
09273     }
09274     }
09275     ,{{{      290,      290,      290,      280,      290} /* NN,GT,C,E,E */
09276     ,{      270,      270,      270,      260,      270} /* NN,GT,C,E,A */
09277     ,{      270,      270,      270,      260,      270} /* NN,GT,C,E,C */
09278     ,{      290,      290,      290,      280,      290} /* NN,GT,C,E,G */
09279     ,{      290,      290,      290,      280,      290} /* NN,GT,C,E,T */
09280     }
09281     ,{{      290,      290,      290,      280,      290} /* NN,GT,C,A,E */
09282     ,{      240,      240,      240,      230,      240} /* NN,GT,C,A,A */
09283     ,{      270,      270,      270,      260,      270} /* NN,GT,C,A,C */
09284     ,{      240,      240,      240,      230,      240} /* NN,GT,C,A,G */
09285     ,{      290,      290,      290,      280,      290} /* NN,GT,C,A,T */
09286     }
09287     ,{{      270,      270,      270,      260,      270} /* NN,GT,C,C,E */
09288     ,{      270,      270,      270,      260,      270} /* NN,GT,C,C,A */
09289     ,{      270,      270,      270,      260,      270} /* NN,GT,C,C,C */
09290     ,{      250,      250,      250,      240,      250} /* NN,GT,C,C,G */
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09291      , {      270,      270,      270,      260,      270} /* NN,GT,C,C,T */
09292      }
09293      , {{      290,      290,      290,      280,      290} /* NN,GT,C,G,E */
09294      , {      240,      240,      240,      230,      240} /* NN,GT,C,G,A */
09295      , {      250,      250,      250,      240,      250} /* NN,GT,C,G,C */
09296      , {      240,      240,      240,      230,      240} /* NN,GT,C,G,G */
09297      , {      290,      290,      290,      280,      290} /* NN,GT,C,G,T */
09298      }
09299      , {{      290,      290,      290,      280,      290} /* NN,GT,C,T,E */
09300      , {      270,      270,      270,      260,      270} /* NN,GT,C,T,A */
09301      , {      270,      270,      270,      260,      270} /* NN,GT,C,T,C */
09302      , {      290,      290,      290,      280,      290} /* NN,GT,C,T,G */
09303      , {      270,      270,      270,      260,      270} /* NN,GT,C,T,T */
09304      }
09305      }
09306      , {{{      310,      260,      310,      260,      310} /* NN,GT,G,E,E */
09307      , {      290,      240,      290,      240,      290} /* NN,GT,G,E,A */
09308      , {      290,      240,      290,      240,      290} /* NN,GT,G,E,C */
09309      , {      310,      260,      310,      260,      310} /* NN,GT,G,E,G */
09310      , {      310,      260,      310,      260,      310} /* NN,GT,G,E,T */
09311      }
09312      , {{      310,      260,      310,      260,      310} /* NN,GT,G,A,E */
09313      , {      260,      210,      260,      210,      260} /* NN,GT,G,A,A */
09314      , {      290,      240,      290,      240,      290} /* NN,GT,G,A,C */
09315      , {      260,      210,      260,      210,      260} /* NN,GT,G,A,G */
09316      , {      310,      260,      310,      260,      310} /* NN,GT,G,A,T */
09317      }
09318      , {{      290,      240,      290,      240,      290} /* NN,GT,G,C,E */
09319      , {      290,      240,      290,      240,      290} /* NN,GT,G,C,A */
09320      , {      290,      240,      290,      240,      290} /* NN,GT,G,C,C */
09321      , {      270,      220,      270,      220,      270} /* NN,GT,G,C,G */
09322      , {      290,      240,      290,      240,      290} /* NN,GT,G,C,T */
09323      }
09324      , {{      310,      260,      310,      260,      310} /* NN,GT,G,G,E */
09325      , {      260,      210,      260,      210,      260} /* NN,GT,G,G,A */
09326      , {      270,      220,      270,      220,      270} /* NN,GT,G,G,C */
09327      , {      260,      210,      260,      210,      260} /* NN,GT,G,G,G */
09328      , {      310,      260,      310,      260,      310} /* NN,GT,G,G,T */
09329      }
09330      , {{      310,      260,      310,      260,      310} /* NN,GT,G,T,E */
09331      , {      290,      240,      290,      240,      290} /* NN,GT,G,T,A */
09332      , {      290,      240,      290,      240,      290} /* NN,GT,G,T,C */
09333      , {      310,      260,      310,      260,      310} /* NN,GT,G,T,G */
09334      , {      290,      240,      290,      240,      290} /* NN,GT,G,T,T */
09335      }
09336      }
09337      , {{{      310,      310,      290,      310,      290} /* NN,GT,T,E,E */
09338      , {      290,      290,      270,      290,      270} /* NN,GT,T,E,A */
09339      , {      290,      290,      270,      290,      270} /* NN,GT,T,E,C */
09340      , {      310,      310,      290,      310,      290} /* NN,GT,T,E,G */
09341      , {      310,      310,      290,      310,      290} /* NN,GT,T,E,T */
09342      }
09343      , {{      310,      310,      290,      310,      290} /* NN,GT,T,A,E */
09344      , {      260,      260,      240,      260,      240} /* NN,GT,T,A,A */
09345      , {      290,      290,      270,      290,      270} /* NN,GT,T,A,C */
09346      , {      260,      260,      240,      260,      240} /* NN,GT,T,A,G */
09347      , {      310,      310,      290,      310,      290} /* NN,GT,T,A,T */
09348      }
09349      , {{      290,      290,      270,      290,      270} /* NN,GT,T,C,E */
09350      , {      290,      290,      270,      290,      270} /* NN,GT,T,C,A */
09351      , {      290,      290,      270,      290,      270} /* NN,GT,T,C,C */
09352      , {      270,      270,      250,      270,      250} /* NN,GT,T,C,G */
09353      , {      290,      290,      270,      290,      270} /* NN,GT,T,C,T */
09354      }
09355      , {{      310,      310,      290,      310,      290} /* NN,GT,T,G,E */
09356      , {      260,      260,      240,      260,      240} /* NN,GT,T,G,A */
09357      , {      270,      270,      250,      270,      250} /* NN,GT,T,G,C */
09358      , {      260,      260,      240,      260,      240} /* NN,GT,T,G,G */
09359      , {      310,      310,      290,      310,      290} /* NN,GT,T,G,T */
09360      }
09361      , {{      310,      310,      290,      310,      290} /* NN,GT,T,T,E */
09362      , {      290,      290,      270,      290,      270} /* NN,GT,T,T,A */
09363      , {      290,      290,      270,      290,      270} /* NN,GT,T,T,C */
09364      , {      310,      310,      290,      310,      290} /* NN,GT,T,T,G */
09365      , {      290,      290,      270,      290,      270} /* NN,GT,T,T,T */
09366      }
09367      }
09368      }
09369      , {{{      310,      310,      310,      310,      310} /* NN,TG,E,E,E */
09370      , {      310,      310,      310,      310,      310} /* NN,TG,E,E,A */
09371      , {      290,      290,      290,      290,      290} /* NN,TG,E,E,C */
09372      , {      310,      310,      310,      310,      310} /* NN,TG,E,E,G */
09373      , {      310,      310,      310,      310,      310} /* NN,TG,E,E,T */
09374      }
09375      , {{      310,      310,      310,      310,      310} /* NN,TG,E,A,E */
09376      , {      260,      260,      260,      260,      260} /* NN,TG,E,A,A */
09377      , {      290,      290,      290,      290,      290} /* NN,TG,E,A,C */

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09378      , {      260,      260,      260,      260,      260} /* NN, TG, E, A, G */
09379      , {      310,      310,      310,      310,      310} /* NN, TG, E, A, T */
09380      }
09381      , { {      290,      290,      290,      290,      290} /* NN, TG, E, C, E */
09382      , {      290,      290,      290,      290,      290} /* NN, TG, E, C, A */
09383      , {      290,      290,      290,      290,      290} /* NN, TG, E, C, C */
09384      , {      260,      260,      260,      260,      260} /* NN, TG, E, C, G */
09385      , {      290,      290,      290,      290,      290} /* NN, TG, E, C, T */
09386      }
09387      , { {      310,      310,      310,      310,      310} /* NN, TG, E, G, E */
09388      , {      260,      260,      260,      260,      260} /* NN, TG, E, G, A */
09389      , {      280,      280,      280,      280,      280} /* NN, TG, E, G, C */
09390      , {      260,      260,      260,      260,      260} /* NN, TG, E, G, G */
09391      , {      310,      310,      310,      310,      310} /* NN, TG, E, G, T */
09392      }
09393      , { {      310,      310,      310,      310,      310} /* NN, TG, E, T, E */
09394      , {      310,      310,      310,      310,      310} /* NN, TG, E, T, A */
09395      , {      290,      290,      290,      290,      290} /* NN, TG, E, T, C */
09396      , {      310,      310,      310,      310,      310} /* NN, TG, E, T, G */
09397      , {      290,      290,      290,      290,      290} /* NN, TG, E, T, T */
09398      }
09399      }
09400      , { { {      310,      260,      290,      260,      310} /* NN, TG, A, E, E */
09401      , {      310,      260,      290,      260,      310} /* NN, TG, A, E, A */
09402      , {      290,      240,      270,      240,      290} /* NN, TG, A, E, C */
09403      , {      310,      260,      290,      260,      310} /* NN, TG, A, E, G */
09404      , {      310,      260,      290,      260,      310} /* NN, TG, A, E, T */
09405      }
09406      , { {      310,      260,      290,      260,      310} /* NN, TG, A, A, E */
09407      , {      260,      210,      240,      210,      260} /* NN, TG, A, A, A */
09408      , {      290,      240,      270,      240,      290} /* NN, TG, A, A, C */
09409      , {      260,      210,      240,      210,      260} /* NN, TG, A, A, G */
09410      , {      310,      260,      290,      260,      310} /* NN, TG, A, A, T */
09411      }
09412      , { {      290,      240,      270,      240,      290} /* NN, TG, A, C, E */
09413      , {      290,      240,      270,      240,      290} /* NN, TG, A, C, A */
09414      , {      290,      240,      270,      240,      290} /* NN, TG, A, C, C */
09415      , {      260,      210,      240,      210,      260} /* NN, TG, A, C, G */
09416      , {      290,      240,      270,      240,      290} /* NN, TG, A, C, T */
09417      }
09418      , { {      310,      260,      290,      260,      310} /* NN, TG, A, G, E */
09419      , {      260,      210,      240,      210,      260} /* NN, TG, A, G, A */
09420      , {      280,      230,      260,      230,      280} /* NN, TG, A, G, C */
09421      , {      260,      210,      240,      210,      260} /* NN, TG, A, G, G */
09422      , {      310,      260,      290,      260,      310} /* NN, TG, A, G, T */
09423      }
09424      , { {      310,      260,      290,      260,      310} /* NN, TG, A, T, E */
09425      , {      310,      260,      290,      260,      310} /* NN, TG, A, T, A */
09426      , {      290,      240,      270,      240,      290} /* NN, TG, A, T, C */
09427      , {      310,      260,      290,      260,      310} /* NN, TG, A, T, G */
09428      , {      290,      240,      270,      240,      290} /* NN, TG, A, T, T */
09429      }
09430      }
09431      , { { {      290,      290,      290,      280,      290} /* NN, TG, C, E, E */
09432      , {      290,      290,      290,      280,      290} /* NN, TG, C, E, A */
09433      , {      270,      270,      270,      260,      270} /* NN, TG, C, E, C */
09434      , {      290,      290,      290,      280,      290} /* NN, TG, C, E, G */
09435      , {      290,      290,      290,      280,      290} /* NN, TG, C, E, T */
09436      }
09437      , { {      290,      290,      290,      280,      290} /* NN, TG, C, A, E */
09438      , {      240,      240,      240,      230,      240} /* NN, TG, C, A, A */
09439      , {      270,      270,      270,      260,      270} /* NN, TG, C, A, C */
09440      , {      240,      240,      240,      230,      240} /* NN, TG, C, A, G */
09441      , {      290,      290,      290,      280,      290} /* NN, TG, C, A, T */
09442      }
09443      , { {      270,      270,      270,      260,      270} /* NN, TG, C, C, E */
09444      , {      270,      270,      270,      260,      270} /* NN, TG, C, C, A */
09445      , {      270,      270,      270,      260,      270} /* NN, TG, C, C, C */
09446      , {      240,      240,      240,      230,      240} /* NN, TG, C, C, G */
09447      , {      270,      270,      270,      260,      270} /* NN, TG, C, C, T */
09448      }
09449      , { {      290,      290,      290,      280,      290} /* NN, TG, C, G, E */
09450      , {      240,      240,      240,      230,      240} /* NN, TG, C, G, A */
09451      , {      260,      260,      260,      250,      260} /* NN, TG, C, G, C */
09452      , {      240,      240,      240,      230,      240} /* NN, TG, C, G, G */
09453      , {      290,      290,      290,      280,      290} /* NN, TG, C, G, T */
09454      }
09455      , { {      290,      290,      290,      280,      290} /* NN, TG, C, T, E */
09456      , {      290,      290,      290,      280,      290} /* NN, TG, C, T, A */
09457      , {      270,      270,      270,      260,      270} /* NN, TG, C, T, C */
09458      , {      290,      290,      290,      280,      290} /* NN, TG, C, T, G */
09459      , {      270,      270,      270,      260,      270} /* NN, TG, C, T, T */
09460      }
09461      }
09462      , { { {      310,      260,      310,      260,      310} /* NN, TG, G, E, E */
09463      , {      310,      260,      310,      260,      310} /* NN, TG, G, E, A */
09464      , {      290,      240,      290,      240,      290} /* NN, TG, G, E, C */

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09465      , {      310,      260,      310,      260,      310} /* NN, TG, G, E, G */
09466      , {      310,      260,      310,      260,      310} /* NN, TG, G, E, T */
09467      }
09468      , { {      310,      260,      310,      260,      310} /* NN, TG, G, A, E */
09469      , {      260,      210,      260,      210,      260} /* NN, TG, G, A, A */
09470      , {      290,      240,      290,      240,      290} /* NN, TG, G, A, C */
09471      , {      260,      210,      260,      210,      260} /* NN, TG, G, A, G */
09472      , {      310,      260,      310,      260,      310} /* NN, TG, G, A, T */
09473      }
09474      , { {      290,      240,      290,      240,      290} /* NN, TG, G, C, E */
09475      , {      290,      240,      290,      240,      290} /* NN, TG, G, C, A */
09476      , {      290,      240,      290,      240,      290} /* NN, TG, G, C, C */
09477      , {      260,      210,      260,      210,      260} /* NN, TG, G, C, G */
09478      , {      290,      240,      290,      240,      290} /* NN, TG, G, C, T */
09479      }
09480      , { {      310,      260,      310,      260,      310} /* NN, TG, G, G, E */
09481      , {      260,      210,      260,      210,      260} /* NN, TG, G, G, A */
09482      , {      280,      230,      280,      230,      280} /* NN, TG, G, G, C */
09483      , {      260,      210,      260,      210,      260} /* NN, TG, G, G, G */
09484      , {      310,      260,      310,      260,      310} /* NN, TG, G, G, T */
09485      }
09486      , { {      310,      260,      310,      260,      310} /* NN, TG, G, T, E */
09487      , {      310,      260,      310,      260,      310} /* NN, TG, G, T, A */
09488      , {      290,      240,      290,      240,      290} /* NN, TG, G, T, C */
09489      , {      310,      260,      310,      260,      310} /* NN, TG, G, T, G */
09490      , {      290,      240,      290,      240,      290} /* NN, TG, G, T, T */
09491      }
09492      }
09493      , { { {      310,      310,      290,      310,      290} /* NN, TG, T, E, E */
09494      , {      310,      310,      290,      310,      290} /* NN, TG, T, E, A */
09495      , {      290,      290,      270,      290,      270} /* NN, TG, T, E, C */
09496      , {      310,      310,      290,      310,      290} /* NN, TG, T, E, G */
09497      , {      310,      310,      290,      310,      290} /* NN, TG, T, E, T */
09498      }
09499      , { {      310,      310,      290,      310,      290} /* NN, TG, T, A, E */
09500      , {      260,      260,      240,      260,      240} /* NN, TG, T, A, A */
09501      , {      290,      290,      270,      290,      270} /* NN, TG, T, A, C */
09502      , {      260,      260,      240,      260,      240} /* NN, TG, T, A, G */
09503      , {      310,      310,      290,      310,      290} /* NN, TG, T, A, T */
09504      }
09505      , { {      290,      290,      270,      290,      270} /* NN, TG, T, C, E */
09506      , {      290,      290,      270,      290,      270} /* NN, TG, T, C, A */
09507      , {      290,      290,      270,      290,      270} /* NN, TG, T, C, C */
09508      , {      260,      260,      240,      260,      240} /* NN, TG, T, C, G */
09509      , {      290,      290,      270,      290,      270} /* NN, TG, T, C, T */
09510      }
09511      , { {      310,      310,      290,      310,      290} /* NN, TG, T, G, E */
09512      , {      260,      260,      240,      260,      240} /* NN, TG, T, G, A */
09513      , {      280,      280,      260,      280,      260} /* NN, TG, T, G, C */
09514      , {      260,      260,      240,      260,      240} /* NN, TG, T, G, G */
09515      , {      310,      310,      290,      310,      290} /* NN, TG, T, G, T */
09516      }
09517      , { {      310,      310,      290,      310,      290} /* NN, TG, T, T, E */
09518      , {      310,      310,      290,      310,      290} /* NN, TG, T, T, A */
09519      , {      290,      290,      270,      290,      270} /* NN, TG, T, T, C */
09520      , {      310,      310,      290,      310,      290} /* NN, TG, T, T, G */
09521      , {      290,      290,      270,      290,      270} /* NN, TG, T, T, T */
09522      }
09523      }
09524      }
09525      , { { { {      310,      310,      310,      310,      310} /* NN, AT, E, E, E */
09526      , {      310,      310,      310,      310,      310} /* NN, AT, E, E, A */
09527      , {      280,      280,      280,      280,      280} /* NN, AT, E, E, C */
09528      , {      310,      310,      310,      310,      310} /* NN, AT, E, E, G */
09529      , {      310,      310,      310,      310,      310} /* NN, AT, E, E, T */
09530      }
09531      , { {      310,      310,      310,      310,      310} /* NN, AT, E, A, E */
09532      , {      240,      240,      240,      240,      240} /* NN, AT, E, A, A */
09533      , {      260,      260,      260,      260,      260} /* NN, AT, E, A, C */
09534      , {      250,      250,      250,      250,      250} /* NN, AT, E, A, G */
09535      , {      310,      310,      310,      310,      310} /* NN, AT, E, A, T */
09536      }
09537      , { {      290,      290,      290,      290,      290} /* NN, AT, E, C, E */
09538      , {      260,      260,      260,      260,      260} /* NN, AT, E, C, A */
09539      , {      280,      280,      280,      280,      280} /* NN, AT, E, C, C */
09540      , {      290,      290,      290,      290,      290} /* NN, AT, E, C, G */
09541      , {      270,      270,      270,      270,      270} /* NN, AT, E, C, T */
09542      }
09543      , { {      310,      310,      310,      310,      310} /* NN, AT, E, G, E */
09544      , {      250,      250,      250,      250,      250} /* NN, AT, E, G, A */
09545      , {      270,      270,      270,      270,      270} /* NN, AT, E, G, C */
09546      , {      250,      250,      250,      250,      250} /* NN, AT, E, G, G */
09547      , {      310,      310,      310,      310,      310} /* NN, AT, E, G, T */
09548      }
09549      , { {      310,      310,      310,      310,      310} /* NN, AT, E, T, E */
09550      , {      310,      310,      310,      310,      310} /* NN, AT, E, T, A */
09551      , {      270,      270,      270,      270,      270} /* NN, AT, E, T, C */

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09552      , {      310,      310,      310,      310,      310} /* NN,AT,E,T,G */
09553      , {      250,      250,      250,      250,      250} /* NN,AT,E,T,T */
09554      }
09555      }
09556      , {{{      310,      260,      290,      260,      310} /* NN,AT,A,E,E */
09557      , {      310,      260,      290,      260,      310} /* NN,AT,A,E,A */
09558      , {      280,      230,      260,      230,      280} /* NN,AT,A,E,C */
09559      , {      310,      260,      290,      260,      310} /* NN,AT,A,E,G */
09560      , {      310,      260,      290,      260,      310} /* NN,AT,A,E,T */
09561      }
09562      , {{{      310,      260,      290,      260,      310} /* NN,AT,A,A,E */
09563      , {      240,      190,      220,      190,      240} /* NN,AT,A,A,A */
09564      , {      260,      210,      240,      210,      260} /* NN,AT,A,A,C */
09565      , {      250,      200,      230,      200,      250} /* NN,AT,A,A,G */
09566      , {      310,      260,      290,      260,      310} /* NN,AT,A,A,T */
09567      }
09568      , {{{      290,      240,      270,      240,      290} /* NN,AT,A,C,E */
09569      , {      260,      210,      240,      210,      260} /* NN,AT,A,C,A */
09570      , {      280,      230,      260,      230,      280} /* NN,AT,A,C,C */
09571      , {      290,      240,      270,      240,      290} /* NN,AT,A,C,G */
09572      , {      270,      220,      250,      220,      270} /* NN,AT,A,C,T */
09573      }
09574      , {{{      310,      260,      290,      260,      310} /* NN,AT,A,G,E */
09575      , {      250,      200,      230,      200,      250} /* NN,AT,A,G,A */
09576      , {      270,      220,      250,      220,      270} /* NN,AT,A,G,C */
09577      , {      250,      200,      230,      200,      250} /* NN,AT,A,G,G */
09578      , {      310,      260,      290,      260,      310} /* NN,AT,A,G,T */
09579      }
09580      , {{{      310,      260,      290,      260,      310} /* NN,AT,A,T,E */
09581      , {      310,      260,      290,      260,      310} /* NN,AT,A,T,A */
09582      , {      270,      220,      250,      220,      270} /* NN,AT,A,T,C */
09583      , {      310,      260,      290,      260,      310} /* NN,AT,A,T,G */
09584      , {      250,      200,      230,      200,      250} /* NN,AT,A,T,T */
09585      }
09586      }
09587      , {{{      290,      290,      290,      280,      290} /* NN,AT,C,E,E */
09588      , {      290,      290,      290,      280,      290} /* NN,AT,C,E,A */
09589      , {      260,      260,      260,      250,      260} /* NN,AT,C,E,C */
09590      , {      290,      290,      290,      280,      290} /* NN,AT,C,E,G */
09591      , {      290,      290,      290,      280,      290} /* NN,AT,C,E,T */
09592      }
09593      , {{{      290,      290,      290,      280,      290} /* NN,AT,C,A,E */
09594      , {      220,      220,      220,      210,      220} /* NN,AT,C,A,A */
09595      , {      240,      240,      240,      230,      240} /* NN,AT,C,A,C */
09596      , {      230,      230,      230,      220,      230} /* NN,AT,C,A,G */
09597      , {      290,      290,      290,      280,      290} /* NN,AT,C,A,T */
09598      }
09599      , {{{      270,      270,      270,      260,      270} /* NN,AT,C,C,E */
09600      , {      240,      240,      240,      230,      240} /* NN,AT,C,C,A */
09601      , {      260,      260,      260,      250,      260} /* NN,AT,C,C,C */
09602      , {      270,      270,      270,      260,      270} /* NN,AT,C,C,G */
09603      , {      250,      250,      250,      240,      250} /* NN,AT,C,C,T */
09604      }
09605      , {{{      290,      290,      290,      280,      290} /* NN,AT,C,G,E */
09606      , {      230,      230,      230,      220,      230} /* NN,AT,C,G,A */
09607      , {      250,      250,      250,      240,      250} /* NN,AT,C,G,C */
09608      , {      230,      230,      230,      220,      230} /* NN,AT,C,G,G */
09609      , {      290,      290,      290,      280,      290} /* NN,AT,C,G,T */
09610      }
09611      , {{{      290,      290,      290,      280,      290} /* NN,AT,C,T,E */
09612      , {      290,      290,      290,      280,      290} /* NN,AT,C,T,A */
09613      , {      250,      250,      250,      240,      250} /* NN,AT,C,T,C */
09614      , {      290,      290,      290,      280,      290} /* NN,AT,C,T,G */
09615      , {      230,      230,      230,      220,      230} /* NN,AT,C,T,T */
09616      }
09617      }
09618      , {{{      310,      260,      310,      260,      310} /* NN,AT,G,E,E */
09619      , {      310,      260,      310,      260,      310} /* NN,AT,G,E,A */
09620      , {      280,      230,      280,      230,      280} /* NN,AT,G,E,C */
09621      , {      310,      260,      310,      260,      310} /* NN,AT,G,E,G */
09622      , {      310,      260,      310,      260,      310} /* NN,AT,G,E,T */
09623      }
09624      , {{{      310,      260,      310,      260,      310} /* NN,AT,G,A,E */
09625      , {      240,      190,      240,      190,      240} /* NN,AT,G,A,A */
09626      , {      260,      210,      260,      210,      260} /* NN,AT,G,A,C */
09627      , {      250,      200,      250,      200,      250} /* NN,AT,G,A,G */
09628      , {      310,      260,      310,      260,      310} /* NN,AT,G,A,T */
09629      }
09630      , {{{      290,      240,      290,      240,      290} /* NN,AT,G,C,E */
09631      , {      260,      210,      260,      210,      260} /* NN,AT,G,C,A */
09632      , {      280,      230,      280,      230,      280} /* NN,AT,G,C,C */
09633      , {      290,      240,      290,      240,      290} /* NN,AT,G,C,G */
09634      , {      270,      220,      270,      220,      270} /* NN,AT,G,C,T */
09635      }
09636      , {{{      310,      260,      310,      260,      310} /* NN,AT,G,G,E */
09637      , {      250,      200,      250,      200,      250} /* NN,AT,G,G,A */
09638      , {      270,      220,      270,      220,      270} /* NN,AT,G,G,C */

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09639      , {      250,      200,      250,      200,      250} /* NN,AT,G,G,G */
09640      , {      310,      260,      310,      260,      310} /* NN,AT,G,G,T */
09641      }
09642      , {{      310,      260,      310,      260,      310} /* NN,AT,G,T,E */
09643      , {      310,      260,      310,      260,      310} /* NN,AT,G,T,A */
09644      , {      270,      220,      270,      220,      270} /* NN,AT,G,T,C */
09645      , {      310,      260,      310,      260,      310} /* NN,AT,G,T,G */
09646      , {      250,      200,      250,      200,      250} /* NN,AT,G,T,T */
09647      }
09648      }
09649      , {{{      310,      310,      290,      310,      290} /* NN,AT,T,E,E */
09650      , {      310,      310,      290,      310,      290} /* NN,AT,T,E,A */
09651      , {      280,      280,      260,      280,      260} /* NN,AT,T,E,C */
09652      , {      310,      310,      290,      310,      290} /* NN,AT,T,E,G */
09653      , {      310,      310,      290,      310,      290} /* NN,AT,T,E,T */
09654      }
09655      , {{      310,      310,      290,      310,      290} /* NN,AT,T,A,E */
09656      , {      240,      240,      220,      240,      220} /* NN,AT,T,A,A */
09657      , {      260,      260,      240,      260,      240} /* NN,AT,T,A,C */
09658      , {      250,      250,      230,      250,      230} /* NN,AT,T,A,G */
09659      , {      310,      310,      290,      310,      290} /* NN,AT,T,A,T */
09660      }
09661      , {{      290,      290,      270,      290,      270} /* NN,AT,T,C,E */
09662      , {      260,      260,      240,      260,      240} /* NN,AT,T,C,A */
09663      , {      280,      280,      260,      280,      260} /* NN,AT,T,C,C */
09664      , {      290,      290,      270,      290,      270} /* NN,AT,T,C,G */
09665      , {      270,      270,      250,      270,      250} /* NN,AT,T,C,T */
09666      }
09667      , {{{      310,      310,      290,      310,      290} /* NN,AT,T,G,E */
09668      , {      250,      250,      230,      250,      230} /* NN,AT,T,G,A */
09669      , {      270,      270,      250,      270,      250} /* NN,AT,T,G,C */
09670      , {      250,      250,      230,      250,      230} /* NN,AT,T,G,G */
09671      , {      310,      310,      290,      310,      290} /* NN,AT,T,G,T */
09672      }
09673      , {{      310,      310,      290,      310,      290} /* NN,AT,T,T,E */
09674      , {      310,      310,      290,      310,      290} /* NN,AT,T,T,A */
09675      , {      270,      270,      250,      270,      250} /* NN,AT,T,T,C */
09676      , {      310,      310,      290,      310,      290} /* NN,AT,T,T,G */
09677      , {      250,      250,      230,      250,      230} /* NN,AT,T,T,T */
09678      }
09679      }
09680      }
09681      , {{{      310,      310,      310,      310,      310} /* NN,TA,E,E,E */
09682      , {      310,      310,      310,      310,      310} /* NN,TA,E,E,A */
09683      , {      280,      280,      280,      280,      280} /* NN,TA,E,E,C */
09684      , {      310,      310,      310,      310,      310} /* NN,TA,E,E,G */
09685      , {      310,      310,      310,      310,      310} /* NN,TA,E,E,T */
09686      }
09687      , {{      310,      310,      310,      310,      310} /* NN,TA,E,A,E */
09688      , {      250,      250,      250,      250,      250} /* NN,TA,E,A,A */
09689      , {      260,      260,      260,      260,      260} /* NN,TA,E,A,C */
09690      , {      250,      250,      250,      250,      250} /* NN,TA,E,A,G */
09691      , {      310,      310,      310,      310,      310} /* NN,TA,E,A,T */
09692      }
09693      , {{      310,      310,      310,      310,      310} /* NN,TA,E,C,E */
09694      , {      260,      260,      260,      260,      260} /* NN,TA,E,C,A */
09695      , {      280,      280,      280,      280,      280} /* NN,TA,E,C,C */
09696      , {      310,      310,      310,      310,      310} /* NN,TA,E,C,G */
09697      , {      270,      270,      270,      270,      270} /* NN,TA,E,C,T */
09698      }
09699      , {{      300,      300,      300,      300,      300} /* NN,TA,E,G,E */
09700      , {      250,      250,      250,      250,      250} /* NN,TA,E,G,A */
09701      , {      260,      260,      260,      260,      260} /* NN,TA,E,G,C */
09702      , {      250,      250,      250,      250,      250} /* NN,TA,E,G,G */
09703      , {      300,      300,      300,      300,      300} /* NN,TA,E,G,T */
09704      }
09705      , {{      310,      310,      310,      310,      310} /* NN,TA,E,T,E */
09706      , {      310,      310,      310,      310,      310} /* NN,TA,E,T,A */
09707      , {      270,      270,      270,      270,      270} /* NN,TA,E,T,C */
09708      , {      310,      310,      310,      310,      310} /* NN,TA,E,T,G */
09709      , {      250,      250,      250,      250,      250} /* NN,TA,E,T,T */
09710      }
09711      }
09712      , {{{      310,      260,      290,      260,      310} /* NN,TA,A,E,E */
09713      , {      310,      260,      290,      260,      310} /* NN,TA,A,E,A */
09714      , {      280,      230,      260,      230,      280} /* NN,TA,A,E,C */
09715      , {      310,      260,      290,      260,      310} /* NN,TA,A,E,G */
09716      , {      310,      260,      290,      260,      310} /* NN,TA,A,E,T */
09717      }
09718      , {{      310,      260,      290,      260,      310} /* NN,TA,A,A,E */
09719      , {      250,      200,      230,      200,      250} /* NN,TA,A,A,A */
09720      , {      260,      210,      240,      210,      260} /* NN,TA,A,A,C */
09721      , {      250,      200,      230,      200,      250} /* NN,TA,A,A,G */
09722      , {      310,      260,      290,      260,      310} /* NN,TA,A,A,T */
09723      }
09724      , {{      310,      260,      290,      260,      310} /* NN,TA,A,C,E */
09725      , {      260,      210,      240,      210,      260} /* NN,TA,A,C,A */

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09726 , { 280, 230, 260, 230, 280} /* NN, TA, A, C, C */
09727 , { 310, 260, 290, 260, 310} /* NN, TA, A, C, G */
09728 , { 270, 220, 250, 220, 270} /* NN, TA, A, C, T */
09729 }
09730 , { { 300, 250, 280, 250, 300} /* NN, TA, A, G, E */
09731 , { 250, 200, 230, 200, 250} /* NN, TA, A, G, A */
09732 , { 260, 210, 240, 210, 260} /* NN, TA, A, G, C */
09733 , { 250, 200, 230, 200, 250} /* NN, TA, A, G, G */
09734 , { 300, 250, 280, 250, 300} /* NN, TA, A, G, T */
09735 }
09736 , { { 310, 260, 290, 260, 310} /* NN, TA, A, T, E */
09737 , { 310, 260, 290, 260, 310} /* NN, TA, A, T, A */
09738 , { 270, 220, 250, 220, 270} /* NN, TA, A, T, C */
09739 , { 310, 260, 290, 260, 310} /* NN, TA, A, T, G */
09740 , { 250, 200, 230, 200, 250} /* NN, TA, A, T, T */
09741 }
09742 }
09743 , { { { 290, 290, 290, 280, 290} /* NN, TA, C, E, E */
09744 , { 290, 290, 290, 280, 290} /* NN, TA, C, E, A */
09745 , { 260, 260, 260, 250, 260} /* NN, TA, C, E, C */
09746 , { 290, 290, 290, 280, 290} /* NN, TA, C, E, G */
09747 , { 290, 290, 290, 280, 290} /* NN, TA, C, E, T */
09748 }
09749 , { { 290, 290, 290, 280, 290} /* NN, TA, C, A, E */
09750 , { 230, 230, 230, 220, 230} /* NN, TA, C, A, A */
09751 , { 240, 240, 240, 230, 240} /* NN, TA, C, A, C */
09752 , { 230, 230, 230, 220, 230} /* NN, TA, C, A, G */
09753 , { 290, 290, 290, 280, 290} /* NN, TA, C, A, T */
09754 }
09755 , { { 290, 290, 290, 280, 290} /* NN, TA, C, C, E */
09756 , { 240, 240, 240, 230, 240} /* NN, TA, C, C, A */
09757 , { 260, 260, 260, 250, 260} /* NN, TA, C, C, C */
09758 , { 290, 290, 290, 280, 290} /* NN, TA, C, C, G */
09759 , { 250, 250, 250, 240, 250} /* NN, TA, C, C, T */
09760 }
09761 , { { 280, 280, 280, 270, 280} /* NN, TA, C, G, E */
09762 , { 230, 230, 230, 220, 230} /* NN, TA, C, G, A */
09763 , { 240, 240, 240, 230, 240} /* NN, TA, C, G, C */
09764 , { 230, 230, 230, 220, 230} /* NN, TA, C, G, G */
09765 , { 280, 280, 280, 270, 280} /* NN, TA, C, G, T */
09766 }
09767 , { { 290, 290, 290, 280, 290} /* NN, TA, C, T, E */
09768 , { 290, 290, 290, 280, 290} /* NN, TA, C, T, A */
09769 , { 250, 250, 250, 240, 250} /* NN, TA, C, T, C */
09770 , { 290, 290, 290, 280, 290} /* NN, TA, C, T, G */
09771 , { 230, 230, 230, 220, 230} /* NN, TA, C, T, T */
09772 }
09773 }
09774 , { { { 310, 260, 310, 260, 310} /* NN, TA, G, E, E */
09775 , { 310, 260, 310, 260, 310} /* NN, TA, G, E, A */
09776 , { 280, 230, 280, 230, 280} /* NN, TA, G, E, C */
09777 , { 310, 260, 310, 260, 310} /* NN, TA, G, E, G */
09778 , { 310, 260, 310, 260, 310} /* NN, TA, G, E, T */
09779 }
09780 , { { 310, 260, 310, 260, 310} /* NN, TA, G, A, E */
09781 , { 250, 200, 250, 200, 250} /* NN, TA, G, A, A */
09782 , { 260, 210, 260, 210, 260} /* NN, TA, G, A, C */
09783 , { 250, 200, 250, 200, 250} /* NN, TA, G, A, G */
09784 , { 310, 260, 310, 260, 310} /* NN, TA, G, A, T */
09785 }
09786 , { { 310, 260, 310, 260, 310} /* NN, TA, G, C, E */
09787 , { 260, 210, 260, 210, 260} /* NN, TA, G, C, A */
09788 , { 280, 230, 280, 230, 280} /* NN, TA, G, C, C */
09789 , { 310, 260, 310, 260, 310} /* NN, TA, G, C, G */
09790 , { 270, 220, 270, 220, 270} /* NN, TA, G, C, T */
09791 }
09792 , { { 300, 250, 300, 250, 300} /* NN, TA, G, G, E */
09793 , { 250, 200, 250, 200, 250} /* NN, TA, G, G, A */
09794 , { 260, 210, 260, 210, 260} /* NN, TA, G, G, C */
09795 , { 250, 200, 250, 200, 250} /* NN, TA, G, G, G */
09796 , { 300, 250, 300, 250, 300} /* NN, TA, G, G, T */
09797 }
09798 , { { 310, 260, 310, 260, 310} /* NN, TA, G, T, E */
09799 , { 310, 260, 310, 260, 310} /* NN, TA, G, T, A */
09800 , { 270, 220, 270, 220, 270} /* NN, TA, G, T, C */
09801 , { 310, 260, 310, 260, 310} /* NN, TA, G, T, G */
09802 , { 250, 200, 250, 200, 250} /* NN, TA, G, T, T */
09803 }
09804 }
09805 , { { { 310, 310, 290, 310, 290} /* NN, TA, T, E, E */
09806 , { 310, 310, 290, 310, 290} /* NN, TA, T, E, A */
09807 , { 280, 280, 260, 280, 260} /* NN, TA, T, E, C */
09808 , { 310, 310, 290, 310, 290} /* NN, TA, T, E, G */
09809 , { 310, 310, 290, 310, 290} /* NN, TA, T, E, T */
09810 }
09811 , { { 310, 310, 290, 310, 290} /* NN, TA, T, A, E */
09812 , { 250, 250, 230, 250, 230} /* NN, TA, T, A, A */
```

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09813      , {      260,      260,      240,      260,      240} /* NN, TA, T, A, C */
09814      , {      250,      250,      230,      250,      230} /* NN, TA, T, A, G */
09815      , {      310,      310,      290,      310,      290} /* NN, TA, T, A, T */
09816      }
09817      , { {      310,      310,      290,      310,      290} /* NN, TA, T, C, E */
09818      , {      260,      260,      240,      260,      240} /* NN, TA, T, C, A */
09819      , {      280,      280,      260,      280,      260} /* NN, TA, T, C, C */
09820      , {      310,      310,      290,      310,      290} /* NN, TA, T, C, G */
09821      , {      270,      270,      250,      270,      250} /* NN, TA, T, C, T */
09822      }
09823      , { {      300,      300,      280,      300,      280} /* NN, TA, T, G, E */
09824      , {      250,      250,      230,      250,      230} /* NN, TA, T, G, A */
09825      , {      260,      260,      240,      260,      240} /* NN, TA, T, G, C */
09826      , {      250,      250,      230,      250,      230} /* NN, TA, T, G, G */
09827      , {      300,      300,      280,      300,      280} /* NN, TA, T, G, T */
09828      }
09829      , { {      310,      310,      290,      310,      290} /* NN, TA, T, T, E */
09830      , {      310,      310,      290,      310,      290} /* NN, TA, T, T, A */
09831      , {      270,      270,      250,      270,      250} /* NN, TA, T, T, C */
09832      , {      310,      310,      290,      310,      290} /* NN, TA, T, T, G */
09833      , {      250,      250,      230,      250,      230} /* NN, TA, T, T, T */
09834      }
09835      }
09836      }
09837      , { { {      310,      310,      310,      310,      310} /* NN, NN, E, E, E */
09838      , {      310,      310,      310,      310,      310} /* NN, NN, E, E, A */
09839      , {      290,      290,      290,      290,      290} /* NN, NN, E, E, C */
09840      , {      310,      310,      310,      310,      310} /* NN, NN, E, E, G */
09841      , {      310,      310,      310,      310,      310} /* NN, NN, E, E, T */
09842      }
09843      , { {      310,      310,      310,      310,      310} /* NN, NN, E, A, E */
09844      , {      260,      260,      260,      260,      260} /* NN, NN, E, A, A */
09845      , {      290,      290,      290,      290,      290} /* NN, NN, E, A, C */
09846      , {      260,      260,      260,      260,      260} /* NN, NN, E, A, G */
09847      , {      310,      310,      310,      310,      310} /* NN, NN, E, A, T */
09848      }
09849      , { {      310,      310,      310,      310,      310} /* NN, NN, E, C, E */
09850      , {      290,      290,      290,      290,      290} /* NN, NN, E, C, A */
09851      , {      290,      290,      290,      290,      290} /* NN, NN, E, C, C */
09852      , {      310,      310,      310,      310,      310} /* NN, NN, E, C, G */
09853      , {      290,      290,      290,      290,      290} /* NN, NN, E, C, T */
09854      }
09855      , { {      310,      310,      310,      310,      310} /* NN, NN, E, G, E */
09856      , {      260,      260,      260,      260,      260} /* NN, NN, E, G, A */
09857      , {      280,      280,      280,      280,      280} /* NN, NN, E, G, C */
09858      , {      260,      260,      260,      260,      260} /* NN, NN, E, G, G */
09859      , {      310,      310,      310,      310,      310} /* NN, NN, E, G, T */
09860      }
09861      , { {      310,      310,      310,      310,      310} /* NN, NN, E, T, E */
09862      , {      310,      310,      310,      310,      310} /* NN, NN, E, T, A */
09863      , {      290,      290,      290,      290,      290} /* NN, NN, E, T, C */
09864      , {      310,      310,      310,      310,      310} /* NN, NN, E, T, G */
09865      , {      290,      290,      290,      290,      290} /* NN, NN, E, T, T */
09866      }
09867      }
09868      , { { {      310,      260,      290,      260,      310} /* NN, NN, A, E, E */
09869      , {      310,      260,      290,      260,      310} /* NN, NN, A, E, A */
09870      , {      290,      240,      270,      240,      290} /* NN, NN, A, E, C */
09871      , {      310,      260,      290,      260,      310} /* NN, NN, A, E, G */
09872      , {      310,      260,      290,      260,      310} /* NN, NN, A, E, T */
09873      }
09874      , { {      310,      260,      290,      260,      310} /* NN, NN, A, A, E */
09875      , {      260,      210,      240,      210,      260} /* NN, NN, A, A, A */
09876      , {      290,      240,      270,      240,      290} /* NN, NN, A, A, C */
09877      , {      260,      210,      240,      210,      260} /* NN, NN, A, A, G */
09878      , {      310,      260,      290,      260,      310} /* NN, NN, A, A, T */
09879      }
09880      , { {      310,      260,      290,      260,      310} /* NN, NN, A, C, E */
09881      , {      290,      240,      270,      240,      290} /* NN, NN, A, C, A */
09882      , {      290,      240,      270,      240,      290} /* NN, NN, A, C, C */
09883      , {      310,      260,      290,      260,      310} /* NN, NN, A, C, G */
09884      , {      290,      240,      270,      240,      290} /* NN, NN, A, C, T */
09885      }
09886      , { {      310,      260,      290,      260,      310} /* NN, NN, A, G, E */
09887      , {      260,      210,      240,      210,      260} /* NN, NN, A, G, A */
09888      , {      280,      230,      260,      230,      280} /* NN, NN, A, G, C */
09889      , {      260,      210,      240,      210,      260} /* NN, NN, A, G, G */
09890      , {      310,      260,      290,      260,      310} /* NN, NN, A, G, T */
09891      }
09892      , { {      310,      260,      290,      260,      310} /* NN, NN, A, T, E */
09893      , {      310,      260,      290,      260,      310} /* NN, NN, A, T, A */
09894      , {      290,      240,      270,      240,      290} /* NN, NN, A, T, C */
09895      , {      310,      260,      290,      260,      310} /* NN, NN, A, T, G */
09896      , {      290,      240,      270,      240,      290} /* NN, NN, A, T, T */
09897      }
09898      }
09899      , { { {      290,      290,      290,      280,      290} /* NN, NN, C, E, E */

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09900 , { 290, 290, 290, 280, 290} /* NN,NN,C,E,A */
09901 , { 270, 270, 270, 260, 270} /* NN,NN,C,E,C */
09902 , { 290, 290, 290, 280, 290} /* NN,NN,C,E,G */
09903 , { 290, 290, 290, 280, 290} /* NN,NN,C,E,T */
09904 }
09905 , { { 290, 290, 290, 280, 290} /* NN,NN,C,A,E */
09906 , { 240, 240, 240, 230, 240} /* NN,NN,C,A,A */
09907 , { 270, 270, 270, 260, 270} /* NN,NN,C,A,C */
09908 , { 240, 240, 240, 230, 240} /* NN,NN,C,A,G */
09909 , { 290, 290, 290, 280, 290} /* NN,NN,C,A,T */
09910 }
09911 , { { 290, 290, 290, 280, 290} /* NN,NN,C,C,E */
09912 , { 270, 270, 270, 260, 270} /* NN,NN,C,C,A */
09913 , { 270, 270, 270, 260, 270} /* NN,NN,C,C,C */
09914 , { 290, 290, 290, 280, 290} /* NN,NN,C,C,G */
09915 , { 270, 270, 270, 260, 270} /* NN,NN,C,C,T */
09916 }
09917 , { { 290, 290, 290, 280, 290} /* NN,NN,C,G,E */
09918 , { 240, 240, 240, 230, 240} /* NN,NN,C,G,A */
09919 , { 260, 260, 260, 250, 260} /* NN,NN,C,G,C */
09920 , { 240, 240, 240, 230, 240} /* NN,NN,C,G,G */
09921 , { 290, 290, 290, 280, 290} /* NN,NN,C,G,T */
09922 }
09923 , { { 290, 290, 290, 280, 290} /* NN,NN,C,T,E */
09924 , { 290, 290, 290, 280, 290} /* NN,NN,C,T,A */
09925 , { 270, 270, 270, 260, 270} /* NN,NN,C,T,C */
09926 , { 290, 290, 290, 280, 290} /* NN,NN,C,T,G */
09927 , { 270, 270, 270, 260, 270} /* NN,NN,C,T,T */
09928 }
09929 }
09930 , { { { 310, 260, 310, 260, 310} /* NN,NN,G,E,E */
09931 , { 310, 260, 310, 260, 310} /* NN,NN,G,E,A */
09932 , { 290, 240, 290, 240, 290} /* NN,NN,G,E,C */
09933 , { 310, 260, 310, 260, 310} /* NN,NN,G,E,G */
09934 , { 310, 260, 310, 260, 310} /* NN,NN,G,E,T */
09935 }
09936 , { { 310, 260, 310, 260, 310} /* NN,NN,G,A,E */
09937 , { 260, 210, 260, 210, 260} /* NN,NN,G,A,A */
09938 , { 290, 240, 290, 240, 290} /* NN,NN,G,A,C */
09939 , { 260, 210, 260, 210, 260} /* NN,NN,G,A,G */
09940 , { 310, 260, 310, 260, 310} /* NN,NN,G,A,T */
09941 }
09942 , { { 310, 260, 310, 260, 310} /* NN,NN,G,C,E */
09943 , { 290, 240, 290, 240, 290} /* NN,NN,G,C,A */
09944 , { 290, 240, 290, 240, 290} /* NN,NN,G,C,C */
09945 , { 310, 260, 310, 260, 310} /* NN,NN,G,C,G */
09946 , { 290, 240, 290, 240, 290} /* NN,NN,G,C,T */
09947 }
09948 , { { 310, 260, 310, 260, 310} /* NN,NN,G,G,E */
09949 , { 260, 210, 260, 210, 260} /* NN,NN,G,G,A */
09950 , { 280, 230, 280, 230, 280} /* NN,NN,G,G,C */
09951 , { 260, 210, 260, 210, 260} /* NN,NN,G,G,G */
09952 , { 310, 260, 310, 260, 310} /* NN,NN,G,G,T */
09953 }
09954 , { { 310, 260, 310, 260, 310} /* NN,NN,G,T,E */
09955 , { 310, 260, 310, 260, 310} /* NN,NN,G,T,A */
09956 , { 290, 240, 290, 240, 290} /* NN,NN,G,T,C */
09957 , { 310, 260, 310, 260, 310} /* NN,NN,G,T,G */
09958 , { 290, 240, 290, 240, 290} /* NN,NN,G,T,T */
09959 }
09960 }
09961 , { { { 310, 310, 290, 310, 290} /* NN,NN,T,E,E */
09962 , { 310, 310, 290, 310, 290} /* NN,NN,T,E,A */
09963 , { 290, 290, 270, 290, 270} /* NN,NN,T,E,C */
09964 , { 310, 310, 290, 310, 290} /* NN,NN,T,E,G */
09965 , { 310, 310, 290, 310, 290} /* NN,NN,T,E,T */
09966 }
09967 , { { 310, 310, 290, 310, 290} /* NN,NN,T,A,E */
09968 , { 260, 260, 240, 260, 240} /* NN,NN,T,A,A */
09969 , { 290, 290, 270, 290, 270} /* NN,NN,T,A,C */
09970 , { 260, 260, 240, 260, 240} /* NN,NN,T,A,G */
09971 , { 310, 310, 290, 310, 290} /* NN,NN,T,A,T */
09972 }
09973 , { { 310, 310, 290, 310, 290} /* NN,NN,T,C,E */
09974 , { 290, 290, 270, 290, 270} /* NN,NN,T,C,A */
09975 , { 290, 290, 270, 290, 270} /* NN,NN,T,C,C */
09976 , { 310, 310, 290, 310, 290} /* NN,NN,T,C,G */
09977 , { 290, 290, 270, 290, 270} /* NN,NN,T,C,T */
09978 }
09979 , { { 310, 310, 290, 310, 290} /* NN,NN,T,G,E */
09980 , { 260, 260, 240, 260, 240} /* NN,NN,T,G,A */
09981 , { 280, 280, 260, 280, 260} /* NN,NN,T,G,C */
09982 , { 260, 260, 240, 260, 240} /* NN,NN,T,G,G */
09983 , { 310, 310, 290, 310, 290} /* NN,NN,T,G,T */
09984 }
09985 , { { 310, 310, 290, 310, 290} /* NN,NN,T,T,E */
09986 , { 310, 310, 290, 310, 290} /* NN,NN,T,T,A */
```

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09987     , {      290,      290,      270,      290,      270} /* NN,NN,T,T,C */
09988     , {      310,      310,      290,      310,      290} /* NN,NN,T,T,G */
09989     , {      290,      290,      270,      290,      270} /* NN,NN,T,T,T */
09990     }
09991   }
09992 }
09993 }
09994 };
09995

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11.102 int122_RD.h

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00004     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,E,C */
00005     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,E,G */
00006     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,E,U/T */
00007     }
00008   , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,A,E */
00009     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,A,A */
00010     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,A,C */
00011     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,A,G */
00012     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,A,U/T */
00013     }
00014   , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,C,E */
00015     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,C,A */
00016     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,C,C */
00017     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,C,G */
00018     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,C,U/T */
00019     }
00020   , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,G,E */
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00022     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,G,C */
00023     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,G,G */
00024     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,G,U/T */
00025     }
00026   , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,U/T,E */
00027     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,U/T,A */
00028     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,U/T,C */
00029     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,U/T,G */
00030     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,E,U/T,U/T */
00031     }
00032   }
00033   , {{{{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,E,E */
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00035     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,E,C */
00036     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,E,G */
00037     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,E,U/T */
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00041     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,A,C */
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00044     }
00045   , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,C,E */
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00047     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,C,C */
00048     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,C,G */
00049     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,C,U/T */
00050     }
00051   , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,G,E */
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00053     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,G,C */
00054     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,G,G */
00055     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,G,U/T */
00056     }
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00058     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,U/T,A */
00059     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,U/T,C */
00060     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,U/T,G */
00061     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,A,U/T,U/T */
00062     }
00063   }
00064   , {{{{{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,E,E */
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00066     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,E,C */
00067     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,E,G */
00068     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,E,U/T */
00069     }
00070   , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,A,E */
00071     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,A,A */
00072     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,A,C */
00073     , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,A,G */

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00075 }
00076 , {{ INF, INF, INF, INF, INF} /* NP,NP,C,C,E */
00077 , { INF, INF, INF, INF, INF} /* NP,NP,C,C,A */
00078 , { INF, INF, INF, INF, INF} /* NP,NP,C,C,C */
00079 , { INF, INF, INF, INF, INF} /* NP,NP,C,C,G */
00080 , { INF, INF, INF, INF, INF} /* NP,NP,C,C,U/T */
00081 }
00082 , {{ INF, INF, INF, INF, INF} /* NP,NP,C,G,E */
00083 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,A */
00084 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,C */
00085 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,G */
00086 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,U/T */
00087 }
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00673 , { INF, INF, INF, INF, INF} /* NP,UG,A,C,U/T */
00674 }
00675 , { { INF, INF, INF, INF, INF} /* NP,UG,A,G,E */
00676 , { INF, INF, INF, INF, INF} /* NP,UG,A,G,A */
00677 , { INF, INF, INF, INF, INF} /* NP,UG,A,G,C */
00678 , { INF, INF, INF, INF, INF} /* NP,UG,A,G,G */
00679 , { INF, INF, INF, INF, INF} /* NP,UG,A,G,U/T */
00680 }
00681 , { { INF, INF, INF, INF, INF} /* NP,UG,A,U/T,E */
00682 , { INF, INF, INF, INF, INF} /* NP,UG,A,U/T,A */

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00683      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,A,U/T,C */
00684      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,A,U/T,G */
00685      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,A,U/T,U/T */
00686      }
00687      }
00688      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,E,E */
00689      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,E,A */
00690      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,E,C */
00691      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,E,G */
00692      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,E,U/T */
00693      }
00694      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,A,E */
00695      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,A,A */
00696      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,A,C */
00697      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,A,G */
00698      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,A,U/T */
00699      }
00700      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,C,E */
00701      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,C,A */
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00704      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,C,U/T */
00705      }
00706      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,G,E */
00707      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,G,A */
00708      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,G,C */
00709      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,G,G */
00710      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,G,U/T */
00711      }
00712      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,U/T,E */
00713      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,U/T,A */
00714      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,U/T,C */
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00716      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,C,U/T,U/T */
00717      }
00718      }
00719      , {{ {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,E,E */
00720      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,E,A */
00721      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,E,C */
00722      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,E,G */
00723      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,E,U/T */
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00726      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,A,A */
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00729      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,A,U/T */
00730      }
00731      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,C,E */
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00734      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,C,G */
00735      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,C,U/T */
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00737      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,G,E */
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00741      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,G,U/T */
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00743      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,U/T,E */
00744      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,U/T,A */
00745      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,U/T,C */
00746      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,U/T,G */
00747      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,G,U/T,U/T */
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00749      }
00750      , {{ {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,E,E */
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00752      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,E,C */
00753      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,E,G */
00754      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,E,U/T */
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00756      , {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,A,E */
00757      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,A,A */
00758      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,A,C */
00759      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,A,G */
00760      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,A,U/T */
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00762      , {{ {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,C,E */
00763      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,C,A */
00764      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,C,C */
00765      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,C,G */
00766      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,C,U/T */
00767      }
00768      , {{ {{      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,G,E */
00769      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,G,A */

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00771      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,G,G */
00772      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,G,U/T */
00773      }
00774      , { {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,U/T,E */
00775      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,U/T,A */
00776      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,U/T,C */
00777      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,U/T,G */
00778      , {      INF,      INF,      INF,      INF,      INF} /* NP,UG,U/T,U/T,U/T */
00779      }
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00781      }
00782      , { { {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,E,E */
00783      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,E,A */
00784      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,E,C */
00785      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,E,G */
00786      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,E,U/T */
00787      }
00788      , { {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,A,E */
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00803      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,G,G */
00804      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,G,U/T */
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00807      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,U/T,A */
00808      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,U/T,C */
00809      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,U/T,G */
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00811      }
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00813      , { { {      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,E,E */
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00817      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,E,U/T */
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00824      }
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00826      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,C,A */
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00829      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,C,U/T */
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00835      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,G,U/T */
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00837      , { {      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,U/T,E */
00838      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,U/T,A */
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00842      }
00843      }
00844      , { { {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,E,E */
00845      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,E,A */
00846      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,E,C */
00847      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,E,G */
00848      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,E,U/T */
00849      }
00850      , { {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,A,E */
00851      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,A,A */
00852      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,A,C */
00853      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,A,G */
00854      , {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,A,U/T */
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00856      , { {      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,C,E */

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00863 , { INF, INF, INF, INF, INF} /* NP,AT,C,G,A */
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00866 , { INF, INF, INF, INF, INF} /* NP,AT,C,G,U/T */
00867 }
00868 , { { INF, INF, INF, INF, INF} /* NP,AT,C,U/T,E */
00869 , { INF, INF, INF, INF, INF} /* NP,AT,C,U/T,A */
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00922 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,C,U/T */
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00924 , { { INF, INF, INF, INF, INF} /* NP,AT,U/T,G,E */
00925 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,G,A */
00926 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,G,C */
00927 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,G,G */
00928 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,G,U/T */
00929 }
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00931 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,U/T,A */
00932 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,U/T,C */
00933 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,U/T,G */
00934 , { INF, INF, INF, INF, INF} /* NP,AT,U/T,U/T,U/T */
00935 }
00936 }
00937 }
00938 , { { { { INF, INF, INF, INF, INF} /* NP,UA,E,E,E */
00939 , { INF, INF, INF, INF, INF} /* NP,UA,E,E,A */
00940 , { INF, INF, INF, INF, INF} /* NP,UA,E,E,C */
00941 , { INF, INF, INF, INF, INF} /* NP,UA,E,E,G */
00942 , { INF, INF, INF, INF, INF} /* NP,UA,E,E,U/T */
00943 }

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00945 ,{ INF, INF, INF, INF, INF} /* NP,UA,E,A,A */
00946 ,{ INF, INF, INF, INF, INF} /* NP,UA,E,A,C */
00947 ,{ INF, INF, INF, INF, INF} /* NP,UA,E,A,G */
00948 ,{ INF, INF, INF, INF, INF} /* NP,UA,E,A,U/T */
00949 }
00950 ,{{ INF, INF, INF, INF, INF} /* NP,UA,E,C,E */
00951 ,{ INF, INF, INF, INF, INF} /* NP,UA,E,C,A */
00952 ,{ INF, INF, INF, INF, INF} /* NP,UA,E,C,C */
00953 ,{ INF, INF, INF, INF, INF} /* NP,UA,E,C,G */
00954 ,{ INF, INF, INF, INF, INF} /* NP,UA,E,C,U/T */
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01250 }
01251 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,E,E,E */
01252 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,E,A */
01253 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,E,C */
01254 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,E,G */
01255 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,E,U/T */
01256 }
01257 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,E,A,E */
01258 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,A,A */
01259 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,A,C */
01260 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,A,G */
01261 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,A,U/T */
01262 }
01263 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,E,C,E */
01264 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,C,A */
01265 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,C,C */
01266 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,C,G */
01267 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,C,U/T */
01268 }
01269 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,E,G,E */
01270 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,G,A */
01271 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,G,C */
01272 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,G,G */
01273 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,G,U/T */
01274 }
01275 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,E,U/T,E */
01276 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,U/T,A */
01277 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,U/T,C */
01278 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,U/T,G */
01279 ,{ INF, INF, INF, INF, INF} /* CG,NP,E,U/T,U/T */
01280 }
01281 }
01282 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,A,E,E */
01283 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,E,A */
01284 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,E,C */
01285 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,E,G */
01286 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,E,U/T */
01287 }
01288 ,{{{ INF, INF, INF, INF, INF} /* CG,NP,A,A,E */
01289 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,A,A */
01290 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,A,C */
01291 ,{ INF, INF, INF, INF, INF} /* CG,NP,A,A,G */

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01292 , { INF, INF, INF, INF, INF} /* CG,NP,A,A,U/T */
01293 }
01294 , {{ INF, INF, INF, INF, INF} /* CG,NP,A,C,E */
01295 , { INF, INF, INF, INF, INF} /* CG,NP,A,C,A */
01296 , { INF, INF, INF, INF, INF} /* CG,NP,A,C,C */
01297 , { INF, INF, INF, INF, INF} /* CG,NP,A,C,G */
01298 , { INF, INF, INF, INF, INF} /* CG,NP,A,C,U/T */
01299 }
01300 , {{ INF, INF, INF, INF, INF} /* CG,NP,A,G,E */
01301 , { INF, INF, INF, INF, INF} /* CG,NP,A,G,A */
01302 , { INF, INF, INF, INF, INF} /* CG,NP,A,G,C */
01303 , { INF, INF, INF, INF, INF} /* CG,NP,A,G,G */
01304 , { INF, INF, INF, INF, INF} /* CG,NP,A,G,U/T */
01305 }
01306 , {{ INF, INF, INF, INF, INF} /* CG,NP,A,U/T,E */
01307 , { INF, INF, INF, INF, INF} /* CG,NP,A,U/T,A */
01308 , { INF, INF, INF, INF, INF} /* CG,NP,A,U/T,C */
01309 , { INF, INF, INF, INF, INF} /* CG,NP,A,U/T,G */
01310 , { INF, INF, INF, INF, INF} /* CG,NP,A,U/T,U/T */
01311 }
01312 }
01313 , {{{ INF, INF, INF, INF, INF} /* CG,NP,C,E,E */
01314 , { INF, INF, INF, INF, INF} /* CG,NP,C,E,A */
01315 , { INF, INF, INF, INF, INF} /* CG,NP,C,E,C */
01316 , { INF, INF, INF, INF, INF} /* CG,NP,C,E,G */
01317 , { INF, INF, INF, INF, INF} /* CG,NP,C,E,U/T */
01318 }
01319 , {{ INF, INF, INF, INF, INF} /* CG,NP,C,A,E */
01320 , { INF, INF, INF, INF, INF} /* CG,NP,C,A,A */
01321 , { INF, INF, INF, INF, INF} /* CG,NP,C,A,C */
01322 , { INF, INF, INF, INF, INF} /* CG,NP,C,A,G */
01323 , { INF, INF, INF, INF, INF} /* CG,NP,C,A,U/T */
01324 }
01325 , {{ INF, INF, INF, INF, INF} /* CG,NP,C,C,E */
01326 , { INF, INF, INF, INF, INF} /* CG,NP,C,C,A */
01327 , { INF, INF, INF, INF, INF} /* CG,NP,C,C,C */
01328 , { INF, INF, INF, INF, INF} /* CG,NP,C,C,G */
01329 , { INF, INF, INF, INF, INF} /* CG,NP,C,C,U/T */
01330 }
01331 , {{ INF, INF, INF, INF, INF} /* CG,NP,C,G,E */
01332 , { INF, INF, INF, INF, INF} /* CG,NP,C,G,A */
01333 , { INF, INF, INF, INF, INF} /* CG,NP,C,G,C */
01334 , { INF, INF, INF, INF, INF} /* CG,NP,C,G,G */
01335 , { INF, INF, INF, INF, INF} /* CG,NP,C,G,U/T */
01336 }
01337 , {{ INF, INF, INF, INF, INF} /* CG,NP,C,U/T,E */
01338 , { INF, INF, INF, INF, INF} /* CG,NP,C,U/T,A */
01339 , { INF, INF, INF, INF, INF} /* CG,NP,C,U/T,C */
01340 , { INF, INF, INF, INF, INF} /* CG,NP,C,U/T,G */
01341 , { INF, INF, INF, INF, INF} /* CG,NP,C,U/T,U/T */
01342 }
01343 }
01344 , {{{ INF, INF, INF, INF, INF} /* CG,NP,G,E,E */
01345 , { INF, INF, INF, INF, INF} /* CG,NP,G,E,A */
01346 , { INF, INF, INF, INF, INF} /* CG,NP,G,E,C */
01347 , { INF, INF, INF, INF, INF} /* CG,NP,G,E,G */
01348 , { INF, INF, INF, INF, INF} /* CG,NP,G,E,U/T */
01349 }
01350 , {{ INF, INF, INF, INF, INF} /* CG,NP,G,A,E */
01351 , { INF, INF, INF, INF, INF} /* CG,NP,G,A,A */
01352 , { INF, INF, INF, INF, INF} /* CG,NP,G,A,C */
01353 , { INF, INF, INF, INF, INF} /* CG,NP,G,A,G */
01354 , { INF, INF, INF, INF, INF} /* CG,NP,G,A,U/T */
01355 }
01356 , {{ INF, INF, INF, INF, INF} /* CG,NP,G,C,E */
01357 , { INF, INF, INF, INF, INF} /* CG,NP,G,C,A */
01358 , { INF, INF, INF, INF, INF} /* CG,NP,G,C,C */
01359 , { INF, INF, INF, INF, INF} /* CG,NP,G,C,G */
01360 , { INF, INF, INF, INF, INF} /* CG,NP,G,C,U/T */
01361 }
01362 , {{ INF, INF, INF, INF, INF} /* CG,NP,G,G,E */
01363 , { INF, INF, INF, INF, INF} /* CG,NP,G,G,A */
01364 , { INF, INF, INF, INF, INF} /* CG,NP,G,G,C */
01365 , { INF, INF, INF, INF, INF} /* CG,NP,G,G,G */
01366 , { INF, INF, INF, INF, INF} /* CG,NP,G,G,U/T */
01367 }
01368 , {{ INF, INF, INF, INF, INF} /* CG,NP,G,U/T,E */
01369 , { INF, INF, INF, INF, INF} /* CG,NP,G,U/T,A */
01370 , { INF, INF, INF, INF, INF} /* CG,NP,G,U/T,C */
01371 , { INF, INF, INF, INF, INF} /* CG,NP,G,U/T,G */
01372 , { INF, INF, INF, INF, INF} /* CG,NP,G,U/T,U/T */
01373 }
01374 }
01375 , {{{ INF, INF, INF, INF, INF} /* CG,NP,U/T,E,E */
01376 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,E,A */
01377 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,E,C */
01378 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,E,G */

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01379      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,E,U/T */
01380      }
01381      , {{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,E */
01382      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,A */
01383      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,C */
01384      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,G */
01385      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,U/T */
01386      }
01387      , {{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,E */
01388      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,A */
01389      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,C */
01390      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,G */
01391      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,U/T */
01392      }
01393      , {{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,G,E */
01394      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,G,A */
01395      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,G,C */
01396      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,G,G */
01397      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,G,U/T */
01398      }
01399      , {{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,U/T,E */
01400      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,U/T,A */
01401      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,U/T,C */
01402      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,U/T,G */
01403      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,U/T,U/T */
01404      }
01405      }
01406      }
01407      , {{{      235,      215,      220,      200,      225} /* CG,CG,E,E,E */
01408      , {      225,      205,      210,      190,      215} /* CG,CG,E,E,A */
01409      , {      210,      190,      195,      180,      200} /* CG,CG,E,E,C */
01410      , {      220,      200,      205,      185,      210} /* CG,CG,E,E,G */
01411      , {      220,      200,      205,      185,      210} /* CG,CG,E,E,U/T */
01412      }
01413      , {{      215,      195,      200,      180,      205} /* CG,CG,E,A,E */
01414      , {      175,      155,      160,      140,      165} /* CG,CG,E,A,A */
01415      , {      185,      165,      170,      155,      175} /* CG,CG,E,A,C */
01416      , {      155,      110,      140,      100,      135} /* CG,CG,E,A,G */
01417      , {      210,      190,      195,      180,      200} /* CG,CG,E,A,U/T */
01418      }
01419      , {{      220,      200,      205,      185,      210} /* CG,CG,E,C,E */
01420      , {      210,      190,      195,      175,      200} /* CG,CG,E,C,A */
01421      , {      210,      190,      195,      180,      200} /* CG,CG,E,C,C */
01422      , {      190,      170,      175,      155,      180} /* CG,CG,E,C,G */
01423      , {      195,      175,      180,      160,      185} /* CG,CG,E,C,U/T */
01424      }
01425      , {{      200,      180,      185,      170,      190} /* CG,CG,E,G,E */
01426      , {      155,      110,      140,      100,      135} /* CG,CG,E,G,A */
01427      , {      180,      160,      165,      150,      170} /* CG,CG,E,G,C */
01428      , {      140,      100,      90,      130,      100} /* CG,CG,E,G,G */
01429      , {      200,      180,      185,      170,      190} /* CG,CG,E,G,U/T */
01430      }
01431      , {{      225,      205,      210,      190,      215} /* CG,CG,E,U/T,E */
01432      , {      225,      205,      210,      190,      215} /* CG,CG,E,U/T,A */
01433      , {      195,      175,      180,      160,      185} /* CG,CG,E,U/T,C */
01434      , {      220,      200,      205,      185,      210} /* CG,CG,E,U/T,G */
01435      , {      150,      150,      125,      105,      130} /* CG,CG,E,U/T,U/T */
01436      }
01437      }
01438      , {{{      225,      175,      210,      155,      225} /* CG,CG,A,E,E */
01439      , {      215,      165,      200,      120,      215} /* CG,CG,A,E,A */
01440      , {      200,      150,      185,      140,      200} /* CG,CG,A,E,C */
01441      , {      210,      160,      195,      115,      210} /* CG,CG,A,E,G */
01442      , {      210,      160,      195,      145,      210} /* CG,CG,A,E,U/T */
01443      }
01444      , {{      205,      155,      190,      110,      205} /* CG,CG,A,A,E */
01445      , {      165,      115,      150,      70,      165} /* CG,CG,A,A,A */
01446      , {      175,      125,      160,      85,      175} /* CG,CG,A,A,C */
01447      , {      120,      70,      105,      30,      120} /* CG,CG,A,A,G */
01448      , {      200,      150,      185,      110,      200} /* CG,CG,A,A,U/T */
01449      }
01450      , {{      210,      160,      195,      140,      210} /* CG,CG,A,C,E */
01451      , {      200,      150,      185,      105,      200} /* CG,CG,A,C,A */
01452      , {      200,      150,      185,      140,      200} /* CG,CG,A,C,C */
01453      , {      180,      130,      165,      85,      180} /* CG,CG,A,C,G */
01454      , {      185,      135,      170,      120,      185} /* CG,CG,A,C,U/T */
01455      }
01456      , {{      190,      140,      175,      100,      190} /* CG,CG,A,G,E */
01457      , {      120,      70,      105,      30,      120} /* CG,CG,A,G,A */
01458      , {      170,      120,      155,      80,      170} /* CG,CG,A,G,C */
01459      , {      95,      45,      80,      65,      95} /* CG,CG,A,G,G */
01460      , {      190,      140,      175,      100,      190} /* CG,CG,A,G,U/T */
01461      }
01462      , {{      215,      165,      200,      135,      215} /* CG,CG,A,U/T,E */
01463      , {      215,      165,      200,      120,      215} /* CG,CG,A,U/T,A */
01464      , {      185,      135,      170,      120,      185} /* CG,CG,A,U/T,C */
01465      , {      210,      160,      195,      115,      210} /* CG,CG,A,U/T,G */

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01466 , { 140, 110, 115, 40, 130} /* CG,CG,A,U/T,U/T */
01467 }
01468 }
01469 ,{{{ 210, 185, 210, 180, 195} /* CG,CG,C,E,E */
01470 , { 200, 175, 200, 170, 185} /* CG,CG,C,E,A */
01471 , { 190, 165, 190, 160, 170} /* CG,CG,C,E,C */
01472 , { 195, 170, 195, 165, 180} /* CG,CG,C,E,G */
01473 , { 195, 170, 195, 165, 180} /* CG,CG,C,E,U/T */
01474 }
01475 ,{{{ 190, 165, 190, 160, 175} /* CG,CG,C,A,E */
01476 , { 150, 125, 150, 120, 135} /* CG,CG,C,A,A */
01477 , { 165, 140, 165, 135, 145} /* CG,CG,C,A,C */
01478 , { 140, 85, 140, 80, 120} /* CG,CG,C,A,G */
01479 , { 190, 165, 190, 160, 170} /* CG,CG,C,A,U/T */
01480 }
01481 ,{{{ 195, 170, 195, 165, 180} /* CG,CG,C,C,E */
01482 , { 185, 160, 185, 155, 170} /* CG,CG,C,C,A */
01483 , { 190, 165, 190, 160, 170} /* CG,CG,C,C,C */
01484 , { 165, 140, 165, 135, 150} /* CG,CG,C,C,G */
01485 , { 170, 145, 170, 140, 155} /* CG,CG,C,C,U/T */
01486 }
01487 ,{{{ 180, 155, 180, 150, 160} /* CG,CG,C,G,E */
01488 , { 140, 85, 140, 80, 120} /* CG,CG,C,G,A */
01489 , { 160, 135, 160, 130, 140} /* CG,CG,C,G,C */
01490 , { 80, 55, 80, 50, 65} /* CG,CG,C,G,G */
01491 , { 180, 155, 180, 150, 160} /* CG,CG,C,G,U/T */
01492 }
01493 ,{{{ 200, 175, 200, 170, 185} /* CG,CG,C,U/T,E */
01494 , { 200, 175, 200, 170, 185} /* CG,CG,C,U/T,A */
01495 , { 170, 145, 170, 140, 155} /* CG,CG,C,U/T,C */
01496 , { 195, 170, 195, 165, 180} /* CG,CG,C,U/T,G */
01497 , { 115, 90, 115, 85, 100} /* CG,CG,C,U/T,U/T */
01498 }
01499 }
01500 ,{{{ 220, 155, 190, 140, 220} /* CG,CG,G,E,E */
01501 , { 210, 120, 180, 95, 210} /* CG,CG,G,E,A */
01502 , { 195, 140, 165, 80, 195} /* CG,CG,G,E,C */
01503 , { 205, 115, 175, 125, 205} /* CG,CG,G,E,G */
01504 , { 205, 145, 175, 110, 205} /* CG,CG,G,E,U/T */
01505 }
01506 ,{{{ 200, 110, 170, 100, 200} /* CG,CG,G,A,E */
01507 , { 160, 70, 130, 45, 160} /* CG,CG,G,A,A */
01508 , { 170, 85, 140, 55, 170} /* CG,CG,G,A,C */
01509 , { 115, 30, 85, 65, 115} /* CG,CG,G,A,G */
01510 , { 195, 110, 165, 80, 195} /* CG,CG,G,A,U/T */
01511 }
01512 ,{{{ 205, 140, 175, 90, 205} /* CG,CG,G,C,E */
01513 , { 195, 105, 165, 80, 195} /* CG,CG,G,C,A */
01514 , { 195, 140, 165, 80, 195} /* CG,CG,G,C,C */
01515 , { 175, 85, 145, 60, 175} /* CG,CG,G,C,G */
01516 , { 180, 120, 150, 65, 180} /* CG,CG,G,C,U/T */
01517 }
01518 ,{{{ 185, 100, 155, 130, 185} /* CG,CG,G,G,E */
01519 , { 115, 30, 85, 65, 115} /* CG,CG,G,G,A */
01520 , { 165, 80, 135, 50, 165} /* CG,CG,G,G,C */
01521 , { 125, 65, 60, 105, 90} /* CG,CG,G,G,G */
01522 , { 185, 100, 155, 70, 185} /* CG,CG,G,G,U/T */
01523 }
01524 ,{{{ 210, 135, 180, 100, 210} /* CG,CG,G,U/T,E */
01525 , { 210, 120, 180, 95, 210} /* CG,CG,G,U/T,A */
01526 , { 180, 120, 150, 65, 180} /* CG,CG,G,U/T,C */
01527 , { 205, 115, 175, 90, 205} /* CG,CG,G,U/T,G */
01528 , { 125, 40, 95, 75, 125} /* CG,CG,G,U/T,U/T */
01529 }
01530 }
01531 ,{{{ 220, 210, 195, 200, 150} /* CG,CG,U/T,E,E */
01532 , { 210, 200, 185, 190, 140} /* CG,CG,U/T,E,A */
01533 , { 195, 190, 170, 180, 115} /* CG,CG,U/T,E,C */
01534 , { 205, 195, 180, 185, 125} /* CG,CG,U/T,E,G */
01535 , { 205, 195, 180, 185, 125} /* CG,CG,U/T,E,U/T */
01536 }
01537 ,{{{ 200, 190, 175, 180, 150} /* CG,CG,U/T,A,E */
01538 , { 160, 150, 135, 140, 110} /* CG,CG,U/T,A,A */
01539 , { 170, 165, 145, 155, 90} /* CG,CG,U/T,A,C */
01540 , { 145, 110, 120, 100, 40} /* CG,CG,U/T,A,G */
01541 , { 195, 190, 170, 180, 115} /* CG,CG,U/T,A,U/T */
01542 }
01543 ,{{{ 205, 195, 180, 185, 125} /* CG,CG,U/T,C,E */
01544 , { 195, 185, 170, 175, 115} /* CG,CG,U/T,C,A */
01545 , { 195, 190, 170, 180, 115} /* CG,CG,U/T,C,C */
01546 , { 175, 165, 150, 155, 95} /* CG,CG,U/T,C,G */
01547 , { 180, 170, 155, 160, 100} /* CG,CG,U/T,C,U/T */
01548 }
01549 ,{{{ 185, 180, 160, 170, 105} /* CG,CG,U/T,G,E */
01550 , { 145, 110, 120, 100, 40} /* CG,CG,U/T,G,A */
01551 , { 165, 160, 140, 150, 85} /* CG,CG,U/T,G,C */
01552 , { 110, 80, 65, 70, 75} /* CG,CG,U/T,G,G */
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01553      , {      185,      180,      160,      170,      105} /* CG,CG,U/T,G,U/T */
01554      }
01555      , {{      210,      200,      185,      190,      130} /* CG,CG,U/T,U/T,E */
01556      , {      210,      200,      185,      190,      130} /* CG,CG,U/T,U/T,A */
01557      , {      180,      170,      155,      160,      100} /* CG,CG,U/T,U/T,C */
01558      , {      205,      195,      180,      185,      125} /* CG,CG,U/T,U/T,G */
01559      , {      125,      115,      100,      105,      45} /* CG,CG,U/T,U/T,U/T */
01560      }
01561      }
01562      }
01563      , {{{      240,      205,      225,      190,      205} /* CG,GC,E,E,E */
01564      , {      230,      185,      215,      175,      195} /* CG,GC,E,E,A */
01565      , {      190,      170,      175,      160,      180} /* CG,GC,E,E,C */
01566      , {      200,      180,      185,      170,      190} /* CG,GC,E,E,G */
01567      , {      210,      200,      185,      185,      200} /* CG,GC,E,E,U/T */
01568      }
01569      , {{      235,      190,      220,      180,      200} /* CG,GC,E,A,E */
01570      , {      200,      155,      185,      145,      165} /* CG,GC,E,A,A */
01571      , {      180,      160,      165,      145,      170} /* CG,GC,E,A,C */
01572      , {      130,      80,      115,      50,      110} /* CG,GC,E,A,G */
01573      , {      200,      180,      185,      165,      190} /* CG,GC,E,A,U/T */
01574      }
01575      , {{      210,      170,      195,      155,      190} /* CG,GC,E,C,E */
01576      , {      200,      160,      185,      145,      165} /* CG,GC,E,C,A */
01577      , {      190,      170,      175,      155,      180} /* CG,GC,E,C,C */
01578      , {      175,      155,      160,      145,      165} /* CG,GC,E,C,G */
01579      , {      195,      165,      170,      150,      185} /* CG,GC,E,C,U/T */
01580      }
01581      , {{      200,      180,      185,      165,      190} /* CG,GC,E,G,E */
01582      , {      165,      130,      115,      80,      155} /* CG,GC,E,G,A */
01583      , {      155,      135,      140,      120,      145} /* CG,GC,E,G,C */
01584      , {      135,      80,      85,      125,      120} /* CG,GC,E,G,G */
01585      , {      200,      180,      185,      165,      190} /* CG,GC,E,G,U/T */
01586      }
01587      , {{      205,      205,      190,      190,      195} /* CG,GC,E,U/T,E */
01588      , {      190,      170,      175,      160,      180} /* CG,GC,E,U/T,A */
01589      , {      185,      165,      170,      155,      175} /* CG,GC,E,U/T,C */
01590      , {      200,      180,      185,      170,      190} /* CG,GC,E,U/T,G */
01591      , {      175,      175,      120,      160,      125} /* CG,GC,E,U/T,U/T */
01592      }
01593      }
01594      , {{{      205,      165,      180,      140,      205} /* CG,GC,A,E,E */
01595      , {      195,      145,      165,      90,      195} /* CG,GC,A,E,A */
01596      , {      180,      130,      165,      120,      180} /* CG,GC,A,E,C */
01597      , {      190,      140,      175,      100,      190} /* CG,GC,A,E,G */
01598      , {      190,      160,      175,      135,      190} /* CG,GC,A,E,U/T */
01599      }
01600      , {{      200,      150,      175,      95,      200} /* CG,GC,A,A,E */
01601      , {      165,      115,      95,      55,      165} /* CG,GC,A,A,A */
01602      , {      170,      120,      155,      35,      170} /* CG,GC,A,A,C */
01603      , {      90,      40,      75,      -20,      70} /* CG,GC,A,A,G */
01604      , {      190,      140,      175,      95,      190} /* CG,GC,A,A,U/T */
01605      }
01606      , {{      180,      130,      165,      115,      180} /* CG,GC,A,C,E */
01607      , {      165,      115,      105,      20,      165} /* CG,GC,A,C,A */
01608      , {      180,      130,      165,      50,      180} /* CG,GC,A,C,C */
01609      , {      165,      115,      150,      75,      165} /* CG,GC,A,C,G */
01610      , {      175,      125,      160,      110,      175} /* CG,GC,A,C,U/T */
01611      }
01612      , {{      190,      140,      175,      95,      190} /* CG,GC,A,G,E */
01613      , {      105,      75,      85,      25,      100} /* CG,GC,A,G,A */
01614      , {      145,      95,      130,      50,      145} /* CG,GC,A,G,C */
01615      , {      90,      40,      55,      60,      90} /* CG,GC,A,G,G */
01616      , {      190,      140,      175,      95,      190} /* CG,GC,A,G,U/T */
01617      }
01618      , {{      195,      165,      180,      140,      195} /* CG,GC,A,U/T,E */
01619      , {      180,      130,      165,      90,      180} /* CG,GC,A,U/T,A */
01620      , {      175,      125,      160,      115,      175} /* CG,GC,A,U/T,C */
01621      , {      190,      140,      175,      100,      190} /* CG,GC,A,U/T,G */
01622      , {      165,      135,      75,      110,      125} /* CG,GC,A,U/T,U/T */
01623      }
01624      }
01625      , {{{      225,      170,      225,      165,      190} /* CG,GC,C,E,E */
01626      , {      215,      160,      215,      155,      165} /* CG,GC,C,E,A */
01627      , {      170,      145,      170,      140,      150} /* CG,GC,C,E,C */
01628      , {      180,      155,      180,      150,      160} /* CG,GC,C,E,G */
01629      , {      195,      150,      175,      145,      185} /* CG,GC,C,E,U/T */
01630      }
01631      , {{      220,      165,      220,      160,      170} /* CG,GC,C,A,E */
01632      , {      185,      130,      185,      125,      135} /* CG,GC,C,A,A */
01633      , {      155,      130,      155,      125,      140} /* CG,GC,C,A,C */
01634      , {      115,      35,      115,      30,      70} /* CG,GC,C,A,G */
01635      , {      175,      150,      175,      145,      160} /* CG,GC,C,A,U/T */
01636      }
01637      , {{      195,      145,      195,      135,      175} /* CG,GC,C,C,E */
01638      , {      185,      135,      185,      125,      135} /* CG,GC,C,C,A */
01639      , {      165,      140,      165,      135,      150} /* CG,GC,C,C,C */

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01640      , {      155,      130,      155,      125,      135} /* CG,GC,C,C,G */
01641      , {      180,      135,      160,      130,      170} /* CG,GC,C,C,U/T */
01642      }
01643      , {{      175,      150,      175,      145,      160} /* CG,GC,C,G,E */
01644      , {      115,      105,      115,      60,      100} /* CG,GC,C,G,A */
01645      , {      130,      105,      130,      100,      115} /* CG,GC,C,G,C */
01646      , {      90,      50,      75,      45,      80} /* CG,GC,C,G,G */
01647      , {      175,      150,      175,      145,      160} /* CG,GC,C,G,U/T */
01648      }
01649      , {{      185,      160,      185,      155,      165} /* CG,GC,C,U/T,E */
01650      , {      170,      145,      170,      140,      150} /* CG,GC,C,U/T,A */
01651      , {      165,      140,      165,      135,      145} /* CG,GC,C,U/T,C */
01652      , {      180,      155,      180,      150,      160} /* CG,GC,C,U/T,G */
01653      , {      100,      65,      80,      85,      85} /* CG,GC,C,U/T,U/T */
01654      }
01655      }
01656      , {{{      200,      140,      170,      165,      200} /* CG,GC,G,E,E */
01657      , {      190,      120,      160,      80,      190} /* CG,GC,G,E,A */
01658      , {      175,      120,      145,      60,      175} /* CG,GC,G,E,C */
01659      , {      185,      100,      155,      135,      185} /* CG,GC,G,E,G */
01660      , {      185,      135,      155,      160,      185} /* CG,GC,G,E,U/T */
01661      }
01662      , {{      195,      95,      165,      85,      195} /* CG,GC,G,A,E */
01663      , {      160,      45,      130,      50,      160} /* CG,GC,G,A,A */
01664      , {      165,      50,      135,      50,      165} /* CG,GC,G,A,C */
01665      , {      65,      -25,      35,      15,      65} /* CG,GC,G,A,G */
01666      , {      185,      95,      155,      70,      185} /* CG,GC,G,A,U/T */
01667      }
01668      , {{      175,      115,      145,      90,      175} /* CG,GC,G,C,E */
01669      , {      160,      105,      130,      45,      160} /* CG,GC,G,C,A */
01670      , {      175,      115,      145,      60,      175} /* CG,GC,G,C,C */
01671      , {      160,      75,      130,      45,      160} /* CG,GC,G,C,G */
01672      , {      170,      110,      140,      85,      170} /* CG,GC,G,C,U/T */
01673      }
01674      , {{      185,      95,      155,      130,      185} /* CG,GC,G,G,E */
01675      , {      95,      35,      65,      45,      95} /* CG,GC,G,G,A */
01676      , {      140,      50,      110,      25,      140} /* CG,GC,G,G,C */
01677      , {      120,      45,      55,      100,      85} /* CG,GC,G,G,G */
01678      , {      185,      95,      155,      70,      185} /* CG,GC,G,G,U/T */
01679      }
01680      , {{      190,      140,      160,      165,      190} /* CG,GC,G,U/T,E */
01681      , {      175,      90,      145,      60,      175} /* CG,GC,G,U/T,A */
01682      , {      170,      115,      140,      50,      170} /* CG,GC,G,U/T,C */
01683      , {      185,      100,      155,      70,      185} /* CG,GC,G,U/T,G */
01684      , {      155,      110,      90,      135,      120} /* CG,GC,G,U/T,U/T */
01685      }
01686      }
01687      , {{{      200,      195,      175,      185,      165} /* CG,GC,U/T,E,E */
01688      , {      190,      185,      165,      175,      155} /* CG,GC,U/T,E,A */
01689      , {      175,      170,      150,      160,      95} /* CG,GC,U/T,E,C */
01690      , {      185,      180,      160,      170,      130} /* CG,GC,U/T,E,G */
01691      , {      185,      175,      160,      165,      105} /* CG,GC,U/T,E,U/T */
01692      }
01693      , {{      195,      190,      170,      180,      160} /* CG,GC,U/T,A,E */
01694      , {      160,      155,      135,      145,      125} /* CG,GC,U/T,A,A */
01695      , {      165,      155,      140,      145,      85} /* CG,GC,U/T,A,C */
01696      , {      120,      60,      70,      50,      85} /* CG,GC,U/T,A,G */
01697      , {      185,      175,      160,      165,      105} /* CG,GC,U/T,A,U/T */
01698      }
01699      , {{      175,      165,      150,      155,      95} /* CG,GC,U/T,C,E */
01700      , {      160,      155,      135,      145,      85} /* CG,GC,U/T,C,A */
01701      , {      175,      165,      150,      155,      95} /* CG,GC,U/T,C,C */
01702      , {      160,      155,      135,      145,      80} /* CG,GC,U/T,C,G */
01703      , {      170,      160,      145,      150,      90} /* CG,GC,U/T,C,U/T */
01704      }
01705      , {{      195,      175,      160,      165,      160} /* CG,GC,U/T,G,E */
01706      , {      165,      90,      95,      80,      130} /* CG,GC,U/T,G,A */
01707      , {      140,      130,      115,      120,      60} /* CG,GC,U/T,G,C */
01708      , {      130,      75,      40,      65,      95} /* CG,GC,U/T,G,G */
01709      , {      185,      175,      160,      165,      105} /* CG,GC,U/T,G,U/T */
01710      }
01711      , {{      190,      185,      165,      175,      110} /* CG,GC,U/T,U/T,E */
01712      , {      175,      170,      150,      160,      95} /* CG,GC,U/T,U/T,A */
01713      , {      170,      165,      145,      155,      90} /* CG,GC,U/T,U/T,C */
01714      , {      185,      180,      160,      170,      105} /* CG,GC,U/T,U/T,G */
01715      , {      120,      115,      95,      105,      35} /* CG,GC,U/T,U/T,U/T */
01716      }
01717      }
01718      }
01719      , {{{      295,      290,      280,      265,      285} /* CG,GT,E,E,E */
01720      , {      285,      270,      270,      255,      275} /* CG,GT,E,E,A */
01721      , {      270,      250,      255,      235,      260} /* CG,GT,E,E,C */
01722      , {      280,      260,      265,      245,      270} /* CG,GT,E,E,G */
01723      , {      290,      290,      265,      245,      270} /* CG,GT,E,E,U/T */
01724      }
01725      , {{      295,      280,      280,      265,      285} /* CG,GT,E,A,E */
01726      , {      270,      255,      255,      240,      260} /* CG,GT,E,A,A */

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01727 , { 270, 250, 255, 235, 260} /* CG,GT,E,A,C */
01728 , { 235, 195, 220, 180, 220} /* CG,GT,E,A,G */
01729 , { 280, 260, 265, 245, 270} /* CG,GT,E,A,U/T */
01730 }
01731 , {{ 270, 250, 255, 235, 260} /* CG,GT,E,C,E */
01732 , { 270, 250, 255, 235, 260} /* CG,GT,E,C,A */
01733 , { 270, 250, 255, 235, 260} /* CG,GT,E,C,C */
01734 , { 260, 240, 245, 225, 250} /* CG,GT,E,C,G */
01735 , { 270, 250, 255, 235, 260} /* CG,GT,E,C,U/T */
01736 }
01737 , {{ 280, 260, 265, 245, 270} /* CG,GT,E,G,E */
01738 , { 255, 215, 240, 200, 240} /* CG,GT,E,G,A */
01739 , { 260, 240, 245, 225, 250} /* CG,GT,E,G,C */
01740 , { 225, 185, 175, 215, 185} /* CG,GT,E,G,G */
01741 , { 280, 260, 265, 245, 270} /* CG,GT,E,G,U/T */
01742 }
01743 , {{ 290, 290, 265, 245, 270} /* CG,GT,E,U/T,E */
01744 , { 270, 250, 255, 235, 260} /* CG,GT,E,U/T,A */
01745 , { 270, 250, 255, 235, 260} /* CG,GT,E,U/T,C */
01746 , { 280, 260, 265, 245, 270} /* CG,GT,E,U/T,G */
01747 , { 280, 280, 255, 235, 260} /* CG,GT,E,U/T,U/T */
01748 }
01749 }
01750 , {{{ 285, 250, 270, 205, 285} /* CG,GT,A,E,E */
01751 , { 275, 230, 260, 185, 275} /* CG,GT,A,E,A */
01752 , { 260, 210, 245, 195, 260} /* CG,GT,A,E,C */
01753 , { 270, 220, 255, 175, 270} /* CG,GT,A,E,G */
01754 , { 280, 250, 255, 205, 270} /* CG,GT,A,E,U/T */
01755 }
01756 , {{ 285, 240, 270, 195, 285} /* CG,GT,A,A,E */
01757 , { 260, 215, 245, 170, 260} /* CG,GT,A,A,A */
01758 , { 260, 210, 245, 165, 260} /* CG,GT,A,A,C */
01759 , { 205, 155, 190, 110, 205} /* CG,GT,A,A,G */
01760 , { 270, 220, 255, 175, 270} /* CG,GT,A,A,U/T */
01761 }
01762 , {{ 260, 210, 245, 195, 260} /* CG,GT,A,C,E */
01763 , { 260, 210, 245, 165, 260} /* CG,GT,A,C,A */
01764 , { 260, 210, 245, 195, 260} /* CG,GT,A,C,C */
01765 , { 250, 200, 235, 155, 250} /* CG,GT,A,C,G */
01766 , { 260, 210, 245, 195, 260} /* CG,GT,A,C,U/T */
01767 }
01768 , {{ 270, 220, 255, 175, 270} /* CG,GT,A,G,E */
01769 , { 225, 175, 210, 130, 225} /* CG,GT,A,G,A */
01770 , { 250, 200, 235, 155, 250} /* CG,GT,A,G,C */
01771 , { 180, 130, 165, 150, 180} /* CG,GT,A,G,G */
01772 , { 270, 220, 255, 175, 270} /* CG,GT,A,G,U/T */
01773 }
01774 , {{{ 280, 250, 255, 205, 270} /* CG,GT,A,U/T,E */
01775 , { 260, 210, 245, 165, 260} /* CG,GT,A,U/T,A */
01776 , { 260, 210, 245, 195, 260} /* CG,GT,A,U/T,C */
01777 , { 270, 220, 255, 175, 270} /* CG,GT,A,U/T,G */
01778 , { 270, 240, 245, 165, 260} /* CG,GT,A,U/T,U/T */
01779 }
01780 }
01781 , {{{ 275, 250, 275, 245, 255} /* CG,GT,C,E,E */
01782 , { 265, 240, 265, 235, 245} /* CG,GT,C,E,A */
01783 , { 245, 220, 245, 215, 230} /* CG,GT,C,E,C */
01784 , { 255, 230, 255, 225, 240} /* CG,GT,C,E,G */
01785 , { 255, 230, 255, 225, 240} /* CG,GT,C,E,U/T */
01786 }
01787 , {{ 275, 250, 275, 245, 255} /* CG,GT,C,A,E */
01788 , { 250, 225, 250, 220, 230} /* CG,GT,C,A,A */
01789 , { 245, 220, 245, 215, 230} /* CG,GT,C,A,C */
01790 , { 220, 165, 220, 160, 205} /* CG,GT,C,A,G */
01791 , { 255, 230, 255, 225, 240} /* CG,GT,C,A,U/T */
01792 }
01793 , {{ 245, 220, 245, 215, 230} /* CG,GT,C,C,E */
01794 , { 245, 220, 245, 215, 230} /* CG,GT,C,C,A */
01795 , { 245, 220, 245, 215, 230} /* CG,GT,C,C,C */
01796 , { 235, 210, 235, 205, 220} /* CG,GT,C,C,G */
01797 , { 245, 220, 245, 215, 230} /* CG,GT,C,C,U/T */
01798 }
01799 , {{ 265, 230, 265, 225, 250} /* CG,GT,C,G,E */
01800 , { 240, 185, 240, 180, 225} /* CG,GT,C,G,A */
01801 , { 235, 210, 235, 205, 220} /* CG,GT,C,G,C */
01802 , { 165, 140, 165, 135, 150} /* CG,GT,C,G,G */
01803 , { 255, 230, 255, 225, 240} /* CG,GT,C,G,U/T */
01804 }
01805 , {{ 255, 230, 255, 225, 240} /* CG,GT,C,U/T,E */
01806 , { 245, 220, 245, 215, 230} /* CG,GT,C,U/T,A */
01807 , { 245, 220, 245, 215, 230} /* CG,GT,C,U/T,C */
01808 , { 255, 230, 255, 225, 240} /* CG,GT,C,U/T,G */
01809 , { 245, 220, 245, 215, 230} /* CG,GT,C,U/T,U/T */
01810 }
01811 }
01812 , {{{ 280, 205, 250, 215, 280} /* CG,GT,G,E,E */
01813 , { 270, 185, 240, 185, 270} /* CG,GT,G,E,A */

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01814      , {      255,      195,      225,      140,      255} /* CG,GT,G,E,C */
01815      , {      265,      175,      235,      215,      265} /* CG,GT,G,E,G */
01816      , {      265,      205,      235,      215,      265} /* CG,GT,G,E,U/T */
01817      }
01818      , { {      280,      195,      250,      175,      280} /* CG,GT,G,A,E */
01819      , {      255,      170,      225,      140,      255} /* CG,GT,G,A,A */
01820      , {      255,      165,      225,      140,      255} /* CG,GT,G,A,C */
01821      , {      200,      110,      170,      150,      200} /* CG,GT,G,A,G */
01822      , {      265,      175,      235,      150,      265} /* CG,GT,G,A,U/T */
01823      }
01824      , { {      255,      195,      225,      140,      255} /* CG,GT,G,C,E */
01825      , {      255,      165,      225,      140,      255} /* CG,GT,G,C,A */
01826      , {      255,      195,      225,      140,      255} /* CG,GT,G,C,C */
01827      , {      245,      155,      215,      130,      245} /* CG,GT,G,C,G */
01828      , {      255,      195,      225,      140,      255} /* CG,GT,G,C,U/T */
01829      }
01830      , { {      265,      175,      235,      215,      265} /* CG,GT,G,G,E */
01831      , {      220,      130,      190,      170,      220} /* CG,GT,G,G,A */
01832      , {      245,      155,      215,      130,      245} /* CG,GT,G,G,C */
01833      , {      210,      150,      145,      190,      175} /* CG,GT,G,G,G */
01834      , {      265,      175,      235,      150,      265} /* CG,GT,G,G,U/T */
01835      }
01836      , { {      265,      205,      235,      215,      265} /* CG,GT,G,U/T,E */
01837      , {      255,      165,      225,      140,      255} /* CG,GT,G,U/T,A */
01838      , {      255,      195,      225,      140,      255} /* CG,GT,G,U/T,C */
01839      , {      265,      175,      235,      150,      265} /* CG,GT,G,U/T,G */
01840      , {      255,      165,      225,      205,      255} /* CG,GT,G,U/T,U/T */
01841      }
01842      }
01843      , { { {      280,      275,      255,      265,      230} /* CG,GT,U/T,E,E */
01844      , {      270,      265,      245,      255,      220} /* CG,GT,U/T,E,A */
01845      , {      255,      245,      230,      235,      175} /* CG,GT,U/T,E,C */
01846      , {      265,      255,      240,      245,      185} /* CG,GT,U/T,E,G */
01847      , {      265,      255,      240,      245,      185} /* CG,GT,U/T,E,U/T */
01848      }
01849      , { {      280,      275,      255,      265,      230} /* CG,GT,U/T,A,E */
01850      , {      255,      250,      230,      240,      205} /* CG,GT,U/T,A,A */
01851      , {      255,      245,      230,      235,      175} /* CG,GT,U/T,A,C */
01852      , {      230,      190,      205,      180,      120} /* CG,GT,U/T,A,G */
01853      , {      265,      255,      240,      245,      185} /* CG,GT,U/T,A,U/T */
01854      }
01855      , { {      255,      245,      230,      235,      175} /* CG,GT,U/T,C,E */
01856      , {      255,      245,      230,      235,      175} /* CG,GT,U/T,C,A */
01857      , {      255,      245,      230,      235,      175} /* CG,GT,U/T,C,C */
01858      , {      245,      235,      220,      225,      165} /* CG,GT,U/T,C,G */
01859      , {      255,      245,      230,      235,      175} /* CG,GT,U/T,C,U/T */
01860      }
01861      , { {      275,      255,      250,      245,      185} /* CG,GT,U/T,G,E */
01862      , {      250,      210,      225,      200,      140} /* CG,GT,U/T,G,A */
01863      , {      245,      235,      220,      225,      165} /* CG,GT,U/T,G,C */
01864      , {      195,      165,      150,      155,      160} /* CG,GT,U/T,G,G */
01865      , {      265,      255,      240,      245,      185} /* CG,GT,U/T,G,U/T */
01866      }
01867      , { {      265,      255,      240,      245,      185} /* CG,GT,U/T,U/T,E */
01868      , {      255,      245,      230,      235,      175} /* CG,GT,U/T,U/T,A */
01869      , {      255,      245,      230,      235,      175} /* CG,GT,U/T,U/T,C */
01870      , {      265,      255,      240,      245,      185} /* CG,GT,U/T,U/T,G */
01871      , {      255,      245,      230,      235,      175} /* CG,GT,U/T,U/T,U/T */
01872      }
01873      }
01874      }
01875      , { { { {      300,      275,      285,      245,      285} /* CG,UG,E,E,E */
01876      , {      300,      260,      285,      245,      285} /* CG,UG,E,E,A */
01877      , {      255,      235,      240,      220,      245} /* CG,UG,E,E,C */
01878      , {      265,      245,      250,      230,      255} /* CG,UG,E,E,G */
01879      , {      275,      275,      250,      230,      255} /* CG,UG,E,E,U/T */
01880      }
01881      , { {      265,      245,      250,      230,      255} /* CG,UG,E,A,E */
01882      , {      220,      200,      205,      190,      210} /* CG,UG,E,A,A */
01883      , {      255,      235,      240,      220,      245} /* CG,UG,E,A,C */
01884      , {      195,      150,      180,      140,      175} /* CG,UG,E,A,G */
01885      , {      265,      245,      250,      230,      255} /* CG,UG,E,A,U/T */
01886      }
01887      , { {      255,      235,      240,      220,      245} /* CG,UG,E,C,E */
01888      , {      255,      235,      240,      220,      245} /* CG,UG,E,C,A */
01889      , {      255,      235,      240,      220,      245} /* CG,UG,E,C,C */
01890      , {      240,      220,      225,      205,      230} /* CG,UG,E,C,G */
01891      , {      255,      235,      240,      220,      245} /* CG,UG,E,C,U/T */
01892      }
01893      , { {      300,      260,      285,      245,      285} /* CG,UG,E,G,E */
01894      , {      275,      235,      260,      220,      260} /* CG,UG,E,G,A */
01895      , {      250,      230,      235,      215,      240} /* CG,UG,E,G,C */
01896      , {      210,      170,      160,      200,      170} /* CG,UG,E,G,G */
01897      , {      265,      245,      250,      230,      255} /* CG,UG,E,G,U/T */
01898      }
01899      , { {      275,      275,      250,      230,      255} /* CG,UG,E,U/T,E */
01900      , {      265,      245,      250,      230,      255} /* CG,UG,E,U/T,A */

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01901      , { 255, 235, 240, 220, 245} /* CG,UG,E,U/T,C */
01902      , { 265, 245, 250, 230, 255} /* CG,UG,E,U/T,G */
01903      , { 265, 265, 240, 220, 245} /* CG,UG,E,U/T,U/T */
01904      }
01905      }
01906      , {{ 270, 235, 255, 190, 270} /* CG,UG,A,E,E */
01907      , { 270, 220, 255, 175, 270} /* CG,UG,A,E,A */
01908      , { 245, 195, 230, 180, 245} /* CG,UG,A,E,C */
01909      , { 255, 205, 240, 160, 255} /* CG,UG,A,E,G */
01910      , { 265, 235, 240, 190, 255} /* CG,UG,A,E,U/T */
01911      }
01912      , {{ 255, 205, 240, 160, 255} /* CG,UG,A,A,E */
01913      , { 210, 160, 195, 120, 210} /* CG,UG,A,A,A */
01914      , { 245, 195, 230, 150, 245} /* CG,UG,A,A,C */
01915      , { 160, 110, 145, 70, 160} /* CG,UG,A,A,G */
01916      , { 255, 205, 240, 160, 255} /* CG,UG,A,A,U/T */
01917      }
01918      , {{ 245, 195, 230, 180, 245} /* CG,UG,A,C,E */
01919      , { 245, 195, 230, 150, 245} /* CG,UG,A,C,A */
01920      , { 245, 195, 230, 180, 245} /* CG,UG,A,C,C */
01921      , { 230, 180, 215, 135, 230} /* CG,UG,A,C,G */
01922      , { 245, 195, 230, 180, 245} /* CG,UG,A,C,U/T */
01923      }
01924      , {{ 270, 220, 255, 175, 270} /* CG,UG,A,G,E */
01925      , { 245, 195, 230, 150, 245} /* CG,UG,A,G,A */
01926      , { 240, 190, 225, 145, 240} /* CG,UG,A,G,C */
01927      , { 165, 115, 150, 135, 165} /* CG,UG,A,G,G */
01928      , { 255, 205, 240, 160, 255} /* CG,UG,A,G,U/T */
01929      }
01930      , {{ 265, 235, 240, 190, 255} /* CG,UG,A,U/T,E */
01931      , { 255, 205, 240, 160, 255} /* CG,UG,A,U/T,A */
01932      , { 245, 195, 230, 180, 245} /* CG,UG,A,U/T,C */
01933      , { 255, 205, 240, 160, 255} /* CG,UG,A,U/T,G */
01934      , { 255, 225, 230, 150, 245} /* CG,UG,A,U/T,U/T */
01935      }
01936      }
01937      , {{ 285, 230, 285, 225, 270} /* CG,UG,C,E,E */
01938      , { 285, 230, 285, 225, 270} /* CG,UG,C,E,A */
01939      , { 230, 205, 230, 200, 215} /* CG,UG,C,E,C */
01940      , { 240, 215, 240, 210, 225} /* CG,UG,C,E,G */
01941      , { 240, 215, 240, 210, 225} /* CG,UG,C,E,U/T */
01942      }
01943      , {{ 240, 215, 240, 210, 225} /* CG,UG,C,A,E */
01944      , { 200, 175, 200, 170, 180} /* CG,UG,C,A,A */
01945      , { 230, 205, 230, 200, 215} /* CG,UG,C,A,C */
01946      , { 180, 125, 180, 120, 160} /* CG,UG,C,A,G */
01947      , { 240, 215, 240, 210, 225} /* CG,UG,C,A,U/T */
01948      }
01949      , {{ 230, 205, 230, 200, 215} /* CG,UG,C,C,E */
01950      , { 230, 205, 230, 200, 215} /* CG,UG,C,C,A */
01951      , { 230, 205, 230, 200, 215} /* CG,UG,C,C,C */
01952      , { 215, 190, 215, 185, 200} /* CG,UG,C,C,G */
01953      , { 230, 205, 230, 200, 215} /* CG,UG,C,C,U/T */
01954      }
01955      , {{ 285, 230, 285, 225, 270} /* CG,UG,C,G,E */
01956      , { 260, 205, 260, 200, 245} /* CG,UG,C,G,A */
01957      , { 225, 200, 225, 195, 210} /* CG,UG,C,G,C */
01958      , { 150, 125, 150, 120, 135} /* CG,UG,C,G,G */
01959      , { 240, 215, 240, 210, 225} /* CG,UG,C,G,U/T */
01960      }
01961      , {{ 240, 215, 240, 210, 225} /* CG,UG,C,U/T,E */
01962      , { 240, 215, 240, 210, 225} /* CG,UG,C,U/T,A */
01963      , { 230, 205, 230, 200, 215} /* CG,UG,C,U/T,C */
01964      , { 240, 215, 240, 210, 225} /* CG,UG,C,U/T,G */
01965      , { 230, 205, 230, 200, 215} /* CG,UG,C,U/T,U/T */
01966      }
01967      }
01968      , {{ 265, 190, 235, 215, 265} /* CG,UG,G,E,E */
01969      , { 265, 175, 235, 215, 265} /* CG,UG,G,E,A */
01970      , { 240, 180, 210, 125, 240} /* CG,UG,G,E,C */
01971      , { 250, 160, 220, 200, 250} /* CG,UG,G,E,G */
01972      , { 250, 190, 220, 200, 250} /* CG,UG,G,E,U/T */
01973      }
01974      , {{ 250, 160, 220, 135, 250} /* CG,UG,G,A,E */
01975      , { 205, 120, 175, 90, 205} /* CG,UG,G,A,A */
01976      , { 240, 150, 210, 125, 240} /* CG,UG,G,A,C */
01977      , { 155, 70, 125, 105, 155} /* CG,UG,G,A,G */
01978      , { 250, 160, 220, 135, 250} /* CG,UG,G,A,U/T */
01979      }
01980      , {{ 240, 180, 210, 125, 240} /* CG,UG,G,C,E */
01981      , { 240, 150, 210, 125, 240} /* CG,UG,G,C,A */
01982      , { 240, 180, 210, 125, 240} /* CG,UG,G,C,C */
01983      , { 225, 135, 195, 110, 225} /* CG,UG,G,C,G */
01984      , { 240, 180, 210, 125, 240} /* CG,UG,G,C,U/T */
01985      }
01986      , {{ 265, 175, 235, 215, 265} /* CG,UG,G,G,E */
01987      , { 240, 150, 210, 190, 240} /* CG,UG,G,G,A */

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01988      , {      235,      145,      205,      120,      235} /* CG,UG,G,G,C */
01989      , {      195,      135,      130,      175,      160} /* CG,UG,G,G,G */
01990      , {      250,      160,      220,      135,      250} /* CG,UG,G,G,U/T */
01991      }
01992      , { {      250,      190,      220,      200,      250} /* CG,UG,G,U/T,E */
01993      , {      250,      160,      220,      135,      250} /* CG,UG,G,U/T,A */
01994      , {      240,      180,      210,      125,      240} /* CG,UG,G,U/T,C */
01995      , {      250,      160,      220,      135,      250} /* CG,UG,G,U/T,G */
01996      , {      240,      150,      210,      190,      240} /* CG,UG,G,U/T,U/T */
01997      }
01998      }
01999      , { { {      295,      255,      270,      245,      185} /* CG,UG,U/T,E,E */
02000      , {      295,      255,      270,      245,      185} /* CG,UG,U/T,E,A */
02001      , {      240,      230,      215,      220,      160} /* CG,UG,U/T,E,C */
02002      , {      250,      240,      225,      230,      170} /* CG,UG,U/T,E,G */
02003      , {      250,      240,      225,      230,      170} /* CG,UG,U/T,E,U/T */
02004      }
02005      , { {      250,      240,      225,      230,      180} /* CG,UG,U/T,A,E */
02006      , {      205,      200,      180,      190,      155} /* CG,UG,U/T,A,A */
02007      , {      240,      230,      215,      220,      160} /* CG,UG,U/T,A,C */
02008      , {      185,      150,      160,      140,      80} /* CG,UG,U/T,A,G */
02009      , {      250,      240,      225,      230,      170} /* CG,UG,U/T,A,U/T */
02010      }
02011      , { {      240,      230,      215,      220,      160} /* CG,UG,U/T,C,E */
02012      , {      240,      230,      215,      220,      160} /* CG,UG,U/T,C,A */
02013      , {      240,      230,      215,      220,      160} /* CG,UG,U/T,C,C */
02014      , {      225,      215,      200,      205,      145} /* CG,UG,U/T,C,G */
02015      , {      240,      230,      215,      220,      160} /* CG,UG,U/T,C,U/T */
02016      }
02017      , { {      295,      255,      270,      245,      185} /* CG,UG,U/T,G,E */
02018      , {      270,      230,      245,      220,      160} /* CG,UG,U/T,G,A */
02019      , {      235,      225,      210,      215,      155} /* CG,UG,U/T,G,C */
02020      , {      180,      150,      135,      140,      145} /* CG,UG,U/T,G,G */
02021      , {      250,      240,      225,      230,      170} /* CG,UG,U/T,G,U/T */
02022      }
02023      , { { {      250,      240,      225,      230,      170} /* CG,UG,U/T,U/T,E */
02024      , {      250,      240,      225,      230,      170} /* CG,UG,U/T,U/T,A */
02025      , {      240,      230,      215,      220,      160} /* CG,UG,U/T,U/T,C */
02026      , {      250,      240,      225,      230,      170} /* CG,UG,U/T,U/T,G */
02027      , {      240,      230,      215,      220,      160} /* CG,UG,U/T,U/T,U/T */
02028      }
02029      }
02030      }
02031      , { { { {      265,      245,      250,      230,      255} /* CG,AT,E,E,E */
02032      , {      265,      245,      250,      230,      255} /* CG,AT,E,E,A */
02033      , {      240,      220,      225,      205,      230} /* CG,AT,E,E,C */
02034      , {      255,      235,      240,      225,      245} /* CG,AT,E,E,G */
02035      , {      255,      235,      240,      220,      245} /* CG,AT,E,E,U/T */
02036      }
02037      , { { {      265,      245,      250,      230,      255} /* CG,AT,E,A,E */
02038      , {      230,      210,      215,      195,      220} /* CG,AT,E,A,A */
02039      , {      225,      205,      210,      195,      215} /* CG,AT,E,A,C */
02040      , {      195,      150,      180,      140,      175} /* CG,AT,E,A,G */
02041      , {      250,      230,      235,      220,      240} /* CG,AT,E,A,U/T */
02042      }
02043      , { { {      245,      225,      230,      215,      235} /* CG,AT,E,C,E */
02044      , {      230,      210,      215,      200,      220} /* CG,AT,E,C,A */
02045      , {      240,      220,      225,      205,      230} /* CG,AT,E,C,C */
02046      , {      245,      225,      230,      215,      235} /* CG,AT,E,C,G */
02047      , {      235,      215,      220,      200,      225} /* CG,AT,E,C,U/T */
02048      }
02049      , { { {      260,      230,      245,      220,      240} /* CG,AT,E,G,E */
02050      , {      230,      185,      215,      175,      210} /* CG,AT,E,G,A */
02051      , {      230,      210,      215,      200,      220} /* CG,AT,E,G,C */
02052      , {      180,      145,      130,      170,      140} /* CG,AT,E,G,G */
02053      , {      250,      230,      235,      220,      240} /* CG,AT,E,G,U/T */
02054      }
02055      , { { {      255,      235,      240,      225,      245} /* CG,AT,E,U/T,E */
02056      , {      255,      235,      240,      225,      245} /* CG,AT,E,U/T,A */
02057      , {      235,      215,      220,      200,      225} /* CG,AT,E,U/T,C */
02058      , {      255,      235,      240,      225,      245} /* CG,AT,E,U/T,G */
02059      , {      190,      190,      165,      145,      170} /* CG,AT,E,U/T,U/T */
02060      }
02061      }
02062      , { { { {      255,      205,      240,      180,      255} /* CG,AT,A,E,E */
02063      , {      255,      205,      240,      160,      255} /* CG,AT,A,E,A */
02064      , {      230,      180,      215,      165,      230} /* CG,AT,A,E,C */
02065      , {      245,      195,      230,      155,      245} /* CG,AT,A,E,G */
02066      , {      245,      195,      230,      180,      245} /* CG,AT,A,E,U/T */
02067      }
02068      , { { {      255,      205,      240,      160,      255} /* CG,AT,A,A,E */
02069      , {      220,      170,      205,      125,      220} /* CG,AT,A,A,A */
02070      , {      215,      165,      200,      125,      215} /* CG,AT,A,A,C */
02071      , {      160,      110,      145,      70,      160} /* CG,AT,A,A,G */
02072      , {      240,      190,      225,      150,      240} /* CG,AT,A,A,U/T */
02073      }
02074      , { { {      235,      185,      220,      170,      235} /* CG,AT,A,C,E */
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02075      , {      220,      170,      205,      130,      220} /* CG,AT,A,C,A */
02076      , {      230,      180,      215,      165,      230} /* CG,AT,A,C,C */
02077      , {      235,      185,      220,      145,      235} /* CG,AT,A,C,G */
02078      , {      225,      175,      210,      160,      225} /* CG,AT,A,C,U/T */
02079      }
02080      , {{      240,      190,      225,      150,      240} /* CG,AT,A,G,E */
02081      , {      195,      145,      180,      105,      195} /* CG,AT,A,G,A */
02082      , {      220,      170,      205,      130,      220} /* CG,AT,A,G,C */
02083      , {      135,      85,      120,      110,      135} /* CG,AT,A,G,G */
02084      , {      240,      190,      225,      150,      240} /* CG,AT,A,G,U/T */
02085      }
02086      , {{      245,      195,      230,      180,      245} /* CG,AT,A,U/T,E */
02087      , {      245,      195,      230,      155,      245} /* CG,AT,A,U/T,A */
02088      , {      225,      175,      210,      160,      225} /* CG,AT,A,U/T,C */
02089      , {      245,      195,      230,      155,      245} /* CG,AT,A,U/T,G */
02090      , {      180,      150,      155,      80,      170} /* CG,AT,A,U/T,U/T */
02091      }
02092      }
02093      , {{{      245,      215,      245,      210,      225} /* CG,AT,C,E,E */
02094      , {      245,      215,      245,      210,      225} /* CG,AT,C,E,A */
02095      , {      215,      190,      215,      185,      200} /* CG,AT,C,E,C */
02096      , {      235,      210,      235,      205,      215} /* CG,AT,C,E,G */
02097      , {      230,      205,      230,      200,      215} /* CG,AT,C,E,U/T */
02098      }
02099      , {{      240,      215,      240,      210,      225} /* CG,AT,C,A,E */
02100      , {      205,      180,      205,      175,      190} /* CG,AT,C,A,A */
02101      , {      205,      180,      205,      175,      185} /* CG,AT,C,A,C */
02102      , {      180,      125,      180,      120,      160} /* CG,AT,C,A,G */
02103      , {      230,      205,      230,      200,      210} /* CG,AT,C,A,U/T */
02104      }
02105      , {{      225,      200,      225,      195,      205} /* CG,AT,C,C,E */
02106      , {      210,      185,      210,      180,      190} /* CG,AT,C,C,A */
02107      , {      215,      190,      215,      185,      200} /* CG,AT,C,C,C */
02108      , {      225,      200,      225,      195,      205} /* CG,AT,C,C,G */
02109      , {      210,      185,      210,      180,      195} /* CG,AT,C,C,U/T */
02110      }
02111      , {{      245,      205,      245,      200,      225} /* CG,AT,C,G,E */
02112      , {      215,      160,      215,      155,      195} /* CG,AT,C,G,A */
02113      , {      210,      185,      210,      180,      190} /* CG,AT,C,G,C */
02114      , {      125,      100,      125,      95,      105} /* CG,AT,C,G,G */
02115      , {      230,      205,      230,      200,      210} /* CG,AT,C,G,U/T */
02116      }
02117      , {{      235,      210,      235,      205,      215} /* CG,AT,C,U/T,E */
02118      , {      235,      210,      235,      205,      215} /* CG,AT,C,U/T,A */
02119      , {      210,      185,      210,      180,      195} /* CG,AT,C,U/T,C */
02120      , {      235,      210,      235,      205,      215} /* CG,AT,C,U/T,G */
02121      , {      155,      130,      155,      125,      140} /* CG,AT,C,U/T,U/T */
02122      }
02123      }
02124      , {{{      250,      180,      220,      175,      250} /* CG,AT,G,E,E */
02125      , {      250,      160,      220,      170,      250} /* CG,AT,G,E,A */
02126      , {      225,      165,      195,      110,      225} /* CG,AT,G,E,C */
02127      , {      240,      155,      210,      175,      240} /* CG,AT,G,E,G */
02128      , {      240,      180,      210,      145,      240} /* CG,AT,G,E,U/T */
02129      }
02130      , {{      250,      160,      220,      135,      250} /* CG,AT,G,A,E */
02131      , {      215,      125,      185,      100,      215} /* CG,AT,G,A,A */
02132      , {      210,      125,      180,      95,      210} /* CG,AT,G,A,C */
02133      , {      155,      70,      125,      105,      155} /* CG,AT,G,A,G */
02134      , {      235,      150,      205,      120,      235} /* CG,AT,G,A,U/T */
02135      }
02136      , {{{      230,      170,      200,      115,      230} /* CG,AT,G,C,E */
02137      , {      215,      130,      185,      100,      215} /* CG,AT,G,C,A */
02138      , {      225,      165,      195,      110,      225} /* CG,AT,G,C,C */
02139      , {      230,      145,      200,      115,      230} /* CG,AT,G,C,G */
02140      , {      220,      160,      190,      105,      220} /* CG,AT,G,C,U/T */
02141      }
02142      , {{      235,      150,      205,      175,      235} /* CG,AT,G,G,E */
02143      , {      190,      105,      160,      140,      190} /* CG,AT,G,G,A */
02144      , {      215,      130,      185,      100,      215} /* CG,AT,G,G,C */
02145      , {      165,      110,      100,      145,      130} /* CG,AT,G,G,G */
02146      , {      235,      150,      205,      120,      235} /* CG,AT,G,G,U/T */
02147      }
02148      , {{      240,      180,      210,      145,      240} /* CG,AT,G,U/T,E */
02149      , {      240,      155,      210,      125,      240} /* CG,AT,G,U/T,A */
02150      , {      220,      160,      190,      105,      220} /* CG,AT,G,U/T,C */
02151      , {      240,      155,      210,      125,      240} /* CG,AT,G,U/T,G */
02152      , {      165,      80,      135,      115,      165} /* CG,AT,G,U/T,U/T */
02153      }
02154      }
02155      , {{{      250,      240,      225,      230,      200} /* CG,AT,U/T,E,E */
02156      , {      250,      240,      225,      230,      200} /* CG,AT,U/T,E,A */
02157      , {      225,      215,      200,      205,      145} /* CG,AT,U/T,E,C */
02158      , {      240,      235,      215,      225,      160} /* CG,AT,U/T,E,G */
02159      , {      240,      230,      215,      220,      160} /* CG,AT,U/T,E,U/T */
02160      }
02161      , {{      250,      240,      225,      230,      200} /* CG,AT,U/T,A,E */

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02162      , {      215,      205,      190,      195,      165} /* CG,AT,U/T,A,A */
02163      , {      210,      205,      185,      195,      130} /* CG,AT,U/T,A,C */
02164      , {      185,      150,      160,      140,      80} /* CG,AT,U/T,A,G */
02165      , {      235,      230,      210,      220,      155} /* CG,AT,U/T,A,U/T */
02166      }
02167      , {{      230,      225,      205,      215,      150} /* CG,AT,U/T,C,E */
02168      , {      215,      210,      190,      200,      135} /* CG,AT,U/T,C,A */
02169      , {      225,      215,      200,      205,      145} /* CG,AT,U/T,C,C */
02170      , {      230,      225,      205,      215,      150} /* CG,AT,U/T,C,G */
02171      , {      220,      210,      195,      200,      140} /* CG,AT,U/T,C,U/T */
02172      }
02173      , {{      250,      230,      225,      220,      155} /* CG,AT,U/T,G,E */
02174      , {      220,      185,      195,      175,      110} /* CG,AT,U/T,G,A */
02175      , {      215,      210,      190,      200,      135} /* CG,AT,U/T,G,C */
02176      , {      150,      125,      105,      115,      115} /* CG,AT,U/T,G,G */
02177      , {      235,      230,      210,      220,      155} /* CG,AT,U/T,G,U/T */
02178      }
02179      , {{      240,      235,      215,      225,      160} /* CG,AT,U/T,U/T,E */
02180      , {      240,      235,      215,      225,      160} /* CG,AT,U/T,U/T,A */
02181      , {      220,      210,      195,      200,      140} /* CG,AT,U/T,U/T,C */
02182      , {      240,      235,      215,      225,      160} /* CG,AT,U/T,U/T,G */
02183      , {      165,      155,      140,      145,      85} /* CG,AT,U/T,U/T,U/T */
02184      }
02185      }
02186      }
02187      , {{{      265,      245,      250,      230,      255} /* CG,UA,E,E,E */
02188      , {      265,      245,      250,      230,      255} /* CG,UA,E,E,A */
02189      , {      250,      230,      235,      215,      240} /* CG,UA,E,E,C */
02190      , {      265,      245,      250,      230,      255} /* CG,UA,E,E,G */
02191      , {      265,      245,      250,      230,      255} /* CG,UA,E,E,U/T */
02192      }
02193      , {{      265,      245,      250,      230,      255} /* CG,UA,E,A,E */
02194      , {      235,      215,      220,      200,      225} /* CG,UA,E,A,A */
02195      , {      215,      195,      200,      185,      205} /* CG,UA,E,A,C */
02196      , {      205,      160,      190,      150,      185} /* CG,UA,E,A,G */
02197      , {      240,      220,      225,      210,      230} /* CG,UA,E,A,U/T */
02198      }
02199      , {{      265,      245,      250,      230,      255} /* CG,UA,E,C,E */
02200      , {      240,      220,      225,      205,      230} /* CG,UA,E,C,A */
02201      , {      250,      230,      235,      215,      240} /* CG,UA,E,C,C */
02202      , {      265,      245,      250,      230,      255} /* CG,UA,E,C,G */
02203      , {      245,      225,      230,      210,      235} /* CG,UA,E,C,U/T */
02204      }
02205      , {{      235,      215,      220,      205,      225} /* CG,UA,E,G,E */
02206      , {      210,      165,      195,      155,      190} /* CG,UA,E,G,A */
02207      , {      215,      195,      200,      185,      205} /* CG,UA,E,G,C */
02208      , {      190,      155,      140,      180,      150} /* CG,UA,E,G,G */
02209      , {      235,      215,      220,      205,      225} /* CG,UA,E,G,U/T */
02210      }
02211      , {{      265,      245,      250,      230,      255} /* CG,UA,E,U/T,E */
02212      , {      265,      245,      250,      230,      255} /* CG,UA,E,U/T,A */
02213      , {      230,      210,      215,      195,      220} /* CG,UA,E,U/T,C */
02214      , {      265,      245,      250,      230,      255} /* CG,UA,E,U/T,G */
02215      , {      200,      200,      175,      160,      180} /* CG,UA,E,U/T,U/T */
02216      }
02217      }
02218      , {{{      255,      205,      240,      190,      255} /* CG,UA,A,E,E */
02219      , {      255,      205,      240,      160,      255} /* CG,UA,A,E,A */
02220      , {      240,      190,      225,      175,      240} /* CG,UA,A,E,C */
02221      , {      255,      205,      240,      160,      255} /* CG,UA,A,E,G */
02222      , {      255,      205,      240,      190,      255} /* CG,UA,A,E,U/T */
02223      }
02224      , {{      255,      205,      240,      160,      255} /* CG,UA,A,A,E */
02225      , {      225,      175,      210,      130,      225} /* CG,UA,A,A,A */
02226      , {      205,      155,      190,      115,      205} /* CG,UA,A,A,C */
02227      , {      170,      120,      155,      80,      170} /* CG,UA,A,A,G */
02228      , {      230,      180,      215,      140,      230} /* CG,UA,A,A,U/T */
02229      }
02230      , {{      255,      205,      240,      190,      255} /* CG,UA,A,C,E */
02231      , {      230,      180,      215,      135,      230} /* CG,UA,A,C,A */
02232      , {      240,      190,      225,      175,      240} /* CG,UA,A,C,C */
02233      , {      255,      205,      240,      160,      255} /* CG,UA,A,C,G */
02234      , {      235,      185,      220,      170,      235} /* CG,UA,A,C,U/T */
02235      }
02236      , {{      225,      175,      210,      145,      225} /* CG,UA,A,G,E */
02237      , {      175,      125,      160,      85,      175} /* CG,UA,A,G,A */
02238      , {      205,      155,      190,      115,      205} /* CG,UA,A,G,C */
02239      , {      145,      95,      130,      120,      145} /* CG,UA,A,G,G */
02240      , {      225,      175,      210,      135,      225} /* CG,UA,A,G,U/T */
02241      }
02242      , {{      255,      205,      240,      175,      255} /* CG,UA,A,U/T,E */
02243      , {      255,      205,      240,      160,      255} /* CG,UA,A,U/T,A */
02244      , {      220,      170,      205,      155,      220} /* CG,UA,A,U/T,C */
02245      , {      255,      205,      240,      160,      255} /* CG,UA,A,U/T,G */
02246      , {      190,      160,      165,      90,      180} /* CG,UA,A,U/T,U/T */
02247      }
02248      }

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02249 ,{{{ 240, 215, 240, 210, 225} /* CG,UA,C,E,E */
02250 ,{ 240, 215, 240, 210, 225} /* CG,UA,C,E,A */
02251 ,{ 225, 200, 225, 195, 210} /* CG,UA,C,E,C */
02252 ,{ 240, 215, 240, 210, 225} /* CG,UA,C,E,G */
02253 ,{ 240, 215, 240, 210, 225} /* CG,UA,C,E,U/T */
02254 }
02255 ,{{{ 240, 215, 240, 210, 225} /* CG,UA,C,A,E */
02256 ,{ 210, 185, 210, 180, 195} /* CG,UA,C,A,A */
02257 ,{ 195, 170, 195, 165, 175} /* CG,UA,C,A,C */
02258 ,{ 190, 135, 190, 130, 170} /* CG,UA,C,A,G */
02259 ,{ 220, 195, 220, 190, 200} /* CG,UA,C,A,U/T */
02260 }
02261 ,{{{ 240, 215, 240, 210, 225} /* CG,UA,C,C,E */
02262 ,{ 215, 190, 215, 185, 200} /* CG,UA,C,C,A */
02263 ,{ 225, 200, 225, 195, 210} /* CG,UA,C,C,C */
02264 ,{ 240, 215, 240, 210, 225} /* CG,UA,C,C,G */
02265 ,{ 220, 195, 220, 190, 205} /* CG,UA,C,C,U/T */
02266 }
02267 ,{{{ 220, 190, 220, 185, 200} /* CG,UA,C,G,E */
02268 ,{ 195, 140, 195, 135, 175} /* CG,UA,C,G,A */
02269 ,{ 195, 170, 195, 165, 175} /* CG,UA,C,G,C */
02270 ,{ 135, 110, 135, 105, 115} /* CG,UA,C,G,G */
02271 ,{ 215, 190, 215, 185, 195} /* CG,UA,C,G,U/T */
02272 }
02273 ,{{{ 240, 215, 240, 210, 225} /* CG,UA,C,U/T,E */
02274 ,{ 240, 215, 240, 210, 225} /* CG,UA,C,U/T,A */
02275 ,{ 205, 180, 205, 175, 190} /* CG,UA,C,U/T,C */
02276 ,{ 240, 215, 240, 210, 225} /* CG,UA,C,U/T,G */
02277 ,{ 170, 145, 170, 140, 150} /* CG,UA,C,U/T,U/T */
02278 }
02279 }
02280 ,{{{ 250, 190, 220, 185, 250} /* CG,UA,G,E,E */
02281 ,{ 250, 160, 220, 150, 250} /* CG,UA,G,E,A */
02282 ,{ 235, 175, 205, 120, 235} /* CG,UA,G,E,C */
02283 ,{ 250, 160, 220, 185, 250} /* CG,UA,G,E,G */
02284 ,{ 250, 190, 220, 155, 250} /* CG,UA,G,E,U/T */
02285 }
02286 ,{{{ 250, 160, 220, 145, 250} /* CG,UA,G,A,E */
02287 ,{ 220, 130, 190, 105, 220} /* CG,UA,G,A,A */
02288 ,{ 200, 115, 170, 85, 200} /* CG,UA,G,A,C */
02289 ,{ 165, 80, 135, 115, 165} /* CG,UA,G,A,G */
02290 ,{ 225, 140, 195, 110, 225} /* CG,UA,G,A,U/T */
02291 }
02292 ,{{{ 250, 190, 220, 135, 250} /* CG,UA,G,C,E */
02293 ,{ 225, 135, 195, 110, 225} /* CG,UA,G,C,A */
02294 ,{ 235, 175, 205, 120, 235} /* CG,UA,G,C,C */
02295 ,{ 250, 160, 220, 135, 250} /* CG,UA,G,C,G */
02296 ,{ 230, 170, 200, 115, 230} /* CG,UA,G,C,U/T */
02297 }
02298 ,{{{ 220, 145, 190, 180, 220} /* CG,UA,G,G,E */
02299 ,{ 170, 85, 140, 120, 170} /* CG,UA,G,G,A */
02300 ,{ 200, 115, 170, 85, 200} /* CG,UA,G,G,C */
02301 ,{ 175, 120, 110, 155, 140} /* CG,UA,G,G,G */
02302 ,{ 220, 135, 190, 105, 220} /* CG,UA,G,G,U/T */
02303 }
02304 ,{{{ 250, 175, 220, 155, 250} /* CG,UA,G,U/T,E */
02305 ,{ 250, 160, 220, 135, 250} /* CG,UA,G,U/T,A */
02306 ,{ 215, 155, 185, 100, 215} /* CG,UA,G,U/T,C */
02307 ,{ 250, 160, 220, 135, 250} /* CG,UA,G,U/T,G */
02308 ,{ 175, 90, 145, 125, 175} /* CG,UA,G,U/T,U/T */
02309 }
02310 }
02311 ,{{{ 250, 240, 225, 230, 200} /* CG,UA,U/T,E,E */
02312 ,{ 250, 240, 225, 230, 200} /* CG,UA,U/T,E,A */
02313 ,{ 235, 225, 210, 215, 155} /* CG,UA,U/T,E,C */
02314 ,{ 250, 240, 225, 230, 170} /* CG,UA,U/T,E,G */
02315 ,{ 250, 240, 225, 230, 170} /* CG,UA,U/T,E,U/T */
02316 }
02317 ,{{{ 250, 240, 225, 230, 200} /* CG,UA,U/T,A,E */
02318 ,{ 220, 210, 195, 200, 170} /* CG,UA,U/T,A,A */
02319 ,{ 200, 195, 175, 185, 120} /* CG,UA,U/T,A,C */
02320 ,{ 195, 160, 170, 150, 85} /* CG,UA,U/T,A,G */
02321 ,{ 225, 220, 200, 210, 145} /* CG,UA,U/T,A,U/T */
02322 }
02323 ,{{{ 250, 240, 225, 230, 170} /* CG,UA,U/T,C,E */
02324 ,{ 225, 215, 200, 205, 145} /* CG,UA,U/T,C,A */
02325 ,{ 235, 225, 210, 215, 155} /* CG,UA,U/T,C,C */
02326 ,{ 250, 240, 225, 230, 170} /* CG,UA,U/T,C,G */
02327 ,{ 230, 220, 205, 210, 150} /* CG,UA,U/T,C,U/T */
02328 }
02329 ,{{{ 225, 215, 200, 205, 150} /* CG,UA,U/T,G,E */
02330 ,{ 200, 165, 175, 155, 90} /* CG,UA,U/T,G,A */
02331 ,{ 200, 195, 175, 185, 120} /* CG,UA,U/T,G,C */
02332 ,{ 160, 135, 115, 125, 125} /* CG,UA,U/T,G,G */
02333 ,{ 220, 215, 195, 205, 140} /* CG,UA,U/T,G,U/T */
02334 }
02335 ,{{{ 250, 240, 225, 230, 170} /* CG,UA,U/T,U/T,E */

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02336      , {      250,      240,      225,      230,      170} /* CG,UA,U/T,U/T,A */
02337      , {      215,      205,      190,      195,      135} /* CG,UA,U/T,U/T,C */
02338      , {      250,      240,      225,      230,      170} /* CG,UA,U/T,U/T,G */
02339      , {      175,      170,      150,      160,      95} /* CG,UA,U/T,U/T,U/T */
02340      }
02341      }
02342      }
02343      , {{{      300,      290,      285,      265,      285} /* CG,NN,E,E,E */
02344      , {      300,      280,      285,      265,      285} /* CG,NN,E,E,A */
02345      , {      270,      250,      255,      235,      260} /* CG,NN,E,E,C */
02346      , {      280,      260,      265,      245,      270} /* CG,NN,E,E,G */
02347      , {      290,      290,      265,      245,      270} /* CG,NN,E,E,U/T */
02348      }
02349      , {{{      295,      280,      280,      265,      285} /* CG,NN,E,A,E */
02350      , {      270,      255,      255,      240,      260} /* CG,NN,E,A,A */
02351      , {      270,      250,      255,      235,      260} /* CG,NN,E,A,C */
02352      , {      235,      195,      220,      180,      220} /* CG,NN,E,A,G */
02353      , {      280,      260,      265,      245,      270} /* CG,NN,E,A,U/T */
02354      }
02355      , {{{      280,      260,      265,      245,      270} /* CG,NN,E,C,E */
02356      , {      270,      250,      255,      235,      260} /* CG,NN,E,C,A */
02357      , {      270,      250,      255,      235,      260} /* CG,NN,E,C,C */
02358      , {      280,      260,      265,      245,      270} /* CG,NN,E,C,G */
02359      , {      270,      250,      255,      235,      260} /* CG,NN,E,C,U/T */
02360      }
02361      , {{{      300,      260,      285,      245,      285} /* CG,NN,E,G,E */
02362      , {      275,      235,      260,      220,      260} /* CG,NN,E,G,A */
02363      , {      265,      245,      250,      230,      255} /* CG,NN,E,G,C */
02364      , {      225,      185,      175,      215,      185} /* CG,NN,E,G,G */
02365      , {      280,      260,      265,      245,      270} /* CG,NN,E,G,U/T */
02366      }
02367      , {{{      290,      290,      265,      245,      270} /* CG,NN,E,U/T,E */
02368      , {      280,      260,      265,      245,      270} /* CG,NN,E,U/T,A */
02369      , {      270,      250,      255,      235,      260} /* CG,NN,E,U/T,C */
02370      , {      280,      260,      265,      245,      270} /* CG,NN,E,U/T,G */
02371      , {      280,      280,      255,      235,      260} /* CG,NN,E,U/T,U/T */
02372      }
02373      }
02374      , {{{      285,      250,      270,      205,      285} /* CG,NN,A,E,E */
02375      , {      285,      240,      270,      195,      285} /* CG,NN,A,E,A */
02376      , {      260,      210,      245,      195,      260} /* CG,NN,A,E,C */
02377      , {      270,      220,      255,      175,      270} /* CG,NN,A,E,G */
02378      , {      280,      250,      255,      205,      270} /* CG,NN,A,E,U/T */
02379      }
02380      , {{{      285,      240,      270,      195,      285} /* CG,NN,A,A,E */
02381      , {      260,      215,      245,      170,      260} /* CG,NN,A,A,A */
02382      , {      260,      210,      245,      165,      260} /* CG,NN,A,A,C */
02383      , {      205,      155,      190,      110,      205} /* CG,NN,A,A,G */
02384      , {      270,      220,      255,      175,      270} /* CG,NN,A,A,U/T */
02385      }
02386      , {{{      270,      220,      255,      205,      270} /* CG,NN,A,C,E */
02387      , {      260,      210,      245,      165,      260} /* CG,NN,A,C,A */
02388      , {      260,      210,      245,      195,      260} /* CG,NN,A,C,C */
02389      , {      270,      220,      255,      175,      270} /* CG,NN,A,C,G */
02390      , {      260,      210,      245,      195,      260} /* CG,NN,A,C,U/T */
02391      }
02392      , {{{      270,      220,      255,      175,      270} /* CG,NN,A,G,E */
02393      , {      245,      195,      230,      150,      245} /* CG,NN,A,G,A */
02394      , {      255,      205,      240,      160,      255} /* CG,NN,A,G,C */
02395      , {      180,      130,      165,      150,      180} /* CG,NN,A,G,G */
02396      , {      270,      220,      255,      175,      270} /* CG,NN,A,G,U/T */
02397      }
02398      , {{{      280,      250,      255,      205,      270} /* CG,NN,A,U/T,E */
02399      , {      270,      220,      255,      175,      270} /* CG,NN,A,U/T,A */
02400      , {      260,      210,      245,      195,      260} /* CG,NN,A,U/T,C */
02401      , {      270,      220,      255,      175,      270} /* CG,NN,A,U/T,G */
02402      , {      270,      240,      245,      165,      260} /* CG,NN,A,U/T,U/T */
02403      }
02404      }
02405      , {{{      285,      250,      285,      245,      270} /* CG,NN,C,E,E */
02406      , {      285,      250,      285,      245,      270} /* CG,NN,C,E,A */
02407      , {      245,      220,      245,      215,      230} /* CG,NN,C,E,C */
02408      , {      255,      230,      255,      225,      240} /* CG,NN,C,E,G */
02409      , {      255,      230,      255,      225,      240} /* CG,NN,C,E,U/T */
02410      }
02411      , {{{      275,      250,      275,      245,      255} /* CG,NN,C,A,E */
02412      , {      250,      225,      250,      220,      230} /* CG,NN,C,A,A */
02413      , {      245,      220,      245,      215,      230} /* CG,NN,C,A,C */
02414      , {      220,      165,      220,      160,      205} /* CG,NN,C,A,G */
02415      , {      255,      230,      255,      225,      240} /* CG,NN,C,A,U/T */
02416      }
02417      , {{{      255,      230,      255,      225,      240} /* CG,NN,C,C,E */
02418      , {      245,      220,      245,      215,      230} /* CG,NN,C,C,A */
02419      , {      245,      220,      245,      215,      230} /* CG,NN,C,C,C */
02420      , {      255,      230,      255,      225,      240} /* CG,NN,C,C,G */
02421      , {      245,      220,      245,      215,      230} /* CG,NN,C,C,U/T */
02422      }

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02423 ,{{ 285, 230, 285, 225, 270} /* CG,NN,C,G,E */
02424 ,{ 260, 205, 260, 200, 245} /* CG,NN,C,G,A */
02425 ,{ 240, 215, 240, 210, 225} /* CG,NN,C,G,C */
02426 ,{ 165, 140, 165, 135, 150} /* CG,NN,C,G,G */
02427 ,{ 255, 230, 255, 225, 240} /* CG,NN,C,G,U/T */
02428 }
02429 ,{{ 255, 230, 255, 225, 240} /* CG,NN,C,U/T,E */
02430 ,{ 255, 230, 255, 225, 240} /* CG,NN,C,U/T,A */
02431 ,{ 245, 220, 245, 215, 230} /* CG,NN,C,U/T,C */
02432 ,{ 255, 230, 255, 225, 240} /* CG,NN,C,U/T,G */
02433 ,{ 245, 220, 245, 215, 230} /* CG,NN,C,U/T,U/T */
02434 }
02435 }
02436 ,{{{ 280, 205, 250, 215, 280} /* CG,NN,G,E,E */
02437 ,{ 280, 195, 250, 215, 280} /* CG,NN,G,E,A */
02438 ,{ 255, 195, 225, 140, 255} /* CG,NN,G,E,C */
02439 ,{ 265, 175, 235, 215, 265} /* CG,NN,G,E,G */
02440 ,{ 265, 205, 235, 215, 265} /* CG,NN,G,E,U/T */
02441 }
02442 ,{{ 280, 195, 250, 175, 280} /* CG,NN,G,A,E */
02443 ,{ 255, 170, 225, 140, 255} /* CG,NN,G,A,A */
02444 ,{ 255, 165, 225, 140, 255} /* CG,NN,G,A,C */
02445 ,{ 200, 110, 170, 150, 200} /* CG,NN,G,A,G */
02446 ,{ 265, 175, 235, 150, 265} /* CG,NN,G,A,U/T */
02447 }
02448 ,{{ 265, 205, 235, 150, 265} /* CG,NN,G,C,E */
02449 ,{ 255, 165, 225, 140, 255} /* CG,NN,G,C,A */
02450 ,{ 255, 195, 225, 140, 255} /* CG,NN,G,C,C */
02451 ,{ 265, 175, 235, 150, 265} /* CG,NN,G,C,G */
02452 ,{ 255, 195, 225, 140, 255} /* CG,NN,G,C,U/T */
02453 }
02454 ,{{ 265, 175, 235, 215, 265} /* CG,NN,G,G,E */
02455 ,{ 240, 150, 210, 190, 240} /* CG,NN,G,G,A */
02456 ,{ 250, 160, 220, 135, 250} /* CG,NN,G,G,C */
02457 ,{ 210, 150, 145, 190, 175} /* CG,NN,G,G,G */
02458 ,{ 265, 175, 235, 150, 265} /* CG,NN,G,G,U/T */
02459 }
02460 ,{{ 265, 205, 235, 215, 265} /* CG,NN,G,U/T,E */
02461 ,{ 265, 175, 235, 150, 265} /* CG,NN,G,U/T,A */
02462 ,{ 255, 195, 225, 140, 255} /* CG,NN,G,U/T,C */
02463 ,{ 265, 175, 235, 150, 265} /* CG,NN,G,U/T,G */
02464 ,{ 255, 165, 225, 205, 255} /* CG,NN,G,U/T,U/T */
02465 }
02466 }
02467 ,{{{ 295, 275, 270, 265, 230} /* CG,NN,U/T,E,E */
02468 ,{ 295, 275, 270, 265, 230} /* CG,NN,U/T,E,A */
02469 ,{ 255, 245, 230, 235, 175} /* CG,NN,U/T,E,C */
02470 ,{ 265, 255, 240, 245, 185} /* CG,NN,U/T,E,G */
02471 ,{ 265, 255, 240, 245, 185} /* CG,NN,U/T,E,U/T */
02472 }
02473 ,{{ 280, 275, 255, 265, 230} /* CG,NN,U/T,A,E */
02474 ,{ 255, 250, 230, 240, 205} /* CG,NN,U/T,A,A */
02475 ,{ 255, 245, 230, 235, 175} /* CG,NN,U/T,A,C */
02476 ,{ 230, 190, 205, 180, 120} /* CG,NN,U/T,A,G */
02477 ,{ 265, 255, 240, 245, 185} /* CG,NN,U/T,A,U/T */
02478 }
02479 ,{{ 265, 255, 240, 245, 185} /* CG,NN,U/T,C,E */
02480 ,{ 255, 245, 230, 235, 175} /* CG,NN,U/T,C,A */
02481 ,{ 255, 245, 230, 235, 175} /* CG,NN,U/T,C,C */
02482 ,{ 265, 255, 240, 245, 185} /* CG,NN,U/T,C,G */
02483 ,{ 255, 245, 230, 235, 175} /* CG,NN,U/T,C,U/T */
02484 }
02485 ,{{ 295, 255, 270, 245, 185} /* CG,NN,U/T,G,E */
02486 ,{ 270, 230, 245, 220, 160} /* CG,NN,U/T,G,A */
02487 ,{ 250, 240, 225, 230, 170} /* CG,NN,U/T,G,C */
02488 ,{ 195, 165, 150, 155, 160} /* CG,NN,U/T,G,G */
02489 ,{ 265, 255, 240, 245, 185} /* CG,NN,U/T,G,U/T */
02490 }
02491 ,{{ 265, 255, 240, 245, 185} /* CG,NN,U/T,U/T,E */
02492 ,{ 265, 255, 240, 245, 185} /* CG,NN,U/T,U/T,A */
02493 ,{ 255, 245, 230, 235, 175} /* CG,NN,U/T,U/T,C */
02494 ,{ 265, 255, 240, 245, 185} /* CG,NN,U/T,U/T,G */
02495 ,{ 255, 245, 230, 235, 175} /* CG,NN,U/T,U/T,U/T */
02496 }
02497 }
02498 }
02499 }
02500 ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,E,E */
02501 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,A */
02502 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,C */
02503 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,G */
02504 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,U/T */
02505 }
02506 ,{{ INF, INF, INF, INF, INF} /* GC,NP,E,A,E */
02507 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,A */
02508 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,C */
02509 ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,G */

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02510 , { INF, INF, INF, INF, INF} /* GC, NP, E, A, U/T */
02511 }
02512 , { { INF, INF, INF, INF, INF} /* GC, NP, E, C, E */
02513 , { INF, INF, INF, INF, INF} /* GC, NP, E, C, A */
02514 , { INF, INF, INF, INF, INF} /* GC, NP, E, C, C */
02515 , { INF, INF, INF, INF, INF} /* GC, NP, E, C, G */
02516 , { INF, INF, INF, INF, INF} /* GC, NP, E, C, U/T */
02517 }
02518 , { { INF, INF, INF, INF, INF} /* GC, NP, E, G, E */
02519 , { INF, INF, INF, INF, INF} /* GC, NP, E, G, A */
02520 , { INF, INF, INF, INF, INF} /* GC, NP, E, G, C */
02521 , { INF, INF, INF, INF, INF} /* GC, NP, E, G, G */
02522 , { INF, INF, INF, INF, INF} /* GC, NP, E, G, U/T */
02523 }
02524 , { { INF, INF, INF, INF, INF} /* GC, NP, E, U/T, E */
02525 , { INF, INF, INF, INF, INF} /* GC, NP, E, U/T, A */
02526 , { INF, INF, INF, INF, INF} /* GC, NP, E, U/T, C */
02527 , { INF, INF, INF, INF, INF} /* GC, NP, E, U/T, G */
02528 , { INF, INF, INF, INF, INF} /* GC, NP, E, U/T, U/T */
02529 }
02530 }
02531 , { { { INF, INF, INF, INF, INF} /* GC, NP, A, E, E */
02532 , { INF, INF, INF, INF, INF} /* GC, NP, A, E, A */
02533 , { INF, INF, INF, INF, INF} /* GC, NP, A, E, C */
02534 , { INF, INF, INF, INF, INF} /* GC, NP, A, E, G */
02535 , { INF, INF, INF, INF, INF} /* GC, NP, A, E, U/T */
02536 }
02537 , { { INF, INF, INF, INF, INF} /* GC, NP, A, A, E */
02538 , { INF, INF, INF, INF, INF} /* GC, NP, A, A, A */
02539 , { INF, INF, INF, INF, INF} /* GC, NP, A, A, C */
02540 , { INF, INF, INF, INF, INF} /* GC, NP, A, A, G */
02541 , { INF, INF, INF, INF, INF} /* GC, NP, A, A, U/T */
02542 }
02543 , { { INF, INF, INF, INF, INF} /* GC, NP, A, C, E */
02544 , { INF, INF, INF, INF, INF} /* GC, NP, A, C, A */
02545 , { INF, INF, INF, INF, INF} /* GC, NP, A, C, C */
02546 , { INF, INF, INF, INF, INF} /* GC, NP, A, C, G */
02547 , { INF, INF, INF, INF, INF} /* GC, NP, A, C, U/T */
02548 }
02549 , { { INF, INF, INF, INF, INF} /* GC, NP, A, G, E */
02550 , { INF, INF, INF, INF, INF} /* GC, NP, A, G, A */
02551 , { INF, INF, INF, INF, INF} /* GC, NP, A, G, C */
02552 , { INF, INF, INF, INF, INF} /* GC, NP, A, G, G */
02553 , { INF, INF, INF, INF, INF} /* GC, NP, A, G, U/T */
02554 }
02555 , { { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, E */
02556 , { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, A */
02557 , { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, C */
02558 , { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, G */
02559 , { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, U/T */
02560 }
02561 }
02562 , { { { INF, INF, INF, INF, INF} /* GC, NP, C, E, E */
02563 , { INF, INF, INF, INF, INF} /* GC, NP, C, E, A */
02564 , { INF, INF, INF, INF, INF} /* GC, NP, C, E, C */
02565 , { INF, INF, INF, INF, INF} /* GC, NP, C, E, G */
02566 , { INF, INF, INF, INF, INF} /* GC, NP, C, E, U/T */
02567 }
02568 , { { INF, INF, INF, INF, INF} /* GC, NP, C, A, E */
02569 , { INF, INF, INF, INF, INF} /* GC, NP, C, A, A */
02570 , { INF, INF, INF, INF, INF} /* GC, NP, C, A, C */
02571 , { INF, INF, INF, INF, INF} /* GC, NP, C, A, G */
02572 , { INF, INF, INF, INF, INF} /* GC, NP, C, A, U/T */
02573 }
02574 , { { INF, INF, INF, INF, INF} /* GC, NP, C, C, E */
02575 , { INF, INF, INF, INF, INF} /* GC, NP, C, C, A */
02576 , { INF, INF, INF, INF, INF} /* GC, NP, C, C, C */
02577 , { INF, INF, INF, INF, INF} /* GC, NP, C, C, G */
02578 , { INF, INF, INF, INF, INF} /* GC, NP, C, C, U/T */
02579 }
02580 , { { INF, INF, INF, INF, INF} /* GC, NP, C, G, E */
02581 , { INF, INF, INF, INF, INF} /* GC, NP, C, G, A */
02582 , { INF, INF, INF, INF, INF} /* GC, NP, C, G, C */
02583 , { INF, INF, INF, INF, INF} /* GC, NP, C, G, G */
02584 , { INF, INF, INF, INF, INF} /* GC, NP, C, G, U/T */
02585 }
02586 , { { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, E */
02587 , { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, A */
02588 , { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, C */
02589 , { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, G */
02590 , { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, U/T */
02591 }
02592 }
02593 , { { { INF, INF, INF, INF, INF} /* GC, NP, G, E, E */
02594 , { INF, INF, INF, INF, INF} /* GC, NP, G, E, A */
02595 , { INF, INF, INF, INF, INF} /* GC, NP, G, E, C */
02596 , { INF, INF, INF, INF, INF} /* GC, NP, G, E, G */

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02597 , { INF, INF, INF, INF, INF} /* GC,NP,G,E,U/T */
02598 }
02599 , {{ INF, INF, INF, INF, INF} /* GC,NP,G,A,E */
02600 , { INF, INF, INF, INF, INF} /* GC,NP,G,A,A */
02601 , { INF, INF, INF, INF, INF} /* GC,NP,G,A,C */
02602 , { INF, INF, INF, INF, INF} /* GC,NP,G,A,G */
02603 , { INF, INF, INF, INF, INF} /* GC,NP,G,A,U/T */
02604 }
02605 , {{ INF, INF, INF, INF, INF} /* GC,NP,G,C,E */
02606 , { INF, INF, INF, INF, INF} /* GC,NP,G,C,A */
02607 , { INF, INF, INF, INF, INF} /* GC,NP,G,C,C */
02608 , { INF, INF, INF, INF, INF} /* GC,NP,G,C,G */
02609 , { INF, INF, INF, INF, INF} /* GC,NP,G,C,U/T */
02610 }
02611 , {{ INF, INF, INF, INF, INF} /* GC,NP,G,G,E */
02612 , { INF, INF, INF, INF, INF} /* GC,NP,G,G,A */
02613 , { INF, INF, INF, INF, INF} /* GC,NP,G,G,C */
02614 , { INF, INF, INF, INF, INF} /* GC,NP,G,G,G */
02615 , { INF, INF, INF, INF, INF} /* GC,NP,G,G,U/T */
02616 }
02617 , {{ INF, INF, INF, INF, INF} /* GC,NP,G,U/T,E */
02618 , { INF, INF, INF, INF, INF} /* GC,NP,G,U/T,A */
02619 , { INF, INF, INF, INF, INF} /* GC,NP,G,U/T,C */
02620 , { INF, INF, INF, INF, INF} /* GC,NP,G,U/T,G */
02621 , { INF, INF, INF, INF, INF} /* GC,NP,G,U/T,U/T */
02622 }
02623 }
02624 , {{{ INF, INF, INF, INF, INF} /* GC,NP,U/T,E,E */
02625 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,E,A */
02626 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,E,C */
02627 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,E,G */
02628 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,E,U/T */
02629 }
02630 , {{ INF, INF, INF, INF, INF} /* GC,NP,U/T,A,E */
02631 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,A,A */
02632 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,A,C */
02633 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,A,G */
02634 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,A,U/T */
02635 }
02636 , {{ INF, INF, INF, INF, INF} /* GC,NP,U/T,C,E */
02637 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,C,A */
02638 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,C,C */
02639 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,C,G */
02640 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,C,U/T */
02641 }
02642 , {{ INF, INF, INF, INF, INF} /* GC,NP,U/T,G,E */
02643 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,G,A */
02644 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,G,C */
02645 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,G,G */
02646 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,G,U/T */
02647 }
02648 , {{ INF, INF, INF, INF, INF} /* GC,NP,U/T,U/T,E */
02649 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,U/T,A */
02650 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,U/T,C */
02651 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,U/T,G */
02652 , { INF, INF, INF, INF, INF} /* GC,NP,U/T,U/T,U/T */
02653 }
02654 }
02655 }
02656 , {{{ 240, 235, 210, 200, 205} /* GC,CG,E,E,E */
02657 , { 205, 200, 180, 190, 195} /* GC,CG,E,E,A */
02658 , { 225, 220, 195, 175, 185} /* GC,CG,E,E,C */
02659 , { 200, 195, 175, 185, 190} /* GC,CG,E,E,G */
02660 , { 200, 195, 175, 195, 190} /* GC,CG,E,E,U/T */
02661 }
02662 , {{ 205, 190, 170, 180, 205} /* GC,CG,E,A,E */
02663 , { 165, 150, 130, 140, 165} /* GC,CG,E,A,A */
02664 , { 170, 165, 145, 150, 160} /* GC,CG,E,A,C */
02665 , { 140, 95, 115, 95, 140} /* GC,CG,E,A,G */
02666 , { 195, 190, 165, 175, 185} /* GC,CG,E,A,U/T */
02667 }
02668 , {{ 225, 220, 195, 185, 190} /* GC,CG,E,C,E */
02669 , { 180, 175, 165, 175, 180} /* GC,CG,E,C,A */
02670 , { 225, 220, 195, 175, 185} /* GC,CG,E,C,C */
02671 , { 170, 165, 145, 155, 160} /* GC,CG,E,C,G */
02672 , { 175, 170, 150, 160, 165} /* GC,CG,E,C,U/T */
02673 }
02674 , {{ 190, 180, 155, 165, 190} /* GC,CG,E,G,E */
02675 , { 140, 95, 115, 95, 140} /* GC,CG,E,G,A */
02676 , { 165, 160, 135, 145, 155} /* GC,CG,E,G,C */
02677 , { 165, 85, 90, 130, 165} /* GC,CG,E,G,G */
02678 , { 185, 180, 155, 165, 175} /* GC,CG,E,G,U/T */
02679 }
02680 , {{ 205, 200, 190, 190, 195} /* GC,CG,E,U/T,E */
02681 , { 205, 200, 180, 190, 195} /* GC,CG,E,U/T,A */
02682 , { 190, 170, 175, 160, 165} /* GC,CG,E,U/T,C */
02683 , { 200, 195, 175, 185, 190} /* GC,CG,E,U/T,G */

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02684      , {      165,      160,      95,      160,      110} /* GC,CG,E,U/T,U/T */
02685      }
02686      }
02687      ,{{{      230,      200,      200,      165,      190} /* GC,CG,A,E,E */
02688      , {      195,      165,      165,      105,      180} /* GC,CG,A,E,A */
02689      , {      215,      185,      185,      115,      170} /* GC,CG,A,E,C */
02690      , {      190,      160,      160,      95,      175} /* GC,CG,A,E,G */
02691      , {      190,      160,      160,      165,      175} /* GC,CG,A,E,U/T */
02692      }
02693      ,{{{      185,      155,      160,      130,      170} /* GC,CG,A,A,E */
02694      , {      145,      115,      115,      75,      130} /* GC,CG,A,A,A */
02695      , {      160,      130,      135,      105,      145} /* GC,CG,A,A,C */
02696      , {      120,      45,      105,      35,      90} /* GC,CG,A,A,G */
02697      , {      185,      155,      155,      90,      170} /* GC,CG,A,A,U/T */
02698      }
02699      ,{{{      215,      185,      185,      115,      175} /* GC,CG,A,C,E */
02700      , {      165,      95,      105,      85,      165} /* GC,CG,A,C,A */
02701      , {      215,      185,      185,      115,      170} /* GC,CG,A,C,C */
02702      , {      160,      130,      130,      65,      145} /* GC,CG,A,C,G */
02703      , {      165,      135,      135,      95,      150} /* GC,CG,A,C,U/T */
02704      }
02705      ,{{{      175,      145,      145,      80,      160} /* GC,CG,A,G,E */
02706      , {      90,      55,      20,      25,      90} /* GC,CG,A,G,A */
02707      , {      155,      125,      125,      60,      140} /* GC,CG,A,G,C */
02708      , {      80,      50,      45,      45,      60} /* GC,CG,A,G,G */
02709      , {      175,      145,      145,      80,      160} /* GC,CG,A,G,U/T */
02710      }
02711      ,{{{      195,      165,      165,      155,      180} /* GC,CG,A,U/T,E */
02712      , {      195,      165,      165,      100,      180} /* GC,CG,A,U/T,A */
02713      , {      165,      135,      135,      100,      150} /* GC,CG,A,U/T,C */
02714      , {      190,      160,      160,      95,      175} /* GC,CG,A,U/T,G */
02715      , {      155,      125,      85,      130,      95} /* GC,CG,A,U/T,U/T */
02716      }
02717      }
02718      ,{{{      190,      180,      190,      155,      185} /* GC,CG,C,E,E */
02719      , {      180,      170,      180,      145,      175} /* GC,CG,C,E,A */
02720      , {      170,      155,      165,      130,      165} /* GC,CG,C,E,C */
02721      , {      175,      165,      175,      140,      170} /* GC,CG,C,E,G */
02722      , {      175,      165,      175,      140,      170} /* GC,CG,C,E,U/T */
02723      }
02724      ,{{{      170,      160,      170,      135,      165} /* GC,CG,C,A,E */
02725      , {      130,      120,      130,      95,      125} /* GC,CG,C,A,A */
02726      , {      145,      130,      140,      105,      140} /* GC,CG,C,A,C */
02727      , {      120,      50,      115,      50,      115} /* GC,CG,C,A,G */
02728      , {      170,      155,      165,      130,      165} /* GC,CG,C,A,U/T */
02729      }
02730      ,{{{      175,      165,      175,      140,      170} /* GC,CG,C,C,E */
02731      , {      165,      155,      165,      130,      160} /* GC,CG,C,C,A */
02732      , {      170,      155,      165,      130,      165} /* GC,CG,C,C,C */
02733      , {      145,      135,      145,      110,      140} /* GC,CG,C,C,G */
02734      , {      150,      140,      150,      115,      145} /* GC,CG,C,C,U/T */
02735      }
02736      ,{{{      160,      145,      155,      120,      155} /* GC,CG,C,G,E */
02737      , {      120,      35,      50,      50,      115} /* GC,CG,C,G,A */
02738      , {      140,      125,      135,      100,      135} /* GC,CG,C,G,C */
02739      , {      60,      50,      60,      25,      50} /* GC,CG,C,G,G */
02740      , {      160,      145,      155,      120,      155} /* GC,CG,C,G,U/T */
02741      }
02742      ,{{{      180,      170,      180,      145,      175} /* GC,CG,C,U/T,E */
02743      , {      180,      170,      180,      145,      175} /* GC,CG,C,U/T,A */
02744      , {      150,      140,      150,      115,      145} /* GC,CG,C,U/T,C */
02745      , {      175,      165,      175,      140,      170} /* GC,CG,C,U/T,G */
02746      , {      95,      85,      95,      60,      90} /* GC,CG,C,U/T,U/T */
02747      }
02748      }
02749      ,{{{      200,      130,      175,      135,      200} /* GC,CG,G,E,E */
02750      , {      190,      90,      165,      90,      190} /* GC,CG,G,E,A */
02751      , {      180,      115,      155,      90,      180} /* GC,CG,G,E,C */
02752      , {      185,      65,      160,      120,      185} /* GC,CG,G,E,G */
02753      , {      185,      120,      160,      130,      185} /* GC,CG,G,E,U/T */
02754      }
02755      ,{{{      180,      80,      155,      80,      180} /* GC,CG,G,A,E */
02756      , {      140,      40,      115,      40,      140} /* GC,CG,G,A,A */
02757      , {      155,      35,      130,      50,      155} /* GC,CG,G,A,C */
02758      , {      100,      -25,      75,      45,      100} /* GC,CG,G,A,G */
02759      , {      180,      60,      155,      75,      180} /* GC,CG,G,A,U/T */
02760      }
02761      ,{{{      185,      115,      160,      85,      185} /* GC,CG,G,C,E */
02762      , {      175,      75,      150,      55,      175} /* GC,CG,G,C,A */
02763      , {      180,      115,      155,      75,      180} /* GC,CG,G,C,C */
02764      , {      155,      35,      130,      55,      155} /* GC,CG,G,C,G */
02765      , {      160,      70,      135,      40,      160} /* GC,CG,G,C,U/T */
02766      }
02767      ,{{{      170,      50,      145,      125,      170} /* GC,CG,G,G,E */
02768      , {      100,      -20,      75,      60,      100} /* GC,CG,G,G,A */
02769      , {      150,      30,      125,      45,      150} /* GC,CG,G,G,C */
02770      , {      135,      15,      45,      100,      70} /* GC,CG,G,G,G */

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02771      , { 170, 50, 145, 65, 170} /* GC,CG,G,G,U/T */
02772      }
02773      , {{ 190, 110, 165, 120, 190} /* GC,CG,G,U/T,E */
02774      , { 190, 70, 165, 90, 190} /* GC,CG,G,U/T,A */
02775      , { 160, 70, 135, 80, 160} /* GC,CG,G,U/T,C */
02776      , { 185, 65, 160, 85, 185} /* GC,CG,G,U/T,G */
02777      , { 130, 85, 80, 95, 105} /* GC,CG,G,U/T,U/T */
02778      }
02779      }
02780      , {{{ 210, 200, 195, 200, 175} /* GC,CG,U/T,E,E */
02781      , { 190, 190, 175, 190, 165} /* GC,CG,U/T,E,A */
02782      , { 195, 175, 180, 175, 100} /* GC,CG,U/T,E,C */
02783      , { 185, 185, 170, 185, 155} /* GC,CG,U/T,E,G */
02784      , { 185, 185, 170, 185, 120} /* GC,CG,U/T,E,U/T */
02785      }
02786      , {{ 200, 180, 165, 180, 175} /* GC,CG,U/T,A,E */
02787      , { 160, 140, 125, 140, 135} /* GC,CG,U/T,A,A */
02788      , { 150, 150, 135, 150, 65} /* GC,CG,U/T,A,C */
02789      , { 135, 95, 110, 95, 110} /* GC,CG,U/T,A,G */
02790      , { 175, 175, 160, 175, 115} /* GC,CG,U/T,A,U/T */
02791      }
02792      , {{ 185, 185, 170, 185, 120} /* GC,CG,U/T,C,E */
02793      , { 175, 175, 160, 175, 75} /* GC,CG,U/T,C,A */
02794      , { 175, 175, 160, 175, 80} /* GC,CG,U/T,C,C */
02795      , { 155, 155, 140, 155, 90} /* GC,CG,U/T,C,G */
02796      , { 160, 160, 145, 160, 95} /* GC,CG,U/T,C,U/T */
02797      }
02798      , {{ 185, 165, 150, 165, 160} /* GC,CG,U/T,G,E */
02799      , { 135, 95, 110, 95, 110} /* GC,CG,U/T,G,A */
02800      , { 145, 145, 130, 145, 85} /* GC,CG,U/T,G,C */
02801      , { 160, 70, 85, 70, 135} /* GC,CG,U/T,G,G */
02802      , { 165, 165, 150, 165, 105} /* GC,CG,U/T,G,U/T */
02803      }
02804      , {{ 200, 190, 185, 190, 125} /* GC,CG,U/T,U/T,E */
02805      , { 190, 190, 175, 190, 125} /* GC,CG,U/T,U/T,A */
02806      , { 185, 160, 170, 160, 85} /* GC,CG,U/T,U/T,C */
02807      , { 185, 185, 170, 185, 120} /* GC,CG,U/T,U/T,G */
02808      , { 105, 105, 90, 105, 35} /* GC,CG,U/T,U/T,U/T */
02809      }
02810      }
02811      }
02812      , {{{ 200, 195, 170, 180, 190} /* GC,GC,E,E,E */
02813      , { 190, 185, 160, 170, 180} /* GC,GC,E,E,A */
02814      , { 175, 170, 145, 155, 165} /* GC,GC,E,E,C */
02815      , { 185, 180, 155, 165, 175} /* GC,GC,E,E,G */
02816      , { 180, 175, 155, 165, 170} /* GC,GC,E,E,U/T */
02817      }
02818      , {{ 195, 190, 165, 175, 185} /* GC,GC,E,A,E */
02819      , { 160, 155, 130, 140, 150} /* GC,GC,E,A,A */
02820      , { 160, 155, 135, 145, 150} /* GC,GC,E,A,C */
02821      , { 85, 60, 65, 45, 85} /* GC,GC,E,A,G */
02822      , { 180, 175, 155, 165, 170} /* GC,GC,E,A,U/T */
02823      }
02824      , {{ 170, 165, 145, 155, 160} /* GC,GC,E,C,E */
02825      , { 160, 155, 130, 140, 150} /* GC,GC,E,C,A */
02826      , { 170, 165, 145, 155, 160} /* GC,GC,E,C,C */
02827      , { 160, 155, 130, 140, 150} /* GC,GC,E,C,G */
02828      , { 165, 160, 140, 150, 155} /* GC,GC,E,C,U/T */
02829      }
02830      , {{ 180, 175, 155, 165, 170} /* GC,GC,E,G,E */
02831      , { 115, 90, 100, 80, 115} /* GC,GC,E,G,A */
02832      , { 135, 130, 110, 120, 125} /* GC,GC,E,G,C */
02833      , { 130, 75, 55, 125, 95} /* GC,GC,E,G,G */
02834      , { 180, 175, 155, 165, 170} /* GC,GC,E,G,U/T */
02835      }
02836      , {{ 190, 185, 160, 170, 180} /* GC,GC,E,U/T,E */
02837      , { 175, 170, 145, 155, 165} /* GC,GC,E,U/T,A */
02838      , { 170, 165, 140, 150, 160} /* GC,GC,E,U/T,C */
02839      , { 185, 180, 155, 165, 175} /* GC,GC,E,U/T,G */
02840      , { 150, 145, 90, 100, 110} /* GC,GC,E,U/T,U/T */
02841      }
02842      }
02843      , {{{ 190, 160, 160, 115, 175} /* GC,GC,A,E,E */
02844      , { 180, 150, 150, 85, 165} /* GC,GC,A,E,A */
02845      , { 165, 135, 135, 100, 150} /* GC,GC,A,E,C */
02846      , { 175, 145, 145, 80, 160} /* GC,GC,A,E,G */
02847      , { 170, 140, 140, 110, 155} /* GC,GC,A,E,U/T */
02848      }
02849      , {{ 185, 155, 155, 90, 170} /* GC,GC,A,A,E */
02850      , { 150, 120, 120, 55, 135} /* GC,GC,A,A,A */
02851      , { 150, 120, 120, 60, 135} /* GC,GC,A,A,C */
02852      , { 55, 25, 25, -40, 40} /* GC,GC,A,A,G */
02853      , { 170, 140, 140, 80, 155} /* GC,GC,A,A,U/T */
02854      }
02855      , {{ 160, 130, 130, 100, 145} /* GC,GC,A,C,E */
02856      , { 150, 120, 120, 55, 135} /* GC,GC,A,C,A */
02857      , { 160, 130, 130, 100, 145} /* GC,GC,A,C,C */

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02858      , {      150,      120,      120,      55,      135} /* GC,GC,A,C,G */
02859      , {      155,      125,      125,      95,      140} /* GC,GC,A,C,U/T */
02860      }
02861      , {{      170,      140,      140,      80,      155} /* GC,GC,A,G,E */
02862      , {      85,      55,      55,      -10,      70} /* GC,GC,A,G,A */
02863      , {      125,      95,      95,      35,      110} /* GC,GC,A,G,C */
02864      , {      70,      40,      40,      45,      55} /* GC,GC,A,G,G */
02865      , {      170,      140,      140,      80,      155} /* GC,GC,A,G,U/T */
02866      }
02867      , {{      180,      150,      150,      115,      165} /* GC,GC,A,U/T,E */
02868      , {      165,      135,      135,      70,      150} /* GC,GC,A,U/T,A */
02869      , {      160,      130,      130,      95,      145} /* GC,GC,A,U/T,C */
02870      , {      175,      145,      145,      80,      160} /* GC,GC,A,U/T,G */
02871      , {      140,      110,      80,      15,      95} /* GC,GC,A,U/T,U/T */
02872      }
02873      }
02874      , {{{      175,      160,      170,      135,      170} /* GC,GC,C,E,E */
02875      , {      165,      150,      160,      125,      160} /* GC,GC,C,E,A */
02876      , {      150,      135,      145,      110,      145} /* GC,GC,C,E,C */
02877      , {      160,      145,      155,      120,      155} /* GC,GC,C,E,G */
02878      , {      155,      145,      155,      120,      150} /* GC,GC,C,E,U/T */
02879      }
02880      , {{      170,      155,      165,      130,      165} /* GC,GC,C,A,E */
02881      , {      135,      120,      130,      95,      130} /* GC,GC,C,A,A */
02882      , {      135,      125,      135,      100,      130} /* GC,GC,C,A,C */
02883      , {      70,      25,      65,      0,      65} /* GC,GC,C,A,G */
02884      , {      155,      145,      155,      120,      150} /* GC,GC,C,A,U/T */
02885      }
02886      , {{{      145,      135,      145,      110,      140} /* GC,GC,C,C,E */
02887      , {      135,      120,      130,      95,      130} /* GC,GC,C,C,A */
02888      , {      145,      135,      145,      110,      140} /* GC,GC,C,C,C */
02889      , {      135,      120,      130,      95,      130} /* GC,GC,C,C,G */
02890      , {      140,      130,      140,      105,      135} /* GC,GC,C,C,U/T */
02891      }
02892      , {{{      155,      145,      155,      120,      150} /* GC,GC,C,G,E */
02893      , {      100,      60,      100,      35,      95} /* GC,GC,C,G,A */
02894      , {      110,      100,      110,      75,      105} /* GC,GC,C,G,C */
02895      , {      55,      45,      55,      20,      50} /* GC,GC,C,G,G */
02896      , {      155,      145,      155,      120,      150} /* GC,GC,C,G,U/T */
02897      }
02898      , {{{      165,      150,      160,      125,      160} /* GC,GC,C,U/T,E */
02899      , {      150,      135,      145,      110,      145} /* GC,GC,C,U/T,A */
02900      , {      145,      130,      140,      105,      140} /* GC,GC,C,U/T,C */
02901      , {      160,      145,      155,      120,      155} /* GC,GC,C,U/T,G */
02902      , {      95,      80,      90,      55,      90} /* GC,GC,C,U/T,U/T */
02903      }
02904      }
02905      , {{{      185,      85,      160,      130,      185} /* GC,GC,G,E,E */
02906      , {      175,      55,      150,      70,      175} /* GC,GC,G,E,A */
02907      , {      160,      70,      135,      55,      160} /* GC,GC,G,E,C */
02908      , {      170,      50,      145,      130,      170} /* GC,GC,G,E,G */
02909      , {      165,      75,      140,      90,      165} /* GC,GC,G,E,U/T */
02910      }
02911      , {{{      180,      60,      155,      75,      180} /* GC,GC,G,A,E */
02912      , {      145,      25,      120,      40,      145} /* GC,GC,G,A,A */
02913      , {      145,      25,      120,      45,      145} /* GC,GC,G,A,C */
02914      , {      50,      -75,      25,      10,      50} /* GC,GC,G,A,G */
02915      , {      165,      45,      140,      65,      165} /* GC,GC,G,A,U/T */
02916      }
02917      , {{{      155,      65,      130,      55,      155} /* GC,GC,G,C,E */
02918      , {      145,      25,      120,      40,      145} /* GC,GC,G,C,A */
02919      , {      155,      65,      130,      55,      155} /* GC,GC,G,C,C */
02920      , {      145,      25,      120,      40,      145} /* GC,GC,G,C,G */
02921      , {      150,      60,      125,      50,      150} /* GC,GC,G,C,U/T */
02922      }
02923      , {{{      165,      45,      140,      125,      165} /* GC,GC,G,G,E */
02924      , {      80,      -40,      55,      45,      80} /* GC,GC,G,G,A */
02925      , {      120,      0,      95,      20,      120} /* GC,GC,G,G,C */
02926      , {      130,      10,      40,      95,      65} /* GC,GC,G,G,G */
02927      , {      165,      45,      140,      65,      165} /* GC,GC,G,G,U/T */
02928      }
02929      , {{{      175,      85,      150,      95,      175} /* GC,GC,G,U/T,E */
02930      , {      160,      40,      135,      55,      160} /* GC,GC,G,U/T,A */
02931      , {      155,      65,      130,      50,      155} /* GC,GC,G,U/T,C */
02932      , {      170,      50,      145,      65,      170} /* GC,GC,G,U/T,G */
02933      , {      105,      -15,      80,      65,      105} /* GC,GC,G,U/T,U/T */
02934      }
02935      }
02936      , {{{      180,      180,      165,      180,      150} /* GC,GC,U/T,E,E */
02937      , {      170,      170,      155,      170,      140} /* GC,GC,U/T,E,A */
02938      , {      155,      155,      140,      155,      95} /* GC,GC,U/T,E,C */
02939      , {      165,      165,      150,      165,      105} /* GC,GC,U/T,E,G */
02940      , {      165,      165,      150,      165,      100} /* GC,GC,U/T,E,U/T */
02941      }
02942      , {{{      175,      175,      160,      175,      145} /* GC,GC,U/T,A,E */
02943      , {      140,      140,      125,      140,      110} /* GC,GC,U/T,A,A */
02944      , {      145,      145,      130,      145,      80} /* GC,GC,U/T,A,C */

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02945      , {      75,      45,      60,      45,      -15} /* GC,GC,U/T,A,G */
02946      , {     165,     165,     150,     165,     100} /* GC,GC,U/T,A,U/T */
02947      }
02948      , {{      155,     155,     140,     155,      90} /* GC,GC,U/T,C,E */
02949      , {      140,     140,     125,     140,      80} /* GC,GC,U/T,C,A */
02950      , {      155,     155,     140,     155,      90} /* GC,GC,U/T,C,C */
02951      , {      140,     140,     125,     140,      80} /* GC,GC,U/T,C,G */
02952      , {      150,     150,     135,     150,      85} /* GC,GC,U/T,C,U/T */
02953      }
02954      , {{      165,     165,     150,     165,     100} /* GC,GC,U/T,G,E */
02955      , {      110,      80,      95,      80,      15} /* GC,GC,U/T,G,A */
02956      , {      120,     120,     105,     120,      55} /* GC,GC,U/T,G,C */
02957      , {      90,      65,      50,      65,      65} /* GC,GC,U/T,G,G */
02958      , {      165,     165,     150,     165,     100} /* GC,GC,U/T,G,U/T */
02959      }
02960      , {{      170,     170,     155,     170,     110} /* GC,GC,U/T,U/T,E */
02961      , {      155,     155,     140,     155,      95} /* GC,GC,U/T,U/T,A */
02962      , {      150,     150,     135,     150,      90} /* GC,GC,U/T,U/T,C */
02963      , {      165,     165,     150,     165,     105} /* GC,GC,U/T,U/T,G */
02964      , {      100,     100,      85,     100,      40} /* GC,GC,U/T,U/T,U/T */
02965      }
02966      }
02967      }
02968      , {{{      290,     285,     250,     260,     270} /* GC,GT,E,E,E */
02969      , {      270,     265,     240,     250,     260} /* GC,GT,E,E,A */
02970      , {      250,     245,     225,     235,     240} /* GC,GT,E,E,C */
02971      , {      260,     255,     235,     245,     250} /* GC,GT,E,E,G */
02972      , {      290,     285,     235,     245,     250} /* GC,GT,E,E,U/T */
02973      }
02974      , {{      280,     275,     250,     260,     270} /* GC,GT,E,A,E */
02975      , {      255,     250,     225,     235,     245} /* GC,GT,E,A,A */
02976      , {      250,     245,     225,     235,     240} /* GC,GT,E,A,C */
02977      , {      215,     190,     200,     180,     215} /* GC,GT,E,A,G */
02978      , {      260,     255,     235,     245,     250} /* GC,GT,E,A,U/T */
02979      }
02980      , {{      250,     245,     225,     235,     240} /* GC,GT,E,C,E */
02981      , {      250,     245,     225,     235,     240} /* GC,GT,E,C,A */
02982      , {      250,     245,     225,     235,     240} /* GC,GT,E,C,C */
02983      , {      240,     235,     215,     225,     230} /* GC,GT,E,C,G */
02984      , {      250,     245,     225,     235,     240} /* GC,GT,E,C,U/T */
02985      }
02986      , {{      260,     255,     245,     245,     260} /* GC,GT,E,G,E */
02987      , {      235,     210,     220,     200,     235} /* GC,GT,E,G,A */
02988      , {      240,     235,     215,     225,     230} /* GC,GT,E,G,C */
02989      , {      220,     165,     145,     215,     185} /* GC,GT,E,G,G */
02990      , {      260,     255,     235,     245,     250} /* GC,GT,E,G,U/T */
02991      }
02992      , {{{      290,     285,     235,     245,     250} /* GC,GT,E,U/T,E */
02993      , {      250,     245,     225,     235,     240} /* GC,GT,E,U/T,A */
02994      , {      250,     245,     225,     235,     240} /* GC,GT,E,U/T,C */
02995      , {      260,     255,     235,     245,     250} /* GC,GT,E,U/T,G */
02996      , {      280,     275,     225,     235,     240} /* GC,GT,E,U/T,U/T */
02997      }
02998      }
02999      , {{{      280,     250,     240,     185,     255} /* GC,GT,A,E,E */
03000      , {      260,     230,     230,     165,     245} /* GC,GT,A,E,A */
03001      , {      240,     210,     210,     175,     225} /* GC,GT,A,E,C */
03002      , {      250,     220,     220,     155,     235} /* GC,GT,A,E,G */
03003      , {      280,     250,     220,     185,     235} /* GC,GT,A,E,U/T */
03004      }
03005      , {{      270,     240,     240,     175,     255} /* GC,GT,A,A,E */
03006      , {      245,     215,     215,     150,     230} /* GC,GT,A,A,A */
03007      , {      240,     210,     210,     145,     225} /* GC,GT,A,A,C */
03008      , {      185,     155,     155,      90,     170} /* GC,GT,A,A,G */
03009      , {      250,     220,     220,     155,     235} /* GC,GT,A,A,U/T */
03010      }
03011      , {{      240,     210,     210,     175,     225} /* GC,GT,A,C,E */
03012      , {      240,     210,     210,     145,     225} /* GC,GT,A,C,A */
03013      , {      240,     210,     210,     175,     225} /* GC,GT,A,C,C */
03014      , {      230,     200,     200,     135,     215} /* GC,GT,A,C,G */
03015      , {      240,     210,     210,     175,     225} /* GC,GT,A,C,U/T */
03016      }
03017      , {{      250,     220,     220,     155,     235} /* GC,GT,A,G,E */
03018      , {      205,     175,     175,     110,     190} /* GC,GT,A,G,A */
03019      , {      230,     200,     200,     135,     215} /* GC,GT,A,G,C */
03020      , {      160,     130,     130,     130,     145} /* GC,GT,A,G,G */
03021      , {      250,     220,     220,     155,     235} /* GC,GT,A,G,U/T */
03022      }
03023      , {{{      280,     250,     220,     185,     235} /* GC,GT,A,U/T,E */
03024      , {      240,     210,     210,     145,     225} /* GC,GT,A,U/T,A */
03025      , {      240,     210,     210,     175,     225} /* GC,GT,A,U/T,C */
03026      , {      250,     220,     220,     155,     235} /* GC,GT,A,U/T,G */
03027      , {      270,     240,     210,     145,     225} /* GC,GT,A,U/T,U/T */
03028      }
03029      }
03030      , {{{      255,     240,     250,     215,     250} /* GC,GT,C,E,E */
03031      , {      245,     230,     240,     205,     240} /* GC,GT,C,E,A */

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03032      , {      225,      215,      225,      190,      220} /* GC,GT,C,E,C */
03033      , {      235,      225,      235,      200,      230} /* GC,GT,C,E,G */
03034      , {      235,      225,      235,      200,      230} /* GC,GT,C,E,U/T */
03035      }
03036      , {{      255,      240,      250,      215,      250} /* GC,GT,C,A,E */
03037      , {      230,      215,      225,      190,      225} /* GC,GT,C,A,A */
03038      , {      225,      215,      225,      190,      220} /* GC,GT,C,A,C */
03039      , {      200,      160,      200,      135,      195} /* GC,GT,C,A,G */
03040      , {      235,      225,      235,      200,      230} /* GC,GT,C,A,U/T */
03041      }
03042      , {{      225,      215,      225,      190,      220} /* GC,GT,C,C,E */
03043      , {      225,      215,      225,      190,      220} /* GC,GT,C,C,A */
03044      , {      225,      215,      225,      190,      220} /* GC,GT,C,C,C */
03045      , {      215,      205,      215,      180,      210} /* GC,GT,C,C,G */
03046      , {      225,      215,      225,      190,      220} /* GC,GT,C,C,U/T */
03047      }
03048      , {{      245,      225,      245,      200,      240} /* GC,GT,C,G,E */
03049      , {      220,      180,      220,      155,      215} /* GC,GT,C,G,A */
03050      , {      215,      205,      215,      180,      210} /* GC,GT,C,G,C */
03051      , {      145,      135,      145,      110,      140} /* GC,GT,C,G,G */
03052      , {      235,      225,      235,      200,      230} /* GC,GT,C,G,U/T */
03053      }
03054      , {{      235,      225,      235,      200,      230} /* GC,GT,C,U/T,E */
03055      , {      225,      215,      225,      190,      220} /* GC,GT,C,U/T,A */
03056      , {      225,      215,      225,      190,      220} /* GC,GT,C,U/T,C */
03057      , {      235,      225,      235,      200,      230} /* GC,GT,C,U/T,G */
03058      , {      225,      215,      225,      190,      220} /* GC,GT,C,U/T,U/T */
03059      }
03060      }
03061      , {{{      265,      155,      240,      210,      265} /* GC,GT,G,E,E */
03062      , {      255,      130,      230,      180,      255} /* GC,GT,G,E,A */
03063      , {      235,      145,      210,      135,      235} /* GC,GT,G,E,C */
03064      , {      245,      125,      220,      210,      245} /* GC,GT,G,E,G */
03065      , {      245,      155,      220,      210,      245} /* GC,GT,G,E,U/T */
03066      }
03067      , {{      265,      140,      240,      170,      265} /* GC,GT,G,A,E */
03068      , {      240,      115,      215,      135,      240} /* GC,GT,G,A,A */
03069      , {      235,      115,      210,      135,      235} /* GC,GT,G,A,C */
03070      , {      180,      60,      155,      145,      180} /* GC,GT,G,A,G */
03071      , {      245,      125,      220,      145,      245} /* GC,GT,G,A,U/T */
03072      }
03073      , {{      235,      145,      210,      135,      235} /* GC,GT,G,C,E */
03074      , {      235,      115,      210,      135,      235} /* GC,GT,G,C,A */
03075      , {      235,      145,      210,      135,      235} /* GC,GT,G,C,C */
03076      , {      225,      105,      200,      125,      225} /* GC,GT,G,C,G */
03077      , {      235,      145,      210,      135,      235} /* GC,GT,G,C,U/T */
03078      }
03079      , {{      245,      125,      220,      210,      245} /* GC,GT,G,G,E */
03080      , {      200,      80,      175,      165,      200} /* GC,GT,G,G,A */
03081      , {      225,      105,      200,      125,      225} /* GC,GT,G,G,C */
03082      , {      220,      100,      130,      185,      155} /* GC,GT,G,G,G */
03083      , {      245,      125,      220,      145,      245} /* GC,GT,G,G,U/T */
03084      }
03085      , {{      245,      155,      220,      210,      245} /* GC,GT,G,U/T,E */
03086      , {      235,      115,      210,      135,      235} /* GC,GT,G,U/T,A */
03087      , {      235,      145,      210,      135,      235} /* GC,GT,G,U/T,C */
03088      , {      245,      125,      220,      145,      245} /* GC,GT,G,U/T,G */
03089      , {      235,      115,      210,      200,      235} /* GC,GT,G,U/T,U/T */
03090      }
03091      }
03092      , {{{      260,      260,      245,      260,      230} /* GC,GT,U/T,E,E */
03093      , {      250,      250,      235,      250,      220} /* GC,GT,U/T,E,A */
03094      , {      235,      235,      220,      235,      170} /* GC,GT,U/T,E,C */
03095      , {      245,      245,      230,      245,      180} /* GC,GT,U/T,E,G */
03096      , {      245,      245,      230,      245,      180} /* GC,GT,U/T,E,U/T */
03097      }
03098      , {{      260,      260,      245,      260,      230} /* GC,GT,U/T,A,E */
03099      , {      235,      235,      220,      235,      205} /* GC,GT,U/T,A,A */
03100      , {      235,      235,      220,      235,      170} /* GC,GT,U/T,A,C */
03101      , {      210,      180,      195,      180,      115} /* GC,GT,U/T,A,G */
03102      , {      245,      245,      230,      245,      180} /* GC,GT,U/T,A,U/T */
03103      }
03104      , {{      235,      235,      220,      235,      170} /* GC,GT,U/T,C,E */
03105      , {      235,      235,      220,      235,      170} /* GC,GT,U/T,C,A */
03106      , {      235,      235,      220,      235,      170} /* GC,GT,U/T,C,C */
03107      , {      225,      225,      210,      225,      160} /* GC,GT,U/T,C,G */
03108      , {      235,      235,      220,      235,      170} /* GC,GT,U/T,C,U/T */
03109      }
03110      , {{      255,      245,      240,      245,      180} /* GC,GT,U/T,G,E */
03111      , {      230,      200,      215,      200,      135} /* GC,GT,U/T,G,A */
03112      , {      225,      225,      210,      225,      160} /* GC,GT,U/T,G,C */
03113      , {      180,      155,      140,      155,      155} /* GC,GT,U/T,G,G */
03114      , {      245,      245,      230,      245,      180} /* GC,GT,U/T,G,U/T */
03115      }
03116      , {{      245,      245,      230,      245,      180} /* GC,GT,U/T,U/T,E */
03117      , {      235,      235,      220,      235,      170} /* GC,GT,U/T,U/T,A */
03118      , {      235,      235,      220,      235,      170} /* GC,GT,U/T,U/T,C */

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03119      , { 245, 245, 230, 245, 180} /* GC,GT,U/T,U/T,G */
03120      , { 235, 235, 220, 235, 170} /* GC,GT,U/T,U/T,U/T */
03121      }
03122    }
03123  }
03124  ,{{{ 280, 270, 265, 245, 280} /* GC,UG,E,E,E */
03125      , { 280, 255, 265, 245, 280} /* GC,UG,E,E,A */
03126      , { 235, 230, 210, 220, 225} /* GC,UG,E,E,C */
03127      , { 245, 240, 220, 230, 235} /* GC,UG,E,E,G */
03128      , { 275, 270, 220, 230, 235} /* GC,UG,E,E,U/T */
03129    }
03130  , { { 245, 240, 220, 230, 235} /* GC,UG,E,A,E */
03131      , { 210, 205, 175, 185, 195} /* GC,UG,E,A,A */
03132      , { 235, 230, 210, 220, 225} /* GC,UG,E,A,C */
03133      , { 175, 150, 155, 135, 175} /* GC,UG,E,A,G */
03134      , { 245, 240, 220, 230, 235} /* GC,UG,E,A,U/T */
03135    }
03136  , { { 235, 230, 210, 220, 225} /* GC,UG,E,C,E */
03137      , { 235, 230, 210, 220, 225} /* GC,UG,E,C,A */
03138      , { 235, 230, 210, 220, 225} /* GC,UG,E,C,C */
03139      , { 220, 215, 195, 205, 210} /* GC,UG,E,C,G */
03140      , { 235, 230, 210, 220, 225} /* GC,UG,E,C,U/T */
03141    }
03142  , { { 280, 255, 265, 245, 280} /* GC,UG,E,G,E */
03143      , { 255, 230, 240, 220, 255} /* GC,UG,E,G,A */
03144      , { 230, 225, 205, 215, 220} /* GC,UG,E,G,C */
03145      , { 205, 150, 130, 200, 170} /* GC,UG,E,G,G */
03146      , { 245, 240, 220, 230, 235} /* GC,UG,E,G,U/T */
03147    }
03148  , { { 275, 270, 220, 230, 235} /* GC,UG,E,U/T,E */
03149      , { 245, 240, 220, 230, 235} /* GC,UG,E,U/T,A */
03150      , { 235, 230, 210, 220, 225} /* GC,UG,E,U/T,C */
03151      , { 245, 240, 220, 230, 235} /* GC,UG,E,U/T,G */
03152      , { 265, 260, 210, 220, 225} /* GC,UG,E,U/T,U/T */
03153    }
03154  }
03155  , {{{ 265, 235, 220, 170, 235} /* GC,UG,A,E,E */
03156      , { 250, 220, 220, 155, 235} /* GC,UG,A,E,A */
03157      , { 225, 195, 195, 160, 210} /* GC,UG,A,E,C */
03158      , { 235, 205, 205, 140, 220} /* GC,UG,A,E,G */
03159      , { 265, 235, 205, 170, 220} /* GC,UG,A,E,U/T */
03160    }
03161  , { { 235, 205, 205, 140, 220} /* GC,UG,A,A,E */
03162      , { 200, 170, 165, 100, 180} /* GC,UG,A,A,A */
03163      , { 225, 195, 195, 130, 210} /* GC,UG,A,A,C */
03164      , { 145, 115, 115, 50, 130} /* GC,UG,A,A,G */
03165      , { 235, 205, 205, 140, 220} /* GC,UG,A,A,U/T */
03166    }
03167  , { { 225, 195, 195, 160, 210} /* GC,UG,A,C,E */
03168      , { 225, 195, 195, 130, 210} /* GC,UG,A,C,A */
03169      , { 225, 195, 195, 160, 210} /* GC,UG,A,C,C */
03170      , { 210, 180, 180, 115, 195} /* GC,UG,A,C,G */
03171      , { 225, 195, 195, 160, 210} /* GC,UG,A,C,U/T */
03172    }
03173  , { { 250, 220, 220, 155, 235} /* GC,UG,A,G,E */
03174      , { 225, 195, 195, 130, 210} /* GC,UG,A,G,A */
03175      , { 220, 190, 190, 125, 205} /* GC,UG,A,G,C */
03176      , { 145, 115, 115, 115, 130} /* GC,UG,A,G,G */
03177      , { 235, 205, 205, 140, 220} /* GC,UG,A,G,U/T */
03178    }
03179  , { { 265, 235, 205, 170, 220} /* GC,UG,A,U/T,E */
03180      , { 235, 205, 205, 140, 220} /* GC,UG,A,U/T,A */
03181      , { 225, 195, 195, 160, 210} /* GC,UG,A,U/T,C */
03182      , { 235, 205, 205, 140, 220} /* GC,UG,A,U/T,G */
03183      , { 255, 225, 195, 130, 210} /* GC,UG,A,U/T,U/T */
03184    }
03185  }
03186  , {{{ 265, 225, 265, 200, 260} /* GC,UG,C,E,E */
03187      , { 265, 225, 265, 200, 260} /* GC,UG,C,E,A */
03188      , { 210, 200, 210, 175, 205} /* GC,UG,C,E,C */
03189      , { 220, 210, 220, 185, 215} /* GC,UG,C,E,G */
03190      , { 220, 210, 220, 185, 215} /* GC,UG,C,E,U/T */
03191    }
03192  , { { 220, 210, 220, 185, 215} /* GC,UG,C,A,E */
03193      , { 180, 165, 175, 140, 175} /* GC,UG,C,A,A */
03194      , { 210, 200, 210, 175, 205} /* GC,UG,C,A,C */
03195      , { 160, 115, 155, 90, 155} /* GC,UG,C,A,G */
03196      , { 220, 210, 220, 185, 215} /* GC,UG,C,A,U/T */
03197    }
03198  , { { 210, 200, 210, 175, 205} /* GC,UG,C,C,E */
03199      , { 210, 200, 210, 175, 205} /* GC,UG,C,C,A */
03200      , { 210, 200, 210, 175, 205} /* GC,UG,C,C,C */
03201      , { 195, 185, 195, 160, 190} /* GC,UG,C,C,G */
03202      , { 210, 200, 210, 175, 205} /* GC,UG,C,C,U/T */
03203    }
03204  , { { 265, 225, 265, 200, 260} /* GC,UG,C,G,E */
03205      , { 240, 200, 240, 175, 235} /* GC,UG,C,G,A */

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03206 , { 205, 195, 205, 170, 200} /* GC,UG,C,G,C */
03207 , { 130, 120, 130, 95, 125} /* GC,UG,C,G,G */
03208 , { 220, 210, 220, 185, 215} /* GC,UG,C,G,U/T */
03209 }
03210 , {{ 220, 210, 220, 185, 215} /* GC,UG,C,U/T,E */
03211 , { 220, 210, 220, 185, 215} /* GC,UG,C,U/T,A */
03212 , { 210, 200, 210, 175, 205} /* GC,UG,C,U/T,C */
03213 , { 220, 210, 220, 185, 215} /* GC,UG,C,U/T,G */
03214 , { 210, 200, 210, 175, 205} /* GC,UG,C,U/T,U/T */
03215 }
03216 }
03217 , {{{ 245, 140, 220, 210, 245} /* GC,UG,G,E,E */
03218 , { 245, 125, 220, 210, 245} /* GC,UG,G,E,A */
03219 , { 220, 130, 195, 120, 220} /* GC,UG,G,E,C */
03220 , { 230, 110, 205, 195, 230} /* GC,UG,G,E,G */
03221 , { 230, 140, 205, 195, 230} /* GC,UG,G,E,U/T */
03222 }
03223 , {{ 230, 110, 205, 130, 230} /* GC,UG,G,A,E */
03224 , { 190, 70, 165, 85, 190} /* GC,UG,G,A,A */
03225 , { 220, 100, 195, 120, 220} /* GC,UG,G,A,C */
03226 , { 140, 20, 115, 100, 140} /* GC,UG,G,A,G */
03227 , { 230, 110, 205, 130, 230} /* GC,UG,G,A,U/T */
03228 }
03229 , {{ 220, 130, 195, 120, 220} /* GC,UG,G,C,E */
03230 , { 220, 100, 195, 120, 220} /* GC,UG,G,C,A */
03231 , { 220, 130, 195, 120, 220} /* GC,UG,G,C,C */
03232 , { 205, 85, 180, 105, 205} /* GC,UG,G,C,G */
03233 , { 220, 130, 195, 120, 220} /* GC,UG,G,C,U/T */
03234 }
03235 , {{{ 245, 125, 220, 210, 245} /* GC,UG,G,G,E */
03236 , { 220, 100, 195, 185, 220} /* GC,UG,G,G,A */
03237 , { 215, 95, 190, 115, 215} /* GC,UG,G,G,C */
03238 , { 205, 85, 115, 170, 140} /* GC,UG,G,G,G */
03239 , { 230, 110, 205, 130, 230} /* GC,UG,G,G,U/T */
03240 }
03241 , {{{ 230, 140, 205, 195, 230} /* GC,UG,G,U/T,E */
03242 , { 230, 110, 205, 130, 230} /* GC,UG,G,U/T,A */
03243 , { 220, 130, 195, 120, 220} /* GC,UG,G,U/T,C */
03244 , { 230, 110, 205, 130, 230} /* GC,UG,G,U/T,G */
03245 , { 220, 100, 195, 185, 220} /* GC,UG,G,U/T,U/T */
03246 }
03247 }
03248 , {{{ 275, 245, 260, 245, 180} /* GC,UG,U/T,E,E */
03249 , { 275, 245, 260, 245, 180} /* GC,UG,U/T,E,A */
03250 , { 220, 220, 205, 220, 155} /* GC,UG,U/T,E,C */
03251 , { 230, 230, 215, 230, 165} /* GC,UG,U/T,E,G */
03252 , { 230, 230, 215, 230, 165} /* GC,UG,U/T,E,U/T */
03253 }
03254 , {{ 230, 230, 215, 230, 180} /* GC,UG,U/T,A,E */
03255 , { 185, 185, 170, 185, 155} /* GC,UG,U/T,A,A */
03256 , { 220, 220, 205, 220, 155} /* GC,UG,U/T,A,C */
03257 , { 165, 135, 150, 135, 75} /* GC,UG,U/T,A,G */
03258 , { 230, 230, 215, 230, 165} /* GC,UG,U/T,A,U/T */
03259 }
03260 , {{ 220, 220, 205, 220, 155} /* GC,UG,U/T,C,E */
03261 , { 220, 220, 205, 220, 155} /* GC,UG,U/T,C,A */
03262 , { 220, 220, 205, 220, 155} /* GC,UG,U/T,C,C */
03263 , { 205, 205, 190, 205, 140} /* GC,UG,U/T,C,G */
03264 , { 220, 220, 205, 220, 155} /* GC,UG,U/T,C,U/T */
03265 }
03266 , {{{ 275, 245, 260, 245, 180} /* GC,UG,U/T,G,E */
03267 , { 250, 220, 235, 220, 155} /* GC,UG,U/T,G,A */
03268 , { 215, 215, 200, 215, 150} /* GC,UG,U/T,G,C */
03269 , { 165, 140, 125, 140, 140} /* GC,UG,U/T,G,G */
03270 , { 230, 230, 215, 230, 165} /* GC,UG,U/T,G,U/T */
03271 }
03272 , {{{ 230, 230, 215, 230, 165} /* GC,UG,U/T,U/T,E */
03273 , { 230, 230, 215, 230, 165} /* GC,UG,U/T,U/T,A */
03274 , { 220, 220, 205, 220, 155} /* GC,UG,U/T,U/T,C */
03275 , { 230, 230, 215, 230, 165} /* GC,UG,U/T,U/T,G */
03276 , { 220, 220, 205, 220, 155} /* GC,UG,U/T,U/T,U/T */
03277 }
03278 }
03279 }
03280 , {{{ 245, 240, 220, 230, 240} /* GC,AT,E,E,E */
03281 , { 245, 240, 220, 230, 240} /* GC,AT,E,E,A */
03282 , { 220, 215, 195, 205, 210} /* GC,AT,E,E,C */
03283 , { 240, 235, 210, 220, 230} /* GC,AT,E,E,G */
03284 , { 235, 230, 210, 220, 225} /* GC,AT,E,E,U/T */
03285 }
03286 , {{{ 245, 240, 220, 230, 235} /* GC,AT,E,A,E */
03287 , { 210, 205, 185, 195, 200} /* GC,AT,E,A,A */
03288 , { 210, 205, 180, 190, 200} /* GC,AT,E,A,C */
03289 , { 175, 150, 155, 135, 175} /* GC,AT,E,A,G */
03290 , { 235, 230, 205, 215, 225} /* GC,AT,E,A,U/T */
03291 }
03292 , {{{ 230, 225, 200, 210, 220} /* GC,AT,E,C,E */
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03293      , {      215,      210,      185,      195,      205} /* GC,AT,E,C,A */
03294      , {      220,      215,      195,      205,      210} /* GC,AT,E,C,C */
03295      , {      230,      225,      200,      210,      220} /* GC,AT,E,C,G */
03296      , {      215,      210,      190,      200,      205} /* GC,AT,E,C,U/T */
03297      }
03298      , { {      240,      230,      220,      215,      240} /* GC,AT,E,G,E */
03299      , {      210,      185,      190,      170,      210} /* GC,AT,E,G,A */
03300      , {      215,      210,      185,      195,      205} /* GC,AT,E,G,C */
03301      , {      175,      125,      100,      170,      145} /* GC,AT,E,G,G */
03302      , {      235,      230,      205,      215,      225} /* GC,AT,E,G,U/T */
03303      }
03304      , { {      240,      235,      210,      220,      230} /* GC,AT,E,U/T,E */
03305      , {      240,      235,      210,      220,      230} /* GC,AT,E,U/T,A */
03306      , {      215,      210,      190,      200,      205} /* GC,AT,E,U/T,C */
03307      , {      240,      235,      210,      220,      230} /* GC,AT,E,U/T,G */
03308      , {      190,      185,      135,      145,      150} /* GC,AT,E,U/T,U/T */
03309      }
03310      }
03311      , { { {      235,      205,      205,      160,      220} /* GC,AT,A,E,E */
03312      , {      235,      205,      205,      140,      220} /* GC,AT,A,E,A */
03313      , {      210,      180,      180,      145,      195} /* GC,AT,A,E,C */
03314      , {      230,      200,      200,      135,      215} /* GC,AT,A,E,G */
03315      , {      225,      195,      195,      160,      210} /* GC,AT,A,E,U/T */
03316      }
03317      , { {      235,      205,      205,      140,      220} /* GC,AT,A,A,E */
03318      , {      200,      170,      170,      105,      185} /* GC,AT,A,A,A */
03319      , {      200,      170,      170,      105,      185} /* GC,AT,A,A,C */
03320      , {      145,      115,      115,      50,      130} /* GC,AT,A,A,G */
03321      , {      225,      195,      195,      130,      210} /* GC,AT,A,A,U/T */
03322      }
03323      , { {      220,      190,      190,      150,      205} /* GC,AT,A,C,E */
03324      , {      205,      175,      175,      110,      190} /* GC,AT,A,C,A */
03325      , {      210,      180,      180,      145,      195} /* GC,AT,A,C,C */
03326      , {      220,      190,      190,      125,      205} /* GC,AT,A,C,G */
03327      , {      205,      175,      175,      140,      190} /* GC,AT,A,C,U/T */
03328      }
03329      , { {      225,      195,      195,      130,      210} /* GC,AT,A,G,E */
03330      , {      180,      150,      150,      85,      165} /* GC,AT,A,G,A */
03331      , {      205,      175,      175,      110,      190} /* GC,AT,A,G,C */
03332      , {      120,      90,      90,      90,      105} /* GC,AT,A,G,G */
03333      , {      225,      195,      195,      130,      210} /* GC,AT,A,G,U/T */
03334      }
03335      , { {      230,      200,      200,      160,      215} /* GC,AT,A,U/T,E */
03336      , {      230,      200,      200,      135,      215} /* GC,AT,A,U/T,A */
03337      , {      205,      175,      175,      140,      190} /* GC,AT,A,U/T,C */
03338      , {      230,      200,      200,      135,      215} /* GC,AT,A,U/T,G */
03339      , {      180,      150,      120,      60,      135} /* GC,AT,A,U/T,U/T */
03340      }
03341      }
03342      , { { {      225,      210,      220,      185,      220} /* GC,AT,C,E,E */
03343      , {      225,      210,      220,      185,      220} /* GC,AT,C,E,A */
03344      , {      195,      185,      195,      160,      190} /* GC,AT,C,E,C */
03345      , {      215,      200,      210,      175,      210} /* GC,AT,C,E,G */
03346      , {      210,      200,      210,      175,      205} /* GC,AT,C,E,U/T */
03347      }
03348      , { {      220,      210,      220,      185,      215} /* GC,AT,C,A,E */
03349      , {      185,      175,      185,      150,      180} /* GC,AT,C,A,A */
03350      , {      185,      170,      180,      145,      180} /* GC,AT,C,A,C */
03351      , {      160,      115,      155,      90,      155} /* GC,AT,C,A,G */
03352      , {      210,      195,      205,      170,      205} /* GC,AT,C,A,U/T */
03353      }
03354      , { {      205,      190,      200,      165,      200} /* GC,AT,C,C,E */
03355      , {      190,      175,      185,      150,      185} /* GC,AT,C,C,A */
03356      , {      195,      185,      195,      160,      190} /* GC,AT,C,C,C */
03357      , {      205,      190,      200,      165,      200} /* GC,AT,C,C,G */
03358      , {      190,      180,      190,      155,      185} /* GC,AT,C,C,U/T */
03359      }
03360      , { {      225,      195,      220,      170,      220} /* GC,AT,C,G,E */
03361      , {      195,      150,      190,      125,      190} /* GC,AT,C,G,A */
03362      , {      190,      175,      185,      150,      185} /* GC,AT,C,G,C */
03363      , {      105,      90,      100,      65,      100} /* GC,AT,C,G,G */
03364      , {      210,      195,      205,      170,      205} /* GC,AT,C,G,U/T */
03365      }
03366      , { {      215,      200,      210,      175,      210} /* GC,AT,C,U/T,E */
03367      , {      215,      200,      210,      175,      210} /* GC,AT,C,U/T,A */
03368      , {      190,      180,      190,      155,      185} /* GC,AT,C,U/T,C */
03369      , {      215,      200,      210,      175,      210} /* GC,AT,C,U/T,G */
03370      , {      135,      125,      135,      100,      130} /* GC,AT,C,U/T,U/T */
03371      }
03372      }
03373      , { { {      230,      130,      205,      170,      230} /* GC,AT,G,E,E */
03374      , {      230,      110,      205,      165,      230} /* GC,AT,G,E,A */
03375      , {      205,      115,      180,      105,      205} /* GC,AT,G,E,C */
03376      , {      225,      105,      200,      170,      225} /* GC,AT,G,E,G */
03377      , {      220,      130,      195,      140,      220} /* GC,AT,G,E,U/T */
03378      }
03379      , { {      230,      110,      205,      130,      230} /* GC,AT,G,A,E */

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03380      , {      195,      75,      170,      95,      195} /* GC,AT,G,A,A */
03381      , {      195,      75,      170,      90,      195} /* GC,AT,G,A,C */
03382      , {      140,      20,      115,      100,      140} /* GC,AT,G,A,G */
03383      , {      220,      100,      195,      115,      220} /* GC,AT,G,A,U/T */
03384      }
03385      , { {      215,      120,      190,      110,      215} /* GC,AT,G,C,E */
03386      , {      200,      80,      175,      95,      200} /* GC,AT,G,C,A */
03387      , {      205,      115,      180,      105,      205} /* GC,AT,G,C,C */
03388      , {      215,      95,      190,      110,      215} /* GC,AT,G,C,G */
03389      , {      200,      110,      175,      100,      200} /* GC,AT,G,C,U/T */
03390      }
03391      , { {      220,      100,      195,      170,      220} /* GC,AT,G,G,E */
03392      , {      175,      55,      150,      135,      175} /* GC,AT,G,G,A */
03393      , {      200,      80,      175,      95,      200} /* GC,AT,G,G,C */
03394      , {      175,      60,      90,      140,      115} /* GC,AT,G,G,G */
03395      , {      220,      100,      195,      115,      220} /* GC,AT,G,G,U/T */
03396      }
03397      , { {      225,      130,      200,      140,      225} /* GC,AT,G,U/T,E */
03398      , {      225,      105,      200,      120,      225} /* GC,AT,G,U/T,A */
03399      , {      200,      110,      175,      100,      200} /* GC,AT,G,U/T,C */
03400      , {      225,      105,      200,      120,      225} /* GC,AT,G,U/T,G */
03401      , {      145,      25,      120,      110,      145} /* GC,AT,G,U/T,U/T */
03402      }
03403      }
03404      , { { {      230,      230,      215,      230,      195} /* GC,AT,U/T,E,E */
03405      , {      230,      230,      215,      230,      195} /* GC,AT,U/T,E,A */
03406      , {      205,      205,      190,      205,      140} /* GC,AT,U/T,E,C */
03407      , {      220,      220,      205,      220,      160} /* GC,AT,U/T,E,G */
03408      , {      220,      220,      205,      220,      155} /* GC,AT,U/T,E,U/T */
03409      }
03410      , { {      230,      230,      215,      230,      195} /* GC,AT,U/T,A,E */
03411      , {      195,      195,      180,      195,      160} /* GC,AT,U/T,A,A */
03412      , {      190,      190,      175,      190,      130} /* GC,AT,U/T,A,C */
03413      , {      165,      135,      150,      135,      75} /* GC,AT,U/T,A,G */
03414      , {      215,      215,      200,      215,      155} /* GC,AT,U/T,A,U/T */
03415      }
03416      , { {      210,      210,      195,      210,      150} /* GC,AT,U/T,C,E */
03417      , {      195,      195,      180,      195,      135} /* GC,AT,U/T,C,A */
03418      , {      205,      205,      190,      205,      140} /* GC,AT,U/T,C,C */
03419      , {      210,      210,      195,      210,      150} /* GC,AT,U/T,C,G */
03420      , {      200,      200,      185,      200,      135} /* GC,AT,U/T,C,U/T */
03421      }
03422      , { {      230,      215,      215,      215,      155} /* GC,AT,U/T,G,E */
03423      , {      200,      170,      185,      170,      110} /* GC,AT,U/T,G,A */
03424      , {      195,      195,      180,      195,      135} /* GC,AT,U/T,G,C */
03425      , {      140,      110,      95,      110,      115} /* GC,AT,U/T,G,G */
03426      , {      215,      215,      200,      215,      155} /* GC,AT,U/T,G,U/T */
03427      }
03428      , { {      220,      220,      205,      220,      160} /* GC,AT,U/T,U/T,E */
03429      , {      220,      220,      205,      220,      160} /* GC,AT,U/T,U/T,A */
03430      , {      200,      200,      185,      200,      135} /* GC,AT,U/T,U/T,C */
03431      , {      220,      220,      205,      220,      160} /* GC,AT,U/T,U/T,G */
03432      , {      145,      145,      130,      145,      80} /* GC,AT,U/T,U/T,U/T */
03433      }
03434      }
03435      }
03436      , { { { {      245,      240,      220,      230,      235} /* GC,UA,E,E,E */
03437      , {      245,      240,      220,      230,      235} /* GC,UA,E,E,A */
03438      , {      230,      225,      205,      215,      220} /* GC,UA,E,E,C */
03439      , {      245,      240,      220,      230,      235} /* GC,UA,E,E,G */
03440      , {      245,      240,      220,      230,      235} /* GC,UA,E,E,U/T */
03441      }
03442      , { {      245,      240,      220,      230,      235} /* GC,UA,E,A,E */
03443      , {      215,      210,      190,      200,      205} /* GC,UA,E,A,A */
03444      , {      200,      195,      170,      180,      190} /* GC,UA,E,A,C */
03445      , {      185,      160,      165,      145,      185} /* GC,UA,E,A,G */
03446      , {      225,      220,      195,      205,      215} /* GC,UA,E,A,U/T */
03447      }
03448      , { {      245,      240,      220,      230,      235} /* GC,UA,E,C,E */
03449      , {      220,      215,      195,      205,      210} /* GC,UA,E,C,A */
03450      , {      230,      225,      205,      215,      220} /* GC,UA,E,C,C */
03451      , {      245,      240,      220,      230,      235} /* GC,UA,E,C,G */
03452      , {      225,      220,      200,      210,      215} /* GC,UA,E,C,U/T */
03453      }
03454      , { {      220,      215,      195,      205,      215} /* GC,UA,E,G,E */
03455      , {      190,      165,      170,      150,      190} /* GC,UA,E,G,A */
03456      , {      200,      195,      170,      180,      190} /* GC,UA,E,G,C */
03457      , {      185,      135,      110,      180,      155} /* GC,UA,E,G,G */
03458      , {      220,      215,      190,      200,      210} /* GC,UA,E,G,U/T */
03459      }
03460      , { {      245,      240,      220,      230,      235} /* GC,UA,E,U/T,E */
03461      , {      245,      240,      220,      230,      235} /* GC,UA,E,U/T,A */
03462      , {      210,      205,      185,      195,      200} /* GC,UA,E,U/T,C */
03463      , {      245,      240,      220,      230,      235} /* GC,UA,E,U/T,G */
03464      , {      205,      200,      145,      155,      165} /* GC,UA,E,U/T,U/T */
03465      }
03466      }

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03467 ,{{{ 235, 205, 205, 170, 220} /* GC,UA,A,E,E */
03468 ,{ 235, 205, 205, 140, 220} /* GC,UA,A,E,A */
03469 ,{ 220, 190, 190, 155, 205} /* GC,UA,A,E,C */
03470 ,{ 235, 205, 205, 140, 220} /* GC,UA,A,E,G */
03471 ,{ 235, 205, 205, 170, 220} /* GC,UA,A,E,U/T */
03472 }
03473 ,{{{ 235, 205, 205, 140, 220} /* GC,UA,A,A,E */
03474 ,{ 205, 175, 175, 110, 190} /* GC,UA,A,A,A */
03475 ,{ 190, 160, 160, 95, 175} /* GC,UA,A,A,C */
03476 ,{ 155, 125, 125, 60, 140} /* GC,UA,A,A,G */
03477 ,{ 215, 185, 185, 120, 200} /* GC,UA,A,A,U/T */
03478 }
03479 ,{{{ 235, 205, 205, 170, 220} /* GC,UA,A,C,E */
03480 ,{ 210, 180, 180, 115, 195} /* GC,UA,A,C,A */
03481 ,{ 220, 190, 190, 155, 205} /* GC,UA,A,C,C */
03482 ,{ 235, 205, 205, 140, 220} /* GC,UA,A,C,G */
03483 ,{ 215, 185, 185, 150, 200} /* GC,UA,A,C,U/T */
03484 }
03485 ,{{{ 210, 180, 180, 125, 195} /* GC,UA,A,G,E */
03486 ,{ 160, 130, 130, 65, 145} /* GC,UA,A,G,A */
03487 ,{ 190, 160, 160, 95, 175} /* GC,UA,A,G,C */
03488 ,{ 130, 100, 100, 100, 115} /* GC,UA,A,G,G */
03489 ,{ 210, 180, 180, 115, 195} /* GC,UA,A,G,U/T */
03490 }
03491 ,{{{ 235, 205, 205, 155, 220} /* GC,UA,A,U/T,E */
03492 ,{ 235, 205, 205, 140, 220} /* GC,UA,A,U/T,A */
03493 ,{ 200, 170, 170, 135, 185} /* GC,UA,A,U/T,C */
03494 ,{ 235, 205, 205, 140, 220} /* GC,UA,A,U/T,G */
03495 ,{ 195, 165, 135, 70, 150} /* GC,UA,A,U/T,U/T */
03496 }
03497 }
03498 ,{{{ 220, 210, 220, 185, 215} /* GC,UA,C,E,E */
03499 ,{ 220, 210, 220, 185, 215} /* GC,UA,C,E,A */
03500 ,{ 205, 195, 205, 170, 200} /* GC,UA,C,E,C */
03501 ,{ 220, 210, 220, 185, 215} /* GC,UA,C,E,G */
03502 ,{ 220, 210, 220, 185, 215} /* GC,UA,C,E,U/T */
03503 }
03504 ,{{{ 220, 210, 220, 185, 215} /* GC,UA,C,A,E */
03505 ,{ 190, 180, 190, 155, 185} /* GC,UA,C,A,A */
03506 ,{ 175, 160, 170, 135, 170} /* GC,UA,C,A,C */
03507 ,{ 170, 125, 165, 100, 165} /* GC,UA,C,A,G */
03508 ,{ 200, 185, 195, 160, 195} /* GC,UA,C,A,U/T */
03509 }
03510 ,{{{ 220, 210, 220, 185, 215} /* GC,UA,C,C,E */
03511 ,{ 195, 185, 195, 160, 190} /* GC,UA,C,C,A */
03512 ,{ 205, 195, 205, 170, 200} /* GC,UA,C,C,C */
03513 ,{ 220, 210, 220, 185, 215} /* GC,UA,C,C,G */
03514 ,{ 200, 190, 200, 165, 195} /* GC,UA,C,C,U/T */
03515 }
03516 ,{{{ 200, 180, 195, 155, 195} /* GC,UA,C,G,E */
03517 ,{ 175, 130, 170, 105, 170} /* GC,UA,C,G,A */
03518 ,{ 175, 160, 170, 135, 170} /* GC,UA,C,G,C */
03519 ,{ 115, 100, 110, 75, 110} /* GC,UA,C,G,G */
03520 ,{ 195, 180, 190, 155, 190} /* GC,UA,C,G,U/T */
03521 }
03522 ,{{{ 220, 210, 220, 185, 215} /* GC,UA,C,U/T,E */
03523 ,{ 220, 210, 220, 185, 215} /* GC,UA,C,U/T,A */
03524 ,{ 185, 175, 185, 150, 180} /* GC,UA,C,U/T,C */
03525 ,{ 220, 210, 220, 185, 215} /* GC,UA,C,U/T,G */
03526 ,{ 150, 135, 145, 110, 145} /* GC,UA,C,U/T,U/T */
03527 }
03528 }
03529 ,{{{ 230, 140, 205, 180, 230} /* GC,UA,G,E,E */
03530 ,{ 230, 110, 205, 145, 230} /* GC,UA,G,E,A */
03531 ,{ 215, 125, 190, 115, 215} /* GC,UA,G,E,C */
03532 ,{ 230, 110, 205, 180, 230} /* GC,UA,G,E,G */
03533 ,{ 230, 140, 205, 150, 230} /* GC,UA,G,E,U/T */
03534 }
03535 ,{{{ 230, 110, 205, 140, 230} /* GC,UA,G,A,E */
03536 ,{ 200, 80, 175, 100, 200} /* GC,UA,G,A,A */
03537 ,{ 185, 65, 160, 80, 185} /* GC,UA,G,A,C */
03538 ,{ 150, 30, 125, 110, 150} /* GC,UA,G,A,G */
03539 ,{ 210, 90, 185, 105, 210} /* GC,UA,G,A,U/T */
03540 }
03541 ,{{{ 230, 140, 205, 130, 230} /* GC,UA,G,C,E */
03542 ,{ 205, 85, 180, 105, 205} /* GC,UA,G,C,A */
03543 ,{ 215, 125, 190, 115, 215} /* GC,UA,G,C,C */
03544 ,{ 230, 110, 205, 130, 230} /* GC,UA,G,C,G */
03545 ,{ 210, 120, 185, 110, 210} /* GC,UA,G,C,U/T */
03546 }
03547 ,{{{ 210, 95, 180, 175, 205} /* GC,UA,G,G,E */
03548 ,{ 155, 35, 130, 115, 155} /* GC,UA,G,G,A */
03549 ,{ 185, 65, 160, 80, 185} /* GC,UA,G,G,C */
03550 ,{ 185, 70, 100, 150, 125} /* GC,UA,G,G,G */
03551 ,{ 205, 85, 180, 100, 205} /* GC,UA,G,G,U/T */
03552 }
03553 ,{{{ 230, 125, 205, 150, 230} /* GC,UA,G,U/T,E */

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03554      , {      230,      110,      205,      130,      230} /* GC,UA,G,U/T,A */
03555      , {      195,      105,      170,      95,      195} /* GC,UA,G,U/T,C */
03556      , {      230,      110,      205,      130,      230} /* GC,UA,G,U/T,G */
03557      , {      160,      40,      135,      120,      160} /* GC,UA,G,U/T,U/T */
03558      }
03559      }
03560      ,{{{      230,      230,      215,      230,      195} /* GC,UA,U/T,E,E */
03561      , {      230,      230,      215,      230,      195} /* GC,UA,U/T,E,A */
03562      , {      215,      215,      200,      215,      150} /* GC,UA,U/T,E,C */
03563      , {      230,      230,      215,      230,      165} /* GC,UA,U/T,E,G */
03564      , {      230,      230,      215,      230,      165} /* GC,UA,U/T,E,U/T */
03565      }
03566      ,{{{      230,      230,      215,      230,      195} /* GC,UA,U/T,A,E */
03567      , {      200,      200,      185,      200,      165} /* GC,UA,U/T,A,A */
03568      , {      180,      180,      165,      180,      120} /* GC,UA,U/T,A,C */
03569      , {      175,      145,      160,      145,      85} /* GC,UA,U/T,A,G */
03570      , {      205,      205,      190,      205,      145} /* GC,UA,U/T,A,U/T */
03571      }
03572      ,{{{      230,      230,      215,      230,      165} /* GC,UA,U/T,C,E */
03573      , {      205,      205,      190,      205,      140} /* GC,UA,U/T,C,A */
03574      , {      215,      215,      200,      215,      150} /* GC,UA,U/T,C,C */
03575      , {      230,      230,      215,      230,      165} /* GC,UA,U/T,C,G */
03576      , {      210,      210,      195,      210,      145} /* GC,UA,U/T,C,U/T */
03577      }
03578      ,{{{      205,      200,      190,      200,      150} /* GC,UA,U/T,G,E */
03579      , {      180,      150,      165,      150,      90} /* GC,UA,U/T,G,A */
03580      , {      180,      180,      165,      180,      120} /* GC,UA,U/T,G,C */
03581      , {      150,      120,      105,      120,      125} /* GC,UA,U/T,G,G */
03582      , {      200,      200,      185,      200,      140} /* GC,UA,U/T,G,U/T */
03583      }
03584      ,{{{      230,      230,      215,      230,      165} /* GC,UA,U/T,U/T,E */
03585      , {      230,      230,      215,      230,      165} /* GC,UA,U/T,U/T,A */
03586      , {      195,      195,      180,      195,      130} /* GC,UA,U/T,U/T,C */
03587      , {      230,      230,      215,      230,      165} /* GC,UA,U/T,U/T,G */
03588      , {      155,      155,      140,      155,      95} /* GC,UA,U/T,U/T,U/T */
03589      }
03590      }
03591      }
03592      ,{{{      290,      285,      265,      260,      280} /* GC,NN,E,E,E */
03593      , {      280,      275,      265,      260,      280} /* GC,NN,E,E,A */
03594      , {      250,      245,      225,      235,      240} /* GC,NN,E,E,C */
03595      , {      260,      255,      235,      245,      250} /* GC,NN,E,E,G */
03596      , {      290,      285,      235,      245,      250} /* GC,NN,E,E,U/T */
03597      }
03598      ,{{{      280,      275,      250,      260,      270} /* GC,NN,E,A,E */
03599      , {      255,      250,      225,      235,      245} /* GC,NN,E,A,A */
03600      , {      250,      245,      225,      235,      240} /* GC,NN,E,A,C */
03601      , {      215,      190,      200,      180,      215} /* GC,NN,E,A,G */
03602      , {      260,      255,      235,      245,      250} /* GC,NN,E,A,U/T */
03603      }
03604      ,{{{      260,      255,      235,      245,      250} /* GC,NN,E,C,E */
03605      , {      250,      245,      225,      235,      240} /* GC,NN,E,C,A */
03606      , {      250,      245,      225,      235,      240} /* GC,NN,E,C,C */
03607      , {      260,      255,      235,      245,      250} /* GC,NN,E,C,G */
03608      , {      250,      245,      225,      235,      240} /* GC,NN,E,C,U/T */
03609      }
03610      ,{{{      280,      255,      265,      245,      280} /* GC,NN,E,G,E */
03611      , {      255,      230,      240,      220,      255} /* GC,NN,E,G,A */
03612      , {      245,      240,      220,      230,      235} /* GC,NN,E,G,C */
03613      , {      220,      165,      145,      215,      185} /* GC,NN,E,G,G */
03614      , {      260,      255,      235,      245,      250} /* GC,NN,E,G,U/T */
03615      }
03616      ,{{{      290,      285,      235,      245,      250} /* GC,NN,E,U/T,E */
03617      , {      260,      255,      235,      245,      250} /* GC,NN,E,U/T,A */
03618      , {      250,      245,      225,      235,      240} /* GC,NN,E,U/T,C */
03619      , {      260,      255,      235,      245,      250} /* GC,NN,E,U/T,G */
03620      , {      280,      275,      225,      235,      240} /* GC,NN,E,U/T,U/T */
03621      }
03622      }
03623      ,{{{      280,      250,      240,      185,      255} /* GC,NN,A,E,E */
03624      , {      270,      240,      240,      175,      255} /* GC,NN,A,E,A */
03625      , {      240,      210,      210,      175,      225} /* GC,NN,A,E,C */
03626      , {      250,      220,      220,      155,      235} /* GC,NN,A,E,G */
03627      , {      280,      250,      220,      185,      235} /* GC,NN,A,E,U/T */
03628      }
03629      ,{{{      270,      240,      240,      175,      255} /* GC,NN,A,A,E */
03630      , {      245,      215,      215,      150,      230} /* GC,NN,A,A,A */
03631      , {      240,      210,      210,      145,      225} /* GC,NN,A,A,C */
03632      , {      185,      155,      155,      90,      170} /* GC,NN,A,A,G */
03633      , {      250,      220,      220,      155,      235} /* GC,NN,A,A,U/T */
03634      }
03635      ,{{{      250,      220,      220,      185,      235} /* GC,NN,A,C,E */
03636      , {      240,      210,      210,      145,      225} /* GC,NN,A,C,A */
03637      , {      240,      210,      210,      175,      225} /* GC,NN,A,C,C */
03638      , {      250,      220,      220,      155,      235} /* GC,NN,A,C,G */
03639      , {      240,      210,      210,      175,      225} /* GC,NN,A,C,U/T */
03640      }
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03641 ,{{ 250, 220, 220, 155, 235} /* GC,NN,A,G,E */
03642 ,{ 225, 195, 195, 130, 210} /* GC,NN,A,G,A */
03643 ,{ 235, 205, 205, 140, 220} /* GC,NN,A,G,C */
03644 ,{ 160, 130, 130, 130, 145} /* GC,NN,A,G,G */
03645 ,{ 250, 220, 220, 155, 235} /* GC,NN,A,G,U/T */
03646 }
03647 ,{{ 280, 250, 220, 185, 235} /* GC,NN,A,U/T,E */
03648 ,{ 250, 220, 220, 155, 235} /* GC,NN,A,U/T,A */
03649 ,{ 240, 210, 210, 175, 225} /* GC,NN,A,U/T,C */
03650 ,{ 250, 220, 220, 155, 235} /* GC,NN,A,U/T,G */
03651 ,{ 270, 240, 210, 165, 225} /* GC,NN,A,U/T,U/T */
03652 }
03653 }
03654 ,{{{ 265, 240, 265, 215, 260} /* GC,NN,C,E,E */
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03656 ,{ 225, 215, 225, 190, 220} /* GC,NN,C,E,C */
03657 ,{ 235, 225, 235, 200, 230} /* GC,NN,C,E,G */
03658 ,{ 235, 225, 235, 200, 230} /* GC,NN,C,E,U/T */
03659 }
03660 ,{{ 255, 240, 250, 215, 250} /* GC,NN,C,A,E */
03661 ,{ 230, 215, 225, 190, 225} /* GC,NN,C,A,A */
03662 ,{ 225, 215, 225, 190, 220} /* GC,NN,C,A,C */
03663 ,{ 200, 160, 200, 135, 195} /* GC,NN,C,A,G */
03664 ,{ 235, 225, 235, 200, 230} /* GC,NN,C,A,U/T */
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03666 ,{{ 235, 225, 235, 200, 230} /* GC,NN,C,C,E */
03667 ,{ 225, 215, 225, 190, 220} /* GC,NN,C,C,A */
03668 ,{ 225, 215, 225, 190, 220} /* GC,NN,C,C,C */
03669 ,{ 235, 225, 235, 200, 230} /* GC,NN,C,C,G */
03670 ,{ 225, 215, 225, 190, 220} /* GC,NN,C,C,U/T */
03671 }
03672 ,{{ 265, 225, 265, 200, 260} /* GC,NN,C,G,E */
03673 ,{ 240, 200, 240, 175, 235} /* GC,NN,C,G,A */
03674 ,{ 220, 210, 220, 185, 215} /* GC,NN,C,G,C */
03675 ,{ 145, 135, 145, 110, 140} /* GC,NN,C,G,G */
03676 ,{ 235, 225, 235, 200, 230} /* GC,NN,C,G,U/T */
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03678 ,{{ 235, 225, 235, 200, 230} /* GC,NN,C,U/T,E */
03679 ,{ 235, 225, 235, 200, 230} /* GC,NN,C,U/T,A */
03680 ,{ 225, 215, 225, 190, 220} /* GC,NN,C,U/T,C */
03681 ,{ 235, 225, 235, 200, 230} /* GC,NN,C,U/T,G */
03682 ,{ 225, 215, 225, 190, 220} /* GC,NN,C,U/T,U/T */
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03684 }
03685 ,{{{ 265, 155, 240, 210, 265} /* GC,NN,G,E,E */
03686 ,{ 265, 140, 240, 210, 265} /* GC,NN,G,E,A */
03687 ,{ 235, 145, 210, 135, 235} /* GC,NN,G,E,C */
03688 ,{ 245, 125, 220, 210, 245} /* GC,NN,G,E,G */
03689 ,{ 245, 155, 220, 210, 245} /* GC,NN,G,E,U/T */
03690 }
03691 ,{{ 265, 140, 240, 170, 265} /* GC,NN,G,A,E */
03692 ,{ 240, 115, 215, 135, 240} /* GC,NN,G,A,A */
03693 ,{ 235, 115, 210, 135, 235} /* GC,NN,G,A,C */
03694 ,{ 180, 60, 155, 145, 180} /* GC,NN,G,A,G */
03695 ,{ 245, 125, 220, 145, 245} /* GC,NN,G,A,U/T */
03696 }
03697 ,{{ 245, 155, 220, 145, 245} /* GC,NN,G,C,E */
03698 ,{ 235, 115, 210, 135, 235} /* GC,NN,G,C,A */
03699 ,{ 235, 145, 210, 135, 235} /* GC,NN,G,C,C */
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03705 ,{ 230, 110, 205, 130, 230} /* GC,NN,G,G,C */
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03707 ,{ 245, 125, 220, 145, 245} /* GC,NN,G,G,U/T */
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03709 ,{{ 245, 155, 220, 210, 245} /* GC,NN,G,U/T,E */
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03717 ,{ 275, 260, 260, 260, 230} /* GC,NN,U/T,E,A */
03718 ,{ 235, 235, 220, 235, 170} /* GC,NN,U/T,E,C */
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03724 ,{ 235, 235, 220, 235, 170} /* GC,NN,U/T,A,C */
03725 ,{ 210, 180, 195, 180, 130} /* GC,NN,U/T,A,G */
03726 ,{ 245, 245, 230, 245, 180} /* GC,NN,U/T,A,U/T */
03727 }

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03731 ,{ 245, 245, 230, 245, 180} /* GC,NN,U/T,C,G */
03732 ,{ 235, 235, 220, 235, 170} /* GC,NN,U/T,C,U/T */
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03738 ,{ 245, 245, 230, 245, 180} /* GC,NN,U/T,G,U/T */
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03742 ,{ 235, 235, 220, 235, 170} /* GC,NN,U/T,U/T,C */
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03758 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,A,G */
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03782 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,E,C */
03783 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,E,G */
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03806 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,U/T,C */
03807 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,U/T,G */
03808 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,U/T,U/T */
03809 }
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03813 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,E,C */
03814 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,E,G */

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03825 , { INF, INF, INF, INF, INF } /* GT,NP,C,C,C */
03826 , { INF, INF, INF, INF, INF } /* GT,NP,C,C,G */
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03828 }
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03832 , { INF, INF, INF, INF, INF } /* GT,NP,C,G,G */
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03836 , { INF, INF, INF, INF, INF } /* GT,NP,C,U/T,A */
03837 , { INF, INF, INF, INF, INF } /* GT,NP,C,U/T,C */
03838 , { INF, INF, INF, INF, INF } /* GT,NP,C,U/T,G */
03839 , { INF, INF, INF, INF, INF } /* GT,NP,C,U/T,U/T */
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03841 }
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03845 , { INF, INF, INF, INF, INF } /* GT,NP,G,E,G */
03846 , { INF, INF, INF, INF, INF } /* GT,NP,G,E,U/T */
03847 }
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03857 , { INF, INF, INF, INF, INF } /* GT,NP,G,C,G */
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03887 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,C,C */
03888 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,C,G */
03889 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,C,U/T */
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03892 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,G,A */
03893 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,G,C */
03894 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,G,G */
03895 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,G,U/T */
03896 }
03897 , { { INF, INF, INF, INF, INF } /* GT,NP,U/T,U/T,E */
03898 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,U/T,A */
03899 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,U/T,C */
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03901 , { INF, INF, INF, INF, INF } /* GT,NP,U/T,U/T,U/T */

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03909     ,{ 280, 280, 255, 275, 265} /* GT,CG,E,E,U/T */
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03961     ,{ 275, 260, 260, 225, 260} /* GT,CG,A,U/T,A */
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03966     }
03967     ,{{{ 270, 270, 270, 260, 270} /* GT,CG,C,E,E */
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03969     ,{ 245, 245, 245, 235, 245} /* GT,CG,C,E,C */
03970     ,{ 255, 255, 255, 245, 255} /* GT,CG,C,E,G */
03971     ,{ 255, 255, 255, 245, 255} /* GT,CG,C,E,U/T */
03972     }
03973     ,{{ 250, 250, 250, 240, 250} /* GT,CG,C,A,E */
03974     ,{ 210, 210, 210, 200, 210} /* GT,CG,C,A,A */
03975     ,{ 220, 220, 220, 210, 220} /* GT,CG,C,A,C */
03976     ,{ 195, 165, 195, 155, 195} /* GT,CG,C,A,G */
03977     ,{ 245, 245, 245, 235, 245} /* GT,CG,C,A,U/T */
03978     }
03979     ,{{ 255, 255, 255, 245, 255} /* GT,CG,C,C,E */
03980     ,{ 245, 245, 245, 235, 245} /* GT,CG,C,C,A */
03981     ,{ 245, 245, 245, 235, 245} /* GT,CG,C,C,C */
03982     ,{ 225, 225, 225, 215, 225} /* GT,CG,C,C,G */
03983     ,{ 230, 230, 230, 220, 230} /* GT,CG,C,C,U/T */
03984     }
03985     ,{{ 235, 235, 235, 225, 235} /* GT,CG,C,G,E */
03986     ,{ 195, 165, 195, 155, 195} /* GT,CG,C,G,A */
03987     ,{ 215, 215, 215, 205, 215} /* GT,CG,C,G,C */
03988     ,{ 140, 140, 140, 130, 140} /* GT,CG,C,G,G */

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03989 , { 235, 235, 235, 225, 235} /* GT,CG,C,G,U/T */
03990 }
03991 , {{ 260, 260, 260, 250, 260} /* GT,CG,C,U/T,E */
03992 , { 260, 260, 260, 250, 260} /* GT,CG,C,U/T,A */
03993 , { 230, 230, 230, 220, 230} /* GT,CG,C,U/T,C */
03994 , { 255, 255, 255, 245, 255} /* GT,CG,C,U/T,G */
03995 , { 175, 175, 175, 165, 175} /* GT,CG,C,U/T,U/T */
03996 }
03997 }
03998 , {{{ 280, 235, 260, 225, 280} /* GT,CG,G,E,E */
03999 , { 270, 205, 250, 180, 270} /* GT,CG,G,E,A */
04000 , { 255, 220, 235, 165, 255} /* GT,CG,G,E,C */
04001 , { 265, 200, 245, 210, 265} /* GT,CG,G,E,G */
04002 , { 265, 230, 245, 195, 265} /* GT,CG,G,E,U/T */
04003 }
04004 , {{ 260, 195, 240, 185, 260} /* GT,CG,G,A,E */
04005 , { 220, 155, 200, 130, 220} /* GT,CG,G,A,A */
04006 , { 230, 165, 210, 140, 230} /* GT,CG,G,A,C */
04007 , { 175, 110, 155, 150, 175} /* GT,CG,G,A,G */
04008 , { 255, 190, 235, 165, 255} /* GT,CG,G,A,U/T */
04009 }
04010 , {{ 265, 220, 245, 175, 265} /* GT,CG,G,C,E */
04011 , { 255, 190, 235, 165, 255} /* GT,CG,G,C,A */
04012 , { 255, 220, 235, 165, 255} /* GT,CG,G,C,C */
04013 , { 235, 170, 215, 145, 235} /* GT,CG,G,C,G */
04014 , { 240, 205, 220, 150, 240} /* GT,CG,G,C,U/T */
04015 }
04016 , {{ 245, 180, 225, 215, 245} /* GT,CG,G,G,E */
04017 , { 175, 110, 155, 150, 175} /* GT,CG,G,G,A */
04018 , { 225, 160, 205, 135, 225} /* GT,CG,G,G,C */
04019 , { 215, 150, 130, 190, 150} /* GT,CG,G,G,G */
04020 , { 245, 180, 225, 155, 245} /* GT,CG,G,G,U/T */
04021 }
04022 , {{ 270, 220, 250, 185, 270} /* GT,CG,G,U/T,E */
04023 , { 270, 205, 250, 180, 270} /* GT,CG,G,U/T,A */
04024 , { 240, 205, 220, 150, 240} /* GT,CG,G,U/T,C */
04025 , { 265, 200, 245, 175, 265} /* GT,CG,G,U/T,G */
04026 , { 185, 120, 165, 160, 185} /* GT,CG,G,U/T,U/T */
04027 }
04028 }
04029 , {{{ 290, 280, 270, 280, 280} /* GT,CG,U/T,E,E */
04030 , { 280, 270, 260, 270, 270} /* GT,CG,U/T,E,A */
04031 , { 255, 255, 245, 255, 245} /* GT,CG,U/T,E,C */
04032 , { 265, 265, 255, 265, 255} /* GT,CG,U/T,E,G */
04033 , { 265, 265, 255, 265, 255} /* GT,CG,U/T,E,U/T */
04034 }
04035 , {{ 290, 260, 250, 260, 280} /* GT,CG,U/T,A,E */
04036 , { 250, 220, 210, 220, 240} /* GT,CG,U/T,A,A */
04037 , { 230, 230, 220, 230, 220} /* GT,CG,U/T,A,C */
04038 , { 205, 175, 195, 175, 165} /* GT,CG,U/T,A,G */
04039 , { 255, 255, 245, 255, 245} /* GT,CG,U/T,A,U/T */
04040 }
04041 , {{ 265, 265, 255, 265, 255} /* GT,CG,U/T,C,E */
04042 , { 255, 255, 245, 255, 245} /* GT,CG,U/T,C,A */
04043 , { 255, 255, 245, 255, 245} /* GT,CG,U/T,C,C */
04044 , { 235, 235, 225, 235, 225} /* GT,CG,U/T,C,G */
04045 , { 240, 240, 230, 240, 230} /* GT,CG,U/T,C,U/T */
04046 }
04047 , {{ 245, 245, 235, 245, 235} /* GT,CG,U/T,G,E */
04048 , { 205, 175, 195, 175, 165} /* GT,CG,U/T,G,A */
04049 , { 225, 225, 215, 225, 215} /* GT,CG,U/T,G,C */
04050 , { 215, 150, 140, 150, 205} /* GT,CG,U/T,G,G */
04051 , { 245, 245, 235, 245, 235} /* GT,CG,U/T,G,U/T */
04052 }
04053 , {{{ 270, 270, 260, 270, 260} /* GT,CG,U/T,U/T,E */
04054 , { 270, 270, 260, 270, 260} /* GT,CG,U/T,U/T,A */
04055 , { 240, 240, 230, 240, 230} /* GT,CG,U/T,U/T,C */
04056 , { 265, 265, 255, 265, 255} /* GT,CG,U/T,U/T,G */
04057 , { 185, 185, 175, 185, 175} /* GT,CG,U/T,U/T,U/T */
04058 }
04059 }
04060 }
04061 , {{{ 290, 280, 250, 260, 290} /* GT,GC,E,E,E */
04062 , { 280, 270, 240, 250, 280} /* GT,GC,E,E,A */
04063 , { 255, 255, 225, 245, 235} /* GT,GC,E,E,C */
04064 , { 265, 265, 235, 245, 245} /* GT,GC,E,E,G */
04065 , { 260, 260, 235, 255, 245} /* GT,GC,E,E,U/T */
04066 }
04067 , {{ 285, 275, 245, 255, 285} /* GT,GC,E,A,E */
04068 , { 250, 240, 210, 220, 250} /* GT,GC,E,A,A */
04069 , { 240, 240, 215, 225, 225} /* GT,GC,E,A,C */
04070 , { 155, 140, 145, 125, 155} /* GT,GC,E,A,G */
04071 , { 260, 260, 235, 245, 245} /* GT,GC,E,A,U/T */
04072 }
04073 , {{ 250, 250, 225, 245, 235} /* GT,GC,E,C,E */
04074 , { 240, 240, 210, 220, 220} /* GT,GC,E,C,A */
04075 , { 250, 250, 225, 245, 235} /* GT,GC,E,C,C */

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04076 , { 240, 240, 210, 220, 220} /* GT,GC,E,C,G */
04077 , { 245, 245, 220, 240, 230} /* GT,GC,E,C,U/T */
04078 }
04079 , {{ 260, 260, 235, 245, 245} /* GT,GC,E,G,E */
04080 , { 185, 175, 175, 155, 185} /* GT,GC,E,G,A */
04081 , { 215, 215, 190, 200, 200} /* GT,GC,E,G,C */
04082 , { 210, 170, 135, 210, 210} /* GT,GC,E,G,G */
04083 , { 260, 260, 235, 245, 245} /* GT,GC,E,G,U/T */
04084 }
04085 , {{ 270, 270, 240, 260, 250} /* GT,GC,E,U/T,E */
04086 , { 255, 255, 225, 235, 235} /* GT,GC,E,U/T,A */
04087 , { 250, 250, 220, 240, 230} /* GT,GC,E,U/T,C */
04088 , { 265, 265, 235, 245, 245} /* GT,GC,E,U/T,G */
04089 , { 230, 230, 170, 180, 180} /* GT,GC,E,U/T,U/T */
04090 }
04091 }
04092 , {{{ 270, 255, 250, 235, 250} /* GT,GC,A,E,E */
04093 , { 260, 245, 240, 205, 240} /* GT,GC,A,E,A */
04094 , { 245, 230, 225, 220, 225} /* GT,GC,A,E,C */
04095 , { 255, 240, 235, 200, 235} /* GT,GC,A,E,G */
04096 , { 250, 235, 235, 230, 235} /* GT,GC,A,E,U/T */
04097 }
04098 , {{ 265, 250, 245, 210, 245} /* GT,GC,A,A,E */
04099 , { 230, 215, 210, 175, 210} /* GT,GC,A,A,A */
04100 , { 230, 215, 215, 180, 215} /* GT,GC,A,A,C */
04101 , { 130, 115, 115, 80, 115} /* GT,GC,A,A,G */
04102 , { 250, 235, 235, 200, 235} /* GT,GC,A,A,U/T */
04103 }
04104 , {{ 240, 225, 225, 220, 225} /* GT,GC,A,C,E */
04105 , { 230, 215, 210, 175, 210} /* GT,GC,A,C,A */
04106 , { 240, 225, 225, 220, 225} /* GT,GC,A,C,C */
04107 , { 230, 215, 210, 175, 210} /* GT,GC,A,C,G */
04108 , { 235, 220, 220, 215, 220} /* GT,GC,A,C,U/T */
04109 }
04110 , {{ 250, 235, 235, 200, 235} /* GT,GC,A,G,E */
04111 , { 165, 150, 145, 110, 145} /* GT,GC,A,G,A */
04112 , { 205, 190, 190, 155, 190} /* GT,GC,A,G,C */
04113 , { 180, 135, 135, 165, 135} /* GT,GC,A,G,G */
04114 , { 250, 235, 235, 200, 235} /* GT,GC,A,G,U/T */
04115 }
04116 , {{ 260, 245, 240, 235, 240} /* GT,GC,A,U/T,E */
04117 , { 245, 230, 225, 190, 225} /* GT,GC,A,U/T,A */
04118 , { 240, 225, 220, 215, 220} /* GT,GC,A,U/T,C */
04119 , { 255, 240, 235, 200, 235} /* GT,GC,A,U/T,G */
04120 , { 220, 205, 170, 135, 170} /* GT,GC,A,U/T,U/T */
04121 }
04122 }
04123 , {{{ 250, 250, 250, 240, 250} /* GT,GC,C,E,E */
04124 , { 240, 240, 240, 230, 240} /* GT,GC,C,E,A */
04125 , { 225, 225, 225, 215, 225} /* GT,GC,C,E,C */
04126 , { 235, 235, 235, 225, 235} /* GT,GC,C,E,G */
04127 , { 235, 235, 235, 225, 235} /* GT,GC,C,E,U/T */
04128 }
04129 , {{ 245, 245, 245, 235, 245} /* GT,GC,C,A,E */
04130 , { 210, 210, 210, 200, 210} /* GT,GC,C,A,A */
04131 , { 215, 215, 215, 205, 215} /* GT,GC,C,A,C */
04132 , { 145, 115, 145, 105, 145} /* GT,GC,C,A,G */
04133 , { 235, 235, 235, 225, 235} /* GT,GC,C,A,U/T */
04134 }
04135 , {{ 225, 225, 225, 215, 225} /* GT,GC,C,C,E */
04136 , { 210, 210, 210, 200, 210} /* GT,GC,C,C,A */
04137 , { 225, 225, 225, 215, 225} /* GT,GC,C,C,C */
04138 , { 210, 210, 210, 200, 210} /* GT,GC,C,C,G */
04139 , { 220, 220, 220, 210, 220} /* GT,GC,C,C,U/T */
04140 }
04141 , {{ 235, 235, 235, 225, 235} /* GT,GC,C,G,E */
04142 , { 175, 145, 175, 135, 175} /* GT,GC,C,G,A */
04143 , { 190, 190, 190, 180, 190} /* GT,GC,C,G,C */
04144 , { 135, 135, 135, 125, 135} /* GT,GC,C,G,G */
04145 , { 235, 235, 235, 225, 235} /* GT,GC,C,G,U/T */
04146 }
04147 , {{ 240, 240, 240, 230, 240} /* GT,GC,C,U/T,E */
04148 , { 225, 225, 225, 215, 225} /* GT,GC,C,U/T,A */
04149 , { 220, 220, 220, 210, 220} /* GT,GC,C,U/T,C */
04150 , { 235, 235, 235, 225, 235} /* GT,GC,C,U/T,G */
04151 , { 170, 170, 170, 160, 170} /* GT,GC,C,U/T,U/T */
04152 }
04153 }
04154 , {{{ 260, 215, 240, 220, 260} /* GT,GC,G,E,E */
04155 , { 250, 185, 230, 160, 250} /* GT,GC,G,E,A */
04156 , { 235, 200, 215, 145, 235} /* GT,GC,G,E,C */
04157 , { 245, 180, 225, 220, 245} /* GT,GC,G,E,G */
04158 , { 245, 210, 225, 180, 245} /* GT,GC,G,E,U/T */
04159 }
04160 , {{ 255, 190, 235, 165, 255} /* GT,GC,G,A,E */
04161 , { 220, 155, 200, 130, 220} /* GT,GC,G,A,A */
04162 , { 225, 160, 205, 135, 225} /* GT,GC,G,A,C */
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04163      , {      125,      60,      105,      100,      125} /* GT,GC,G,A,G */
04164      , {      245,      180,      225,      155,      245} /* GT,GC,G,A,U/T */
04165      }
04166      , {{      235,      200,      215,      145,      235} /* GT,GC,G,C,E */
04167      , {      220,      155,      200,      130,      220} /* GT,GC,G,C,A */
04168      , {      235,      200,      215,      145,      235} /* GT,GC,G,C,C */
04169      , {      220,      155,      200,      130,      220} /* GT,GC,G,C,G */
04170      , {      230,      195,      210,      140,      230} /* GT,GC,G,C,U/T */
04171      }
04172      , {{      245,      180,      225,      215,      245} /* GT,GC,G,G,E */
04173      , {      155,      90,      135,      130,      155} /* GT,GC,G,G,A */
04174      , {      200,      135,      180,      110,      200} /* GT,GC,G,G,C */
04175      , {      210,      145,      125,      185,      145} /* GT,GC,G,G,G */
04176      , {      245,      180,      225,      155,      245} /* GT,GC,G,G,U/T */
04177      }
04178      , {{      250,      215,      230,      185,      250} /* GT,GC,G,U/T,E */
04179      , {      235,      170,      215,      145,      235} /* GT,GC,G,U/T,A */
04180      , {      230,      195,      210,      140,      230} /* GT,GC,G,U/T,C */
04181      , {      245,      180,      225,      155,      245} /* GT,GC,G,U/T,G */
04182      , {      180,      115,      160,      155,      180} /* GT,GC,G,U/T,U/T */
04183      }
04184      }
04185      , {{{      290,      260,      250,      260,      280} /* GT,GC,U/T,E,E */
04186      , {      280,      250,      240,      250,      270} /* GT,GC,U/T,E,A */
04187      , {      235,      235,      225,      235,      225} /* GT,GC,U/T,E,C */
04188      , {      245,      245,      235,      245,      235} /* GT,GC,U/T,E,G */
04189      , {      245,      245,      235,      245,      235} /* GT,GC,U/T,E,U/T */
04190      }
04191      , {{      285,      255,      245,      255,      275} /* GT,GC,U/T,A,E */
04192      , {      250,      220,      210,      220,      240} /* GT,GC,U/T,A,A */
04193      , {      225,      225,      215,      225,      215} /* GT,GC,U/T,A,C */
04194      , {      155,      125,      145,      125,      115} /* GT,GC,U/T,A,G */
04195      , {      245,      245,      235,      245,      235} /* GT,GC,U/T,A,U/T */
04196      }
04197      , {{      235,      235,      225,      235,      225} /* GT,GC,U/T,C,E */
04198      , {      220,      220,      210,      220,      210} /* GT,GC,U/T,C,A */
04199      , {      235,      235,      225,      235,      225} /* GT,GC,U/T,C,C */
04200      , {      220,      220,      210,      220,      210} /* GT,GC,U/T,C,G */
04201      , {      230,      230,      220,      230,      220} /* GT,GC,U/T,C,U/T */
04202      }
04203      , {{      245,      245,      235,      245,      235} /* GT,GC,U/T,G,E */
04204      , {      185,      155,      175,      155,      145} /* GT,GC,U/T,G,A */
04205      , {      200,      200,      190,      200,      190} /* GT,GC,U/T,G,C */
04206      , {      210,      145,      135,      145,      200} /* GT,GC,U/T,G,G */
04207      , {      245,      245,      235,      245,      235} /* GT,GC,U/T,G,U/T */
04208      }
04209      , {{      250,      250,      240,      250,      240} /* GT,GC,U/T,U/T,E */
04210      , {      235,      235,      225,      235,      225} /* GT,GC,U/T,U/T,A */
04211      , {      230,      230,      220,      230,      220} /* GT,GC,U/T,U/T,C */
04212      , {      245,      245,      235,      245,      235} /* GT,GC,U/T,U/T,G */
04213      , {      180,      180,      170,      180,      170} /* GT,GC,U/T,U/T,U/T */
04214      }
04215      }
04216      }
04217      , {{{      370,      370,      330,      340,      370} /* GT,GT,E,E,E */
04218      , {      360,      350,      320,      330,      360} /* GT,GT,E,E,A */
04219      , {      330,      330,      305,      325,      315} /* GT,GT,E,E,C */
04220      , {      340,      340,      315,      325,      325} /* GT,GT,E,E,G */
04221      , {      370,      370,      315,      335,      325} /* GT,GT,E,E,U/T */
04222      }
04223      , {{      370,      360,      330,      340,      370} /* GT,GT,E,A,E */
04224      , {      345,      335,      305,      315,      345} /* GT,GT,E,A,A */
04225      , {      330,      330,      305,      315,      315} /* GT,GT,E,A,C */
04226      , {      290,      275,      280,      260,      290} /* GT,GT,E,A,G */
04227      , {      340,      340,      315,      325,      325} /* GT,GT,E,A,U/T */
04228      }
04229      , {{      330,      330,      305,      325,      315} /* GT,GT,E,C,E */
04230      , {      330,      330,      305,      315,      315} /* GT,GT,E,C,A */
04231      , {      330,      330,      305,      325,      315} /* GT,GT,E,C,C */
04232      , {      320,      320,      295,      305,      305} /* GT,GT,E,C,G */
04233      , {      330,      330,      305,      325,      315} /* GT,GT,E,C,U/T */
04234      }
04235      , {{      340,      340,      325,      325,      335} /* GT,GT,E,G,E */
04236      , {      310,      295,      300,      280,      310} /* GT,GT,E,G,A */
04237      , {      320,      320,      295,      305,      305} /* GT,GT,E,G,C */
04238      , {      300,      260,      225,      300,      300} /* GT,GT,E,G,G */
04239      , {      340,      340,      315,      325,      325} /* GT,GT,E,G,U/T */
04240      }
04241      , {{      370,      370,      315,      335,      325} /* GT,GT,E,U/T,E */
04242      , {      330,      330,      305,      315,      315} /* GT,GT,E,U/T,A */
04243      , {      330,      330,      305,      325,      315} /* GT,GT,E,U/T,C */
04244      , {      340,      340,      315,      325,      325} /* GT,GT,E,U/T,G */
04245      , {      360,      360,      305,      315,      315} /* GT,GT,E,U/T,U/T */
04246      }
04247      }
04248      , {{{      360,      345,      330,      310,      330} /* GT,GT,A,E,E */
04249      , {      340,      325,      320,      285,      320} /* GT,GT,A,E,A */

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04250      , {      320,      305,      305,      300,      305} /* GT,GT,A,E,C */
04251      , {      330,      315,      315,      280,      315} /* GT,GT,A,E,G */
04252      , {      360,      345,      315,      310,      315} /* GT,GT,A,E,U/T */
04253      }
04254      , {{      350,      335,      330,      295,      330} /* GT,GT,A,A,E */
04255      , {      325,      310,      305,      270,      305} /* GT,GT,A,A,A */
04256      , {      320,      305,      305,      270,      305} /* GT,GT,A,A,C */
04257      , {      265,      250,      250,      215,      250} /* GT,GT,A,A,G */
04258      , {      330,      315,      315,      280,      315} /* GT,GT,A,A,U/T */
04259      }
04260      , {{      320,      305,      305,      300,      305} /* GT,GT,A,C,E */
04261      , {      320,      305,      305,      270,      305} /* GT,GT,A,C,A */
04262      , {      320,      305,      305,      300,      305} /* GT,GT,A,C,C */
04263      , {      310,      295,      295,      260,      295} /* GT,GT,A,C,G */
04264      , {      320,      305,      305,      300,      305} /* GT,GT,A,C,U/T */
04265      }
04266      , {{      330,      315,      315,      280,      315} /* GT,GT,A,G,E */
04267      , {      285,      270,      270,      235,      270} /* GT,GT,A,G,A */
04268      , {      310,      295,      295,      260,      295} /* GT,GT,A,G,C */
04269      , {      270,      225,      225,      255,      225} /* GT,GT,A,G,G */
04270      , {      330,      315,      315,      280,      315} /* GT,GT,A,G,U/T */
04271      }
04272      , {{      360,      345,      315,      310,      315} /* GT,GT,A,U/T,E */
04273      , {      320,      305,      305,      270,      305} /* GT,GT,A,U/T,A */
04274      , {      320,      305,      305,      300,      305} /* GT,GT,A,U/T,C */
04275      , {      330,      315,      315,      280,      315} /* GT,GT,A,U/T,G */
04276      , {      350,      335,      305,      270,      305} /* GT,GT,A,U/T,U/T */
04277      }
04278      }
04279      , {{{      330,      330,      330,      320,      330} /* GT,GT,C,E,E */
04280      , {      320,      320,      320,      310,      320} /* GT,GT,C,E,A */
04281      , {      305,      305,      305,      295,      305} /* GT,GT,C,E,C */
04282      , {      315,      315,      315,      305,      315} /* GT,GT,C,E,G */
04283      , {      315,      315,      315,      305,      315} /* GT,GT,C,E,U/T */
04284      }
04285      , {{      330,      330,      330,      320,      330} /* GT,GT,C,A,E */
04286      , {      305,      305,      305,      295,      305} /* GT,GT,C,A,A */
04287      , {      305,      305,      305,      295,      305} /* GT,GT,C,A,C */
04288      , {      280,      250,      280,      240,      280} /* GT,GT,C,A,G */
04289      , {      315,      315,      315,      305,      315} /* GT,GT,C,A,U/T */
04290      }
04291      , {{      305,      305,      305,      295,      305} /* GT,GT,C,C,E */
04292      , {      305,      305,      305,      295,      305} /* GT,GT,C,C,A */
04293      , {      305,      305,      305,      295,      305} /* GT,GT,C,C,C */
04294      , {      295,      295,      295,      285,      295} /* GT,GT,C,C,G */
04295      , {      305,      305,      305,      295,      305} /* GT,GT,C,C,U/T */
04296      }
04297      , {{      325,      315,      325,      305,      325} /* GT,GT,C,G,E */
04298      , {      300,      270,      300,      260,      300} /* GT,GT,C,G,A */
04299      , {      295,      295,      295,      285,      295} /* GT,GT,C,G,C */
04300      , {      225,      225,      225,      215,      225} /* GT,GT,C,G,G */
04301      , {      315,      315,      315,      305,      315} /* GT,GT,C,G,U/T */
04302      }
04303      , {{{      315,      315,      315,      305,      315} /* GT,GT,C,U/T,E */
04304      , {      305,      305,      305,      295,      305} /* GT,GT,C,U/T,A */
04305      , {      305,      305,      305,      295,      305} /* GT,GT,C,U/T,C */
04306      , {      315,      315,      315,      305,      315} /* GT,GT,C,U/T,G */
04307      , {      305,      305,      305,      295,      305} /* GT,GT,C,U/T,U/T */
04308      }
04309      }
04310      , {{{      340,      290,      320,      300,      340} /* GT,GT,G,E,E */
04311      , {      330,      265,      310,      270,      330} /* GT,GT,G,E,A */
04312      , {      315,      280,      295,      225,      315} /* GT,GT,G,E,C */
04313      , {      325,      260,      305,      300,      325} /* GT,GT,G,E,G */
04314      , {      325,      290,      305,      300,      325} /* GT,GT,G,E,U/T */
04315      }
04316      , {{      340,      275,      320,      260,      340} /* GT,GT,G,A,E */
04317      , {      315,      250,      295,      225,      315} /* GT,GT,G,A,A */
04318      , {      315,      250,      295,      225,      315} /* GT,GT,G,A,C */
04319      , {      260,      195,      240,      235,      260} /* GT,GT,G,A,G */
04320      , {      325,      260,      305,      235,      325} /* GT,GT,G,A,U/T */
04321      }
04322      , {{      315,      280,      295,      225,      315} /* GT,GT,G,C,E */
04323      , {      315,      250,      295,      225,      315} /* GT,GT,G,C,A */
04324      , {      315,      280,      295,      225,      315} /* GT,GT,G,C,C */
04325      , {      305,      240,      285,      215,      305} /* GT,GT,G,C,G */
04326      , {      315,      280,      295,      225,      315} /* GT,GT,G,C,U/T */
04327      }
04328      , {{      325,      260,      305,      300,      325} /* GT,GT,G,G,E */
04329      , {      280,      215,      260,      255,      280} /* GT,GT,G,G,A */
04330      , {      305,      240,      285,      215,      305} /* GT,GT,G,G,C */
04331      , {      300,      235,      215,      275,      235} /* GT,GT,G,G,G */
04332      , {      325,      260,      305,      235,      325} /* GT,GT,G,G,U/T */
04333      }
04334      , {{      325,      290,      305,      300,      325} /* GT,GT,G,U/T,E */
04335      , {      315,      250,      295,      225,      315} /* GT,GT,G,U/T,A */
04336      , {      315,      280,      295,      225,      315} /* GT,GT,G,U/T,C */

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04337      , { 325, 260, 305, 235, 325} /* GT,GT,G,U/T,G */
04338      , { 315, 250, 295, 290, 315} /* GT,GT,G,U/T,U/T */
04339      }
04340      }
04341      ,{{{ 370, 340, 330, 340, 360} /* GT,GT,U/T,E,E */
04342      , { 360, 330, 320, 330, 350} /* GT,GT,U/T,E,A */
04343      , { 315, 315, 305, 315, 305} /* GT,GT,U/T,E,C */
04344      , { 325, 325, 315, 325, 315} /* GT,GT,U/T,E,G */
04345      , { 325, 325, 315, 325, 315} /* GT,GT,U/T,E,U/T */
04346      }
04347      ,{{{ 370, 340, 330, 340, 360} /* GT,GT,U/T,A,E */
04348      , { 345, 315, 305, 315, 335} /* GT,GT,U/T,A,A */
04349      , { 315, 315, 305, 315, 305} /* GT,GT,U/T,A,C */
04350      , { 290, 260, 280, 260, 250} /* GT,GT,U/T,A,G */
04351      , { 325, 325, 315, 325, 315} /* GT,GT,U/T,A,U/T */
04352      }
04353      ,{{{ 315, 315, 305, 315, 305} /* GT,GT,U/T,C,E */
04354      , { 315, 315, 305, 315, 305} /* GT,GT,U/T,C,A */
04355      , { 315, 315, 305, 315, 305} /* GT,GT,U/T,C,C */
04356      , { 305, 305, 295, 305, 295} /* GT,GT,U/T,C,G */
04357      , { 315, 315, 305, 315, 305} /* GT,GT,U/T,C,U/T */
04358      }
04359      ,{{{ 335, 325, 325, 325, 315} /* GT,GT,U/T,G,E */
04360      , { 310, 280, 300, 280, 270} /* GT,GT,U/T,G,A */
04361      , { 305, 305, 295, 305, 295} /* GT,GT,U/T,G,C */
04362      , { 300, 235, 225, 235, 290} /* GT,GT,U/T,G,G */
04363      , { 325, 325, 315, 325, 315} /* GT,GT,U/T,G,U/T */
04364      }
04365      ,{{{ 325, 325, 315, 325, 315} /* GT,GT,U/T,U/T,E */
04366      , { 315, 315, 305, 315, 305} /* GT,GT,U/T,U/T,A */
04367      , { 315, 315, 305, 315, 305} /* GT,GT,U/T,U/T,C */
04368      , { 325, 325, 315, 325, 315} /* GT,GT,U/T,U/T,G */
04369      , { 315, 315, 305, 315, 305} /* GT,GT,U/T,U/T,U/T */
04370      }
04371      }
04372      }
04373      ,{{{ 355, 355, 345, 335, 355} /* GT,UG,E,E,E */
04374      , { 355, 340, 345, 335, 355} /* GT,UG,E,E,A */
04375      , { 315, 315, 290, 310, 300} /* GT,UG,E,E,C */
04376      , { 325, 325, 300, 310, 310} /* GT,UG,E,E,G */
04377      , { 355, 355, 300, 320, 310} /* GT,UG,E,E,U/T */
04378      }
04379      ,{{{ 335, 335, 300, 335, 320} /* GT,UG,E,A,E */
04380      , { 310, 310, 255, 310, 295} /* GT,UG,E,A,A */
04381      , { 315, 315, 290, 300, 300} /* GT,UG,E,A,C */
04382      , { 245, 240, 235, 215, 245} /* GT,UG,E,A,G */
04383      , { 325, 325, 300, 310, 310} /* GT,UG,E,A,U/T */
04384      }
04385      ,{{{ 315, 315, 290, 310, 300} /* GT,UG,E,C,E */
04386      , { 315, 315, 290, 300, 300} /* GT,UG,E,C,A */
04387      , { 315, 315, 290, 310, 300} /* GT,UG,E,C,C */
04388      , { 300, 300, 275, 285, 285} /* GT,UG,E,C,G */
04389      , { 315, 315, 290, 310, 300} /* GT,UG,E,C,U/T */
04390      }
04391      ,{{{ 355, 340, 345, 325, 355} /* GT,UG,E,G,E */
04392      , { 330, 315, 320, 300, 330} /* GT,UG,E,G,A */
04393      , { 310, 310, 285, 295, 295} /* GT,UG,E,G,C */
04394      , { 285, 245, 210, 285, 285} /* GT,UG,E,G,G */
04395      , { 325, 325, 300, 310, 310} /* GT,UG,E,G,U/T */
04396      }
04397      ,{{{ 355, 355, 300, 320, 310} /* GT,UG,E,U/T,E */
04398      , { 325, 325, 300, 310, 310} /* GT,UG,E,U/T,A */
04399      , { 315, 315, 290, 310, 300} /* GT,UG,E,U/T,C */
04400      , { 325, 325, 300, 310, 310} /* GT,UG,E,U/T,G */
04401      , { 345, 345, 290, 300, 300} /* GT,UG,E,U/T,U/T */
04402      }
04403      }
04404      ,{{{ 345, 330, 315, 310, 315} /* GT,UG,A,E,E */
04405      , { 330, 315, 315, 310, 315} /* GT,UG,A,E,A */
04406      , { 305, 290, 290, 285, 290} /* GT,UG,A,E,C */
04407      , { 315, 300, 300, 265, 300} /* GT,UG,A,E,G */
04408      , { 345, 330, 300, 295, 300} /* GT,UG,A,E,U/T */
04409      }
04410      ,{{{ 325, 310, 300, 310, 300} /* GT,UG,A,A,E */
04411      , { 300, 285, 255, 285, 255} /* GT,UG,A,A,A */
04412      , { 305, 290, 290, 255, 290} /* GT,UG,A,A,C */
04413      , { 230, 215, 205, 170, 205} /* GT,UG,A,A,G */
04414      , { 315, 300, 300, 265, 300} /* GT,UG,A,A,U/T */
04415      }
04416      ,{{{ 305, 290, 290, 285, 290} /* GT,UG,A,C,E */
04417      , { 305, 290, 290, 255, 290} /* GT,UG,A,C,A */
04418      , { 305, 290, 290, 285, 290} /* GT,UG,A,C,C */
04419      , { 290, 275, 275, 240, 275} /* GT,UG,A,C,G */
04420      , { 305, 290, 290, 285, 290} /* GT,UG,A,C,U/T */
04421      }
04422      ,{{{ 330, 315, 315, 280, 315} /* GT,UG,A,G,E */
04423      , { 305, 290, 290, 255, 290} /* GT,UG,A,G,A */

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04424 , { 300, 285, 285, 250, 285} /* GT,UG,A,G,C */
04425 , { 255, 210, 210, 240, 210} /* GT,UG,A,G,G */
04426 , { 315, 300, 300, 265, 300} /* GT,UG,A,G,U/T */
04427 }
04428 , { { 345, 330, 300, 295, 300} /* GT,UG,A,U/T,E */
04429 , { 315, 300, 300, 265, 300} /* GT,UG,A,U/T,A */
04430 , { 305, 290, 290, 285, 290} /* GT,UG,A,U/T,C */
04431 , { 315, 300, 300, 265, 300} /* GT,UG,A,U/T,G */
04432 , { 335, 320, 290, 255, 290} /* GT,UG,A,U/T,U/T */
04433 }
04434 }
04435 , { { { 345, 315, 345, 305, 345} /* GT,UG,C,E,E */
04436 , { 345, 315, 345, 305, 345} /* GT,UG,C,E,A */
04437 , { 290, 290, 290, 280, 290} /* GT,UG,C,E,C */
04438 , { 300, 300, 300, 290, 300} /* GT,UG,C,E,G */
04439 , { 300, 300, 300, 290, 300} /* GT,UG,C,E,U/T */
04440 }
04441 , { { 300, 300, 300, 290, 300} /* GT,UG,C,A,E */
04442 , { 255, 255, 255, 245, 255} /* GT,UG,C,A,A */
04443 , { 290, 290, 290, 280, 290} /* GT,UG,C,A,C */
04444 , { 235, 205, 235, 195, 235} /* GT,UG,C,A,G */
04445 , { 300, 300, 300, 290, 300} /* GT,UG,C,A,U/T */
04446 }
04447 , { { 290, 290, 290, 280, 290} /* GT,UG,C,C,E */
04448 , { 290, 290, 290, 280, 290} /* GT,UG,C,C,A */
04449 , { 290, 290, 290, 280, 290} /* GT,UG,C,C,C */
04450 , { 275, 275, 275, 265, 275} /* GT,UG,C,C,G */
04451 , { 290, 290, 290, 280, 290} /* GT,UG,C,C,U/T */
04452 }
04453 , { { 345, 315, 345, 305, 345} /* GT,UG,C,G,E */
04454 , { 320, 290, 320, 280, 320} /* GT,UG,C,G,A */
04455 , { 285, 285, 285, 275, 285} /* GT,UG,C,G,C */
04456 , { 210, 210, 210, 200, 210} /* GT,UG,C,G,G */
04457 , { 300, 300, 300, 290, 300} /* GT,UG,C,G,U/T */
04458 }
04459 , { { 300, 300, 300, 290, 300} /* GT,UG,C,U/T,E */
04460 , { 300, 300, 300, 290, 300} /* GT,UG,C,U/T,A */
04461 , { 290, 290, 290, 280, 290} /* GT,UG,C,U/T,C */
04462 , { 300, 300, 300, 290, 300} /* GT,UG,C,U/T,G */
04463 , { 290, 290, 290, 280, 290} /* GT,UG,C,U/T,U/T */
04464 }
04465 }
04466 , { { { 325, 275, 305, 300, 325} /* GT,UG,G,E,E */
04467 , { 325, 260, 305, 300, 325} /* GT,UG,G,E,A */
04468 , { 300, 265, 280, 210, 300} /* GT,UG,G,E,C */
04469 , { 310, 245, 290, 285, 310} /* GT,UG,G,E,G */
04470 , { 310, 275, 290, 285, 310} /* GT,UG,G,E,U/T */
04471 }
04472 , { { 310, 245, 290, 220, 310} /* GT,UG,G,A,E */
04473 , { 265, 200, 245, 175, 265} /* GT,UG,G,A,A */
04474 , { 300, 235, 280, 210, 300} /* GT,UG,G,A,C */
04475 , { 215, 115, 195, 190, 215} /* GT,UG,G,A,G */
04476 , { 310, 245, 290, 220, 310} /* GT,UG,G,A,U/T */
04477 }
04478 , { { 300, 265, 280, 210, 300} /* GT,UG,G,C,E */
04479 , { 300, 235, 280, 210, 300} /* GT,UG,G,C,A */
04480 , { 300, 265, 280, 210, 300} /* GT,UG,G,C,C */
04481 , { 285, 220, 265, 195, 285} /* GT,UG,G,C,G */
04482 , { 300, 265, 280, 210, 300} /* GT,UG,G,C,U/T */
04483 }
04484 , { { 325, 260, 305, 300, 325} /* GT,UG,G,G,E */
04485 , { 300, 235, 280, 275, 300} /* GT,UG,G,G,A */
04486 , { 295, 230, 275, 205, 295} /* GT,UG,G,G,C */
04487 , { 285, 220, 200, 260, 220} /* GT,UG,G,G,G */
04488 , { 310, 245, 290, 220, 310} /* GT,UG,G,G,U/T */
04489 }
04490 , { { 310, 275, 290, 285, 310} /* GT,UG,G,U/T,E */
04491 , { 310, 245, 290, 220, 310} /* GT,UG,G,U/T,A */
04492 , { 300, 265, 280, 210, 300} /* GT,UG,G,U/T,C */
04493 , { 310, 245, 290, 220, 310} /* GT,UG,G,U/T,G */
04494 , { 300, 235, 280, 275, 300} /* GT,UG,G,U/T,U/T */
04495 }
04496 }
04497 , { { { 355, 325, 345, 325, 315} /* GT,UG,U/T,E,E */
04498 , { 355, 325, 345, 325, 315} /* GT,UG,U/T,E,A */
04499 , { 300, 300, 290, 300, 290} /* GT,UG,U/T,E,C */
04500 , { 310, 310, 300, 310, 300} /* GT,UG,U/T,E,G */
04501 , { 310, 310, 300, 310, 300} /* GT,UG,U/T,E,U/T */
04502 }
04503 , { { 320, 310, 300, 310, 310} /* GT,UG,U/T,A,E */
04504 , { 295, 265, 255, 265, 285} /* GT,UG,U/T,A,A */
04505 , { 300, 300, 290, 300, 290} /* GT,UG,U/T,A,C */
04506 , { 245, 215, 235, 215, 205} /* GT,UG,U/T,A,G */
04507 , { 310, 310, 300, 310, 300} /* GT,UG,U/T,A,U/T */
04508 }
04509 , { { 300, 300, 290, 300, 290} /* GT,UG,U/T,C,E */
04510 , { 300, 300, 290, 300, 290} /* GT,UG,U/T,C,A */

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04511      , {      300,      300,      290,      300,      290} /* GT,UG,U/T,C,C */
04512      , {      285,      285,      275,      285,      275} /* GT,UG,U/T,C,G */
04513      , {      300,      300,      290,      300,      290} /* GT,UG,U/T,C,U/T */
04514      }
04515      , {{      355,      325,      345,      325,      315} /* GT,UG,U/T,G,E */
04516      , {      330,      300,      320,      300,      290} /* GT,UG,U/T,G,A */
04517      , {      295,      295,      285,      295,      285} /* GT,UG,U/T,G,C */
04518      , {      285,      220,      210,      220,      275} /* GT,UG,U/T,G,G */
04519      , {      310,      310,      300,      310,      300} /* GT,UG,U/T,G,U/T */
04520      }
04521      , {{      310,      310,      300,      310,      300} /* GT,UG,U/T,U/T,E */
04522      , {      310,      310,      300,      310,      300} /* GT,UG,U/T,U/T,A */
04523      , {      300,      300,      290,      300,      290} /* GT,UG,U/T,U/T,C */
04524      , {      310,      310,      300,      310,      300} /* GT,UG,U/T,U/T,G */
04525      , {      300,      300,      290,      300,      290} /* GT,UG,U/T,U/T,U/T */
04526      }
04527      }
04528      }
04529      , {{{      340,      325,      300,      310,      340} /* GT,AT,E,E,E */
04530      , {      340,      325,      300,      310,      340} /* GT,AT,E,E,A */
04531      , {      300,      300,      275,      295,      285} /* GT,AT,E,E,C */
04532      , {      320,      320,      290,      300,      300} /* GT,AT,E,E,G */
04533      , {      315,      315,      290,      310,      300} /* GT,AT,E,E,U/T */
04534      }
04535      , {{      340,      325,      300,      310,      340} /* GT,AT,E,A,E */
04536      , {      305,      290,      265,      275,      305} /* GT,AT,E,A,A */
04537      , {      290,      290,      260,      270,      270} /* GT,AT,E,A,C */
04538      , {      245,      235,      235,      215,      245} /* GT,AT,E,A,G */
04539      , {      315,      315,      285,      295,      295} /* GT,AT,E,A,U/T */
04540      }
04541      , {{      310,      310,      280,      300,      290} /* GT,AT,E,C,E */
04542      , {      295,      295,      265,      275,      275} /* GT,AT,E,C,A */
04543      , {      300,      300,      275,      295,      285} /* GT,AT,E,C,C */
04544      , {      310,      310,      280,      290,      290} /* GT,AT,E,C,G */
04545      , {      295,      295,      270,      290,      280} /* GT,AT,E,C,U/T */
04546      }
04547      , {{      315,      315,      300,      295,      310} /* GT,AT,E,G,E */
04548      , {      280,      270,      270,      250,      280} /* GT,AT,E,G,A */
04549      , {      295,      295,      265,      275,      275} /* GT,AT,E,G,C */
04550      , {      255,      215,      180,      255,      255} /* GT,AT,E,G,G */
04551      , {      315,      315,      285,      295,      295} /* GT,AT,E,G,U/T */
04552      }
04553      , {{      320,      320,      290,      310,      300} /* GT,AT,E,U/T,E */
04554      , {      320,      320,      290,      300,      300} /* GT,AT,E,U/T,A */
04555      , {      295,      295,      270,      290,      280} /* GT,AT,E,U/T,C */
04556      , {      320,      320,      290,      300,      300} /* GT,AT,E,U/T,G */
04557      , {      270,      270,      215,      225,      225} /* GT,AT,E,U/T,U/T */
04558      }
04559      }
04560      , {{{      315,      300,      300,      285,      300} /* GT,AT,A,E,E */
04561      , {      315,      300,      300,      265,      300} /* GT,AT,A,E,A */
04562      , {      290,      275,      275,      270,      275} /* GT,AT,A,E,C */
04563      , {      310,      295,      290,      255,      290} /* GT,AT,A,E,G */
04564      , {      305,      290,      290,      285,      290} /* GT,AT,A,E,U/T */
04565      }
04566      , {{      315,      300,      300,      265,      300} /* GT,AT,A,A,E */
04567      , {      280,      265,      265,      230,      265} /* GT,AT,A,A,A */
04568      , {      280,      265,      260,      225,      260} /* GT,AT,A,A,C */
04569      , {      225,      210,      205,      170,      205} /* GT,AT,A,A,G */
04570      , {      305,      290,      285,      250,      285} /* GT,AT,A,A,U/T */
04571      }
04572      , {{{      300,      285,      280,      275,      280} /* GT,AT,A,C,E */
04573      , {      285,      270,      265,      230,      265} /* GT,AT,A,C,A */
04574      , {      290,      275,      275,      270,      275} /* GT,AT,A,C,C */
04575      , {      300,      285,      280,      245,      280} /* GT,AT,A,C,G */
04576      , {      285,      270,      270,      265,      270} /* GT,AT,A,C,U/T */
04577      }
04578      , {{      305,      290,      285,      250,      285} /* GT,AT,A,G,E */
04579      , {      260,      245,      240,      205,      240} /* GT,AT,A,G,A */
04580      , {      285,      270,      265,      230,      265} /* GT,AT,A,G,C */
04581      , {      225,      185,      180,      210,      180} /* GT,AT,A,G,G */
04582      , {      305,      290,      285,      250,      285} /* GT,AT,A,G,U/T */
04583      }
04584      , {{      310,      295,      290,      285,      290} /* GT,AT,A,U/T,E */
04585      , {      310,      295,      290,      255,      290} /* GT,AT,A,U/T,A */
04586      , {      285,      270,      270,      265,      270} /* GT,AT,A,U/T,C */
04587      , {      310,      295,      290,      255,      290} /* GT,AT,A,U/T,G */
04588      , {      260,      245,      215,      180,      215} /* GT,AT,A,U/T,U/T */
04589      }
04590      }
04591      , {{{      300,      300,      300,      290,      300} /* GT,AT,C,E,E */
04592      , {      300,      300,      300,      290,      300} /* GT,AT,C,E,A */
04593      , {      275,      275,      275,      265,      275} /* GT,AT,C,E,C */
04594      , {      290,      290,      290,      280,      290} /* GT,AT,C,E,G */
04595      , {      290,      290,      290,      280,      290} /* GT,AT,C,E,U/T */
04596      }
04597      , {{      300,      300,      300,      290,      300} /* GT,AT,C,A,E */

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```
04598 , { 265, 265, 265, 255, 265} /* GT,AT,C,A,A */
04599 , { 260, 260, 260, 250, 260} /* GT,AT,C,A,C */
04600 , { 235, 205, 235, 195, 235} /* GT,AT,C,A,G */
04601 , { 285, 285, 285, 275, 285} /* GT,AT,C,A,U/T */
04602 }
04603 , { { 280, 280, 280, 270, 280} /* GT,AT,C,C,E */
04604 , { 265, 265, 265, 255, 265} /* GT,AT,C,C,A */
04605 , { 275, 275, 275, 265, 275} /* GT,AT,C,C,C */
04606 , { 280, 280, 280, 270, 280} /* GT,AT,C,C,G */
04607 , { 270, 270, 270, 260, 270} /* GT,AT,C,C,U/T */
04608 }
04609 , { { 300, 285, 300, 275, 300} /* GT,AT,C,G,E */
04610 , { 270, 240, 270, 230, 270} /* GT,AT,C,G,A */
04611 , { 265, 265, 265, 255, 265} /* GT,AT,C,G,C */
04612 , { 180, 180, 180, 170, 180} /* GT,AT,C,G,G */
04613 , { 285, 285, 285, 275, 285} /* GT,AT,C,G,U/T */
04614 }
04615 , { { 290, 290, 290, 280, 290} /* GT,AT,C,U/T,E */
04616 , { 290, 290, 290, 280, 290} /* GT,AT,C,U/T,A */
04617 , { 270, 270, 270, 260, 270} /* GT,AT,C,U/T,C */
04618 , { 290, 290, 290, 280, 290} /* GT,AT,C,U/T,G */
04619 , { 215, 215, 215, 205, 215} /* GT,AT,C,U/T,U/T */
04620 }
04621 }
04622 , { { { 310, 265, 290, 260, 310} /* GT,AT,G,E,E */
04623 , { 310, 245, 290, 255, 310} /* GT,AT,G,E,A */
04624 , { 285, 250, 265, 195, 285} /* GT,AT,G,E,C */
04625 , { 300, 235, 280, 260, 300} /* GT,AT,G,E,G */
04626 , { 300, 265, 280, 230, 300} /* GT,AT,G,E,U/T */
04627 }
04628 , { { 310, 245, 290, 220, 310} /* GT,AT,G,A,E */
04629 , { 275, 210, 255, 185, 275} /* GT,AT,G,A,A */
04630 , { 270, 205, 250, 180, 270} /* GT,AT,G,A,C */
04631 , { 215, 150, 195, 190, 215} /* GT,AT,G,A,G */
04632 , { 295, 230, 275, 205, 295} /* GT,AT,G,A,U/T */
04633 }
04634 , { { 290, 255, 270, 200, 290} /* GT,AT,G,C,E */
04635 , { 275, 210, 255, 185, 275} /* GT,AT,G,C,A */
04636 , { 285, 250, 265, 195, 285} /* GT,AT,G,C,C */
04637 , { 290, 225, 270, 200, 290} /* GT,AT,G,C,G */
04638 , { 280, 245, 260, 190, 280} /* GT,AT,G,C,U/T */
04639 }
04640 , { { 295, 230, 275, 260, 295} /* GT,AT,G,G,E */
04641 , { 250, 185, 230, 225, 250} /* GT,AT,G,G,A */
04642 , { 275, 210, 255, 185, 275} /* GT,AT,G,G,C */
04643 , { 255, 190, 170, 230, 190} /* GT,AT,G,G,G */
04644 , { 295, 230, 275, 205, 295} /* GT,AT,G,G,U/T */
04645 }
04646 , { { 300, 265, 280, 230, 300} /* GT,AT,G,U/T,E */
04647 , { 300, 235, 280, 210, 300} /* GT,AT,G,U/T,A */
04648 , { 280, 245, 260, 190, 280} /* GT,AT,G,U/T,C */
04649 , { 300, 235, 280, 210, 300} /* GT,AT,G,U/T,G */
04650 , { 225, 160, 205, 200, 225} /* GT,AT,G,U/T,U/T */
04651 }
04652 }
04653 , { { { 340, 310, 300, 310, 330} /* GT,AT,U/T,E,E */
04654 , { 340, 310, 300, 310, 330} /* GT,AT,U/T,E,A */
04655 , { 285, 285, 275, 285, 275} /* GT,AT,U/T,E,C */
04656 , { 300, 300, 290, 300, 290} /* GT,AT,U/T,E,G */
04657 , { 300, 300, 290, 300, 290} /* GT,AT,U/T,E,U/T */
04658 }
04659 , { { { 340, 310, 300, 310, 330} /* GT,AT,U/T,A,E */
04660 , { 305, 275, 265, 275, 295} /* GT,AT,U/T,A,A */
04661 , { 270, 270, 260, 270, 260} /* GT,AT,U/T,A,C */
04662 , { 245, 215, 235, 215, 205} /* GT,AT,U/T,A,G */
04663 , { 295, 295, 285, 295, 285} /* GT,AT,U/T,A,U/T */
04664 }
04665 , { { 290, 290, 280, 290, 280} /* GT,AT,U/T,C,E */
04666 , { 275, 275, 265, 275, 265} /* GT,AT,U/T,C,A */
04667 , { 285, 285, 275, 285, 275} /* GT,AT,U/T,C,C */
04668 , { 290, 290, 280, 290, 280} /* GT,AT,U/T,C,G */
04669 , { 280, 280, 270, 280, 270} /* GT,AT,U/T,C,U/T */
04670 }
04671 , { { 310, 295, 300, 295, 285} /* GT,AT,U/T,G,E */
04672 , { 280, 250, 270, 250, 240} /* GT,AT,U/T,G,A */
04673 , { 275, 275, 265, 275, 265} /* GT,AT,U/T,G,C */
04674 , { 255, 190, 180, 190, 245} /* GT,AT,U/T,G,G */
04675 , { 295, 295, 285, 295, 285} /* GT,AT,U/T,G,U/T */
04676 }
04677 , { { { 300, 300, 290, 300, 290} /* GT,AT,U/T,U/T,E */
04678 , { 300, 300, 290, 300, 290} /* GT,AT,U/T,U/T,A */
04679 , { 280, 280, 270, 280, 270} /* GT,AT,U/T,U/T,C */
04680 , { 300, 300, 290, 300, 290} /* GT,AT,U/T,U/T,G */
04681 , { 225, 225, 215, 225, 215} /* GT,AT,U/T,U/T,U/T */
04682 }
04683 }
04684 }
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04685 ,{{{ 340, 325, 300, 320, 340} /* GT,UA,E,E,E */
04686 ,{ 340, 325, 300, 310, 340} /* GT,UA,E,E,A */
04687 ,{ 310, 310, 285, 305, 295} /* GT,UA,E,E,C */
04688 ,{ 325, 325, 300, 310, 310} /* GT,UA,E,E,G */
04689 ,{ 325, 325, 300, 320, 310} /* GT,UA,E,E,U/T */
04690 }
04691 ,{{{ 340, 325, 300, 310, 340} /* GT,UA,E,A,E */
04692 ,{ 310, 295, 270, 280, 310} /* GT,UA,E,A,A */
04693 ,{ 280, 280, 250, 260, 260} /* GT,UA,E,A,C */
04694 ,{ 255, 245, 245, 225, 255} /* GT,UA,E,A,G */
04695 ,{ 305, 305, 275, 285, 285} /* GT,UA,E,A,U/T */
04696 }
04697 ,{{{ 325, 325, 300, 320, 310} /* GT,UA,E,C,E */
04698 ,{ 300, 300, 275, 285, 285} /* GT,UA,E,C,A */
04699 ,{ 310, 310, 285, 305, 295} /* GT,UA,E,C,C */
04700 ,{ 325, 325, 300, 310, 310} /* GT,UA,E,C,G */
04701 ,{ 305, 305, 280, 300, 290} /* GT,UA,E,C,U/T */
04702 }
04703 ,{{{ 300, 300, 275, 290, 290} /* GT,UA,E,G,E */
04704 ,{ 260, 250, 250, 230, 260} /* GT,UA,E,G,A */
04705 ,{ 280, 280, 250, 260, 260} /* GT,UA,E,G,C */
04706 ,{ 265, 225, 190, 265, 265} /* GT,UA,E,G,G */
04707 ,{ 300, 300, 270, 280, 280} /* GT,UA,E,G,U/T */
04708 }
04709 ,{{{ 325, 325, 300, 310, 310} /* GT,UA,E,U/T,E */
04710 ,{ 325, 325, 300, 310, 310} /* GT,UA,E,U/T,A */
04711 ,{ 290, 290, 265, 285, 275} /* GT,UA,E,U/T,C */
04712 ,{ 325, 325, 300, 310, 310} /* GT,UA,E,U/T,G */
04713 ,{ 285, 285, 225, 235, 235} /* GT,UA,E,U/T,U/T */
04714 }
04715 }
04716 ,{{{ 315, 300, 300, 295, 300} /* GT,UA,A,E,E */
04717 ,{ 315, 300, 300, 265, 300} /* GT,UA,A,E,A */
04718 ,{ 300, 285, 285, 280, 285} /* GT,UA,A,E,C */
04719 ,{ 315, 300, 300, 265, 300} /* GT,UA,A,E,G */
04720 ,{ 315, 300, 300, 295, 300} /* GT,UA,A,E,U/T */
04721 }
04722 ,{{{ 315, 300, 300, 265, 300} /* GT,UA,A,A,E */
04723 ,{ 285, 270, 270, 235, 270} /* GT,UA,A,A,A */
04724 ,{ 270, 255, 250, 215, 250} /* GT,UA,A,A,C */
04725 ,{ 235, 220, 215, 180, 215} /* GT,UA,A,A,G */
04726 ,{ 295, 280, 275, 240, 275} /* GT,UA,A,A,U/T */
04727 }
04728 ,{{{ 315, 300, 300, 295, 300} /* GT,UA,A,C,E */
04729 ,{ 290, 275, 275, 240, 275} /* GT,UA,A,C,A */
04730 ,{ 300, 285, 285, 280, 285} /* GT,UA,A,C,C */
04731 ,{ 315, 300, 300, 265, 300} /* GT,UA,A,C,G */
04732 ,{ 295, 280, 280, 275, 280} /* GT,UA,A,C,U/T */
04733 }
04734 ,{{{ 290, 275, 270, 245, 270} /* GT,UA,A,G,E */
04735 ,{ 240, 225, 220, 185, 220} /* GT,UA,A,G,A */
04736 ,{ 270, 255, 250, 215, 250} /* GT,UA,A,G,C */
04737 ,{ 235, 195, 190, 220, 190} /* GT,UA,A,G,G */
04738 ,{ 290, 275, 270, 235, 270} /* GT,UA,A,G,U/T */
04739 }
04740 ,{{{ 315, 300, 300, 280, 300} /* GT,UA,A,U/T,E */
04741 ,{ 315, 300, 300, 265, 300} /* GT,UA,A,U/T,A */
04742 ,{ 280, 265, 265, 260, 265} /* GT,UA,A,U/T,C */
04743 ,{ 315, 300, 300, 265, 300} /* GT,UA,A,U/T,G */
04744 ,{ 275, 260, 225, 190, 225} /* GT,UA,A,U/T,U/T */
04745 }
04746 }
04747 ,{{{ 300, 300, 300, 290, 300} /* GT,UA,C,E,E */
04748 ,{ 300, 300, 300, 290, 300} /* GT,UA,C,E,A */
04749 ,{ 285, 285, 285, 275, 285} /* GT,UA,C,E,C */
04750 ,{ 300, 300, 300, 290, 300} /* GT,UA,C,E,G */
04751 ,{ 300, 300, 300, 290, 300} /* GT,UA,C,E,U/T */
04752 }
04753 ,{{{ 300, 300, 300, 290, 300} /* GT,UA,C,A,E */
04754 ,{ 270, 270, 270, 260, 270} /* GT,UA,C,A,A */
04755 ,{ 250, 250, 250, 240, 250} /* GT,UA,C,A,C */
04756 ,{ 245, 215, 245, 205, 245} /* GT,UA,C,A,G */
04757 ,{ 275, 275, 275, 265, 275} /* GT,UA,C,A,U/T */
04758 }
04759 ,{{{ 300, 300, 300, 290, 300} /* GT,UA,C,C,E */
04760 ,{ 275, 275, 275, 265, 275} /* GT,UA,C,C,A */
04761 ,{ 285, 285, 285, 275, 285} /* GT,UA,C,C,C */
04762 ,{ 300, 300, 300, 290, 300} /* GT,UA,C,C,G */
04763 ,{ 280, 280, 280, 270, 280} /* GT,UA,C,C,U/T */
04764 }
04765 ,{{{ 275, 270, 275, 260, 275} /* GT,UA,C,G,E */
04766 ,{ 250, 220, 250, 210, 250} /* GT,UA,C,G,A */
04767 ,{ 250, 250, 250, 240, 250} /* GT,UA,C,G,C */
04768 ,{ 190, 190, 190, 180, 190} /* GT,UA,C,G,G */
04769 ,{ 270, 270, 270, 260, 270} /* GT,UA,C,G,U/T */
04770 }
04771 ,{{{ 300, 300, 300, 290, 300} /* GT,UA,C,U/T,E */

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04772      , {      300,      300,      300,      290,      300} /* GT,UA,C,U/T,A */
04773      , {      265,      265,      265,      255,      265} /* GT,UA,C,U/T,C */
04774      , {      300,      300,      300,      290,      300} /* GT,UA,C,U/T,G */
04775      , {      225,      225,      225,      215,      225} /* GT,UA,C,U/T,U/T */
04776      }
04777      }
04778      ,{{{      310,      275,      290,      270,      310} /* GT,UA,G,E,E */
04779      , {      310,      245,      290,      235,      310} /* GT,UA,G,E,A */
04780      , {      295,      260,      275,      205,      295} /* GT,UA,G,E,C */
04781      , {      310,      245,      290,      270,      310} /* GT,UA,G,E,G */
04782      , {      310,      275,      290,      240,      310} /* GT,UA,G,E,U/T */
04783      }
04784      ,{{{      310,      245,      290,      230,      310} /* GT,UA,G,A,E */
04785      , {      280,      215,      260,      190,      280} /* GT,UA,G,A,A */
04786      , {      260,      195,      240,      170,      260} /* GT,UA,G,A,C */
04787      , {      225,      160,      205,      200,      225} /* GT,UA,G,A,G */
04788      , {      285,      220,      265,      195,      285} /* GT,UA,G,A,U/T */
04789      }
04790      ,{{{      310,      275,      290,      220,      310} /* GT,UA,G,C,E */
04791      , {      285,      220,      265,      195,      285} /* GT,UA,G,C,A */
04792      , {      295,      260,      275,      205,      295} /* GT,UA,G,C,C */
04793      , {      310,      245,      290,      220,      310} /* GT,UA,G,C,G */
04794      , {      290,      255,      270,      200,      290} /* GT,UA,G,C,U/T */
04795      }
04796      ,{{{      290,      225,      260,      265,      280} /* GT,UA,G,G,E */
04797      , {      230,      165,      210,      205,      230} /* GT,UA,G,G,A */
04798      , {      260,      195,      240,      170,      260} /* GT,UA,G,G,C */
04799      , {      265,      200,      180,      240,      200} /* GT,UA,G,G,G */
04800      , {      280,      215,      260,      190,      280} /* GT,UA,G,G,U/T */
04801      }
04802      ,{{{      310,      260,      290,      240,      310} /* GT,UA,G,U/T,E */
04803      , {      310,      245,      290,      220,      310} /* GT,UA,G,U/T,A */
04804      , {      275,      240,      255,      185,      275} /* GT,UA,G,U/T,C */
04805      , {      310,      245,      290,      220,      310} /* GT,UA,G,U/T,G */
04806      , {      235,      170,      215,      210,      235} /* GT,UA,G,U/T,U/T */
04807      }
04808      }
04809      ,{{{      340,      310,      300,      310,      330} /* GT,UA,U/T,E,E */
04810      , {      340,      310,      300,      310,      330} /* GT,UA,U/T,E,A */
04811      , {      295,      295,      285,      295,      285} /* GT,UA,U/T,E,C */
04812      , {      310,      310,      300,      310,      300} /* GT,UA,U/T,E,G */
04813      , {      310,      310,      300,      310,      300} /* GT,UA,U/T,E,U/T */
04814      }
04815      ,{{{      340,      310,      300,      310,      330} /* GT,UA,U/T,A,E */
04816      , {      310,      280,      270,      280,      300} /* GT,UA,U/T,A,A */
04817      , {      260,      260,      250,      260,      250} /* GT,UA,U/T,A,C */
04818      , {      255,      225,      245,      225,      215} /* GT,UA,U/T,A,G */
04819      , {      285,      285,      275,      285,      275} /* GT,UA,U/T,A,U/T */
04820      }
04821      ,{{{      310,      310,      300,      310,      300} /* GT,UA,U/T,C,E */
04822      , {      285,      285,      275,      285,      275} /* GT,UA,U/T,C,A */
04823      , {      295,      295,      285,      295,      285} /* GT,UA,U/T,C,C */
04824      , {      310,      310,      300,      310,      300} /* GT,UA,U/T,C,G */
04825      , {      290,      290,      280,      290,      280} /* GT,UA,U/T,C,U/T */
04826      }
04827      ,{{{      290,      280,      275,      280,      280} /* GT,UA,U/T,G,E */
04828      , {      260,      230,      250,      230,      220} /* GT,UA,U/T,G,A */
04829      , {      260,      260,      250,      260,      250} /* GT,UA,U/T,G,C */
04830      , {      265,      200,      190,      200,      255} /* GT,UA,U/T,G,G */
04831      , {      280,      280,      270,      280,      270} /* GT,UA,U/T,G,U/T */
04832      }
04833      ,{{{      310,      310,      300,      310,      300} /* GT,UA,U/T,U/T,E */
04834      , {      310,      310,      300,      310,      300} /* GT,UA,U/T,U/T,A */
04835      , {      275,      275,      265,      275,      265} /* GT,UA,U/T,U/T,C */
04836      , {      310,      310,      300,      310,      300} /* GT,UA,U/T,U/T,G */
04837      , {      235,      235,      225,      235,      225} /* GT,UA,U/T,U/T,U/T */
04838      }
04839      }
04840      }
04841      ,{{{      370,      370,      345,      340,      370} /* GT,NN,E,E,E */
04842      , {      370,      360,      345,      340,      370} /* GT,NN,E,E,A */
04843      , {      330,      330,      305,      325,      315} /* GT,NN,E,E,C */
04844      , {      340,      340,      315,      325,      325} /* GT,NN,E,E,G */
04845      , {      370,      370,      315,      335,      325} /* GT,NN,E,E,U/T */
04846      }
04847      ,{{{      370,      360,      330,      340,      370} /* GT,NN,E,A,E */
04848      , {      345,      335,      305,      315,      345} /* GT,NN,E,A,A */
04849      , {      330,      330,      305,      315,      315} /* GT,NN,E,A,C */
04850      , {      290,      275,      280,      260,      290} /* GT,NN,E,A,G */
04851      , {      340,      340,      315,      325,      325} /* GT,NN,E,A,U/T */
04852      }
04853      ,{{{      340,      340,      315,      335,      325} /* GT,NN,E,C,E */
04854      , {      330,      330,      305,      315,      315} /* GT,NN,E,C,A */
04855      , {      330,      330,      305,      325,      315} /* GT,NN,E,C,C */
04856      , {      340,      340,      315,      325,      325} /* GT,NN,E,C,G */
04857      , {      330,      330,      305,      325,      315} /* GT,NN,E,C,U/T */
04858      }

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04859 ,{{ 355, 340, 345, 325, 355} /* GT,NN,E,G,E */
04860 ,{ 330, 315, 320, 300, 330} /* GT,NN,E,G,A */
04861 ,{ 325, 325, 300, 310, 310} /* GT,NN,E,G,C */
04862 ,{ 300, 260, 225, 300, 300} /* GT,NN,E,G,G */
04863 ,{ 340, 340, 315, 325, 325} /* GT,NN,E,G,U/T */
04864 }
04865 ,{{ 370, 370, 315, 335, 325} /* GT,NN,E,U/T,E */
04866 ,{ 340, 340, 315, 325, 325} /* GT,NN,E,U/T,A */
04867 ,{ 330, 330, 305, 325, 315} /* GT,NN,E,U/T,C */
04868 ,{ 340, 340, 315, 325, 325} /* GT,NN,E,U/T,G */
04869 ,{ 360, 360, 305, 315, 315} /* GT,NN,E,U/T,U/T */
04870 }
04871 }
04872 ,{{{ 360, 345, 330, 310, 330} /* GT,NN,A,E,E */
04873 ,{ 350, 335, 330, 310, 330} /* GT,NN,A,E,A */
04874 ,{ 320, 305, 305, 300, 305} /* GT,NN,A,E,C */
04875 ,{ 330, 315, 315, 280, 315} /* GT,NN,A,E,G */
04876 ,{ 360, 345, 315, 310, 315} /* GT,NN,A,E,U/T */
04877 }
04878 ,{{ 350, 335, 330, 310, 330} /* GT,NN,A,A,E */
04879 ,{ 325, 310, 305, 285, 305} /* GT,NN,A,A,A */
04880 ,{ 320, 305, 305, 270, 305} /* GT,NN,A,A,C */
04881 ,{ 265, 250, 250, 215, 250} /* GT,NN,A,A,G */
04882 ,{ 330, 315, 315, 280, 315} /* GT,NN,A,A,U/T */
04883 }
04884 ,{{ 330, 315, 315, 310, 315} /* GT,NN,A,C,E */
04885 ,{ 320, 305, 305, 270, 305} /* GT,NN,A,C,A */
04886 ,{ 320, 305, 305, 300, 305} /* GT,NN,A,C,C */
04887 ,{ 330, 315, 315, 280, 315} /* GT,NN,A,C,G */
04888 ,{ 320, 305, 305, 300, 305} /* GT,NN,A,C,U/T */
04889 }
04890 ,{{ 330, 315, 315, 280, 315} /* GT,NN,A,G,E */
04891 ,{ 305, 290, 290, 255, 290} /* GT,NN,A,G,A */
04892 ,{ 315, 300, 300, 265, 300} /* GT,NN,A,G,C */
04893 ,{ 270, 225, 225, 255, 225} /* GT,NN,A,G,G */
04894 ,{ 330, 315, 315, 280, 315} /* GT,NN,A,G,U/T */
04895 }
04896 ,{{ 360, 345, 315, 310, 315} /* GT,NN,A,U/T,E */
04897 ,{ 330, 315, 315, 280, 315} /* GT,NN,A,U/T,A */
04898 ,{ 320, 305, 305, 300, 305} /* GT,NN,A,U/T,C */
04899 ,{ 330, 315, 315, 280, 315} /* GT,NN,A,U/T,G */
04900 ,{ 350, 335, 305, 270, 305} /* GT,NN,A,U/T,U/T */
04901 }
04902 }
04903 ,{{{ 345, 330, 345, 320, 345} /* GT,NN,C,E,E */
04904 ,{ 345, 330, 345, 320, 345} /* GT,NN,C,E,A */
04905 ,{ 305, 305, 305, 295, 305} /* GT,NN,C,E,C */
04906 ,{ 315, 315, 315, 305, 315} /* GT,NN,C,E,G */
04907 ,{ 315, 315, 315, 305, 315} /* GT,NN,C,E,U/T */
04908 }
04909 ,{{ 330, 330, 330, 320, 330} /* GT,NN,C,A,E */
04910 ,{ 305, 305, 305, 295, 305} /* GT,NN,C,A,A */
04911 ,{ 305, 305, 305, 295, 305} /* GT,NN,C,A,C */
04912 ,{ 280, 250, 280, 240, 280} /* GT,NN,C,A,G */
04913 ,{ 315, 315, 315, 305, 315} /* GT,NN,C,A,U/T */
04914 }
04915 ,{{ 315, 315, 315, 305, 315} /* GT,NN,C,C,E */
04916 ,{ 305, 305, 305, 295, 305} /* GT,NN,C,C,A */
04917 ,{ 305, 305, 305, 295, 305} /* GT,NN,C,C,C */
04918 ,{ 315, 315, 315, 305, 315} /* GT,NN,C,C,G */
04919 ,{ 305, 305, 305, 295, 305} /* GT,NN,C,C,U/T */
04920 }
04921 ,{{ 345, 315, 345, 305, 345} /* GT,NN,C,G,E */
04922 ,{ 320, 290, 320, 280, 320} /* GT,NN,C,G,A */
04923 ,{ 300, 300, 300, 290, 300} /* GT,NN,C,G,C */
04924 ,{ 225, 225, 225, 215, 225} /* GT,NN,C,G,G */
04925 ,{ 315, 315, 315, 305, 315} /* GT,NN,C,G,U/T */
04926 }
04927 ,{{ 315, 315, 315, 305, 315} /* GT,NN,C,U/T,E */
04928 ,{ 315, 315, 315, 305, 315} /* GT,NN,C,U/T,A */
04929 ,{ 305, 305, 305, 295, 305} /* GT,NN,C,U/T,C */
04930 ,{ 315, 315, 315, 305, 315} /* GT,NN,C,U/T,G */
04931 ,{ 305, 305, 305, 295, 305} /* GT,NN,C,U/T,U/T */
04932 }
04933 }
04934 ,{{{ 340, 290, 320, 300, 340} /* GT,NN,G,E,E */
04935 ,{ 340, 275, 320, 300, 340} /* GT,NN,G,E,A */
04936 ,{ 315, 280, 295, 225, 315} /* GT,NN,G,E,C */
04937 ,{ 325, 260, 305, 300, 325} /* GT,NN,G,E,G */
04938 ,{ 325, 290, 305, 300, 325} /* GT,NN,G,E,U/T */
04939 }
04940 ,{{ 340, 275, 320, 260, 340} /* GT,NN,G,A,E */
04941 ,{ 315, 250, 295, 225, 315} /* GT,NN,G,A,A */
04942 ,{ 315, 250, 295, 225, 315} /* GT,NN,G,A,C */
04943 ,{ 260, 195, 240, 235, 260} /* GT,NN,G,A,G */
04944 ,{ 325, 260, 305, 235, 325} /* GT,NN,G,A,U/T */
04945 }

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04946 ,{{ 325, 290, 305, 235, 325} /* GT,NN,G,C,E */
04947 ,{ 315, 250, 295, 225, 315} /* GT,NN,G,C,A */
04948 ,{ 315, 280, 295, 225, 315} /* GT,NN,G,C,C */
04949 ,{ 325, 260, 305, 235, 325} /* GT,NN,G,C,G */
04950 ,{ 315, 280, 295, 225, 315} /* GT,NN,G,C,U/T */
04951 }
04952 ,{{ 325, 260, 305, 300, 325} /* GT,NN,G,G,E */
04953 ,{ 300, 235, 280, 275, 300} /* GT,NN,G,G,A */
04954 ,{ 310, 245, 290, 220, 310} /* GT,NN,G,G,C */
04955 ,{ 300, 235, 215, 275, 235} /* GT,NN,G,G,G */
04956 ,{ 325, 260, 305, 235, 325} /* GT,NN,G,G,U/T */
04957 }
04958 ,{{ 325, 290, 305, 300, 325} /* GT,NN,G,U/T,E */
04959 ,{ 325, 260, 305, 235, 325} /* GT,NN,G,U/T,A */
04960 ,{ 315, 280, 295, 225, 315} /* GT,NN,G,U/T,C */
04961 ,{ 325, 260, 305, 235, 325} /* GT,NN,G,U/T,G */
04962 ,{ 315, 250, 295, 290, 315} /* GT,NN,G,U/T,U/T */
04963 }
04964 }
04965 ,{{{ 370, 340, 345, 340, 360} /* GT,NN,U/T,E,E */
04966 ,{ 370, 340, 345, 340, 360} /* GT,NN,U/T,E,A */
04967 ,{ 315, 315, 305, 315, 305} /* GT,NN,U/T,E,C */
04968 ,{ 325, 325, 315, 325, 315} /* GT,NN,U/T,E,G */
04969 ,{ 325, 325, 315, 325, 315} /* GT,NN,U/T,E,U/T */
04970 }
04971 ,{{ 370, 340, 330, 340, 360} /* GT,NN,U/T,A,E */
04972 ,{ 345, 315, 305, 315, 335} /* GT,NN,U/T,A,A */
04973 ,{ 315, 315, 305, 315, 305} /* GT,NN,U/T,A,C */
04974 ,{ 290, 260, 280, 260, 250} /* GT,NN,U/T,A,G */
04975 ,{ 325, 325, 315, 325, 315} /* GT,NN,U/T,A,U/T */
04976 }
04977 ,{{ 325, 325, 315, 325, 315} /* GT,NN,U/T,C,E */
04978 ,{ 315, 315, 305, 315, 305} /* GT,NN,U/T,C,A */
04979 ,{ 315, 315, 305, 315, 305} /* GT,NN,U/T,C,C */
04980 ,{ 325, 325, 315, 325, 315} /* GT,NN,U/T,C,G */
04981 ,{ 315, 315, 305, 315, 305} /* GT,NN,U/T,C,U/T */
04982 }
04983 ,{{ 355, 325, 345, 325, 315} /* GT,NN,U/T,G,E */
04984 ,{ 330, 300, 320, 300, 290} /* GT,NN,U/T,G,A */
04985 ,{ 310, 310, 300, 310, 300} /* GT,NN,U/T,G,C */
04986 ,{ 300, 235, 225, 235, 290} /* GT,NN,U/T,G,G */
04987 ,{ 325, 325, 315, 325, 315} /* GT,NN,U/T,G,U/T */
04988 }
04989 ,{{ 325, 325, 315, 325, 315} /* GT,NN,U/T,U/T,E */
04990 ,{ 325, 325, 315, 325, 315} /* GT,NN,U/T,U/T,A */
04991 ,{ 315, 315, 305, 315, 305} /* GT,NN,U/T,U/T,C */
04992 ,{ 325, 325, 315, 325, 315} /* GT,NN,U/T,U/T,G */
04993 ,{ 315, 315, 305, 315, 305} /* GT,NN,U/T,U/T,U/T */
04994 }
04995 }
04996 }
04997 }
04998 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E,E,E */
04999 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,E,A */
05000 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,E,C */
05001 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,E,G */
05002 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,E,U/T */
05003 }
05004 ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,A,E */
05005 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,A,A */
05006 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,A,C */
05007 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,A,G */
05008 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,A,U/T */
05009 }
05010 ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,C,E */
05011 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,C,A */
05012 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,C,C */
05013 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,C,G */
05014 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,C,U/T */
05015 }
05016 ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,G,E */
05017 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,G,A */
05018 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,G,C */
05019 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,G,G */
05020 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,G,U/T */
05021 }
05022 ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,U/T,E */
05023 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,U/T,A */
05024 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,U/T,C */
05025 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,U/T,G */
05026 ,{ INF, INF, INF, INF, INF} /* UG,NP,E,U/T,U/T */
05027 }
05028 }
05029 ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,E,E */
05030 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,E,A */
05031 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,E,C */
05032 ,{ INF, INF, INF, INF, INF} /* UG,NP,A,E,G */

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05033 , { INF, INF, INF, INF, INF} /* UG,NP,A,E,U/T */
05034 }
05035 , { { INF, INF, INF, INF, INF} /* UG,NP,A,A,E */
05036 , { INF, INF, INF, INF, INF} /* UG,NP,A,A,A */
05037 , { INF, INF, INF, INF, INF} /* UG,NP,A,A,C */
05038 , { INF, INF, INF, INF, INF} /* UG,NP,A,A,G */
05039 , { INF, INF, INF, INF, INF} /* UG,NP,A,A,U/T */
05040 }
05041 , { { INF, INF, INF, INF, INF} /* UG,NP,A,C,E */
05042 , { INF, INF, INF, INF, INF} /* UG,NP,A,C,A */
05043 , { INF, INF, INF, INF, INF} /* UG,NP,A,C,C */
05044 , { INF, INF, INF, INF, INF} /* UG,NP,A,C,G */
05045 , { INF, INF, INF, INF, INF} /* UG,NP,A,C,U/T */
05046 }
05047 , { { INF, INF, INF, INF, INF} /* UG,NP,A,G,E */
05048 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,A */
05049 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,C */
05050 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,G */
05051 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,U/T */
05052 }
05053 , { { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,E */
05054 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,A */
05055 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,C */
05056 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,G */
05057 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,U/T */
05058 }
05059 }
05060 , { { { INF, INF, INF, INF, INF} /* UG,NP,C,E,E */
05061 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,A */
05062 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,C */
05063 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,G */
05064 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,U/T */
05065 }
05066 , { { INF, INF, INF, INF, INF} /* UG,NP,C,A,E */
05067 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,A */
05068 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,C */
05069 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,G */
05070 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,U/T */
05071 }
05072 , { { INF, INF, INF, INF, INF} /* UG,NP,C,C,E */
05073 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,A */
05074 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,C */
05075 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,G */
05076 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,U/T */
05077 }
05078 , { { INF, INF, INF, INF, INF} /* UG,NP,C,G,E */
05079 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,A */
05080 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,C */
05081 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,G */
05082 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,U/T */
05083 }
05084 , { { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,E */
05085 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,A */
05086 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,C */
05087 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,G */
05088 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,U/T */
05089 }
05090 }
05091 , { { { INF, INF, INF, INF, INF} /* UG,NP,G,E,E */
05092 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,A */
05093 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,C */
05094 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,G */
05095 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,U/T */
05096 }
05097 , { { INF, INF, INF, INF, INF} /* UG,NP,G,A,E */
05098 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,A */
05099 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,C */
05100 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,G */
05101 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,U/T */
05102 }
05103 , { { INF, INF, INF, INF, INF} /* UG,NP,G,C,E */
05104 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,A */
05105 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,C */
05106 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,G */
05107 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,U/T */
05108 }
05109 , { { INF, INF, INF, INF, INF} /* UG,NP,G,G,E */
05110 , { INF, INF, INF, INF, INF} /* UG,NP,G,G,A */
05111 , { INF, INF, INF, INF, INF} /* UG,NP,G,G,C */
05112 , { INF, INF, INF, INF, INF} /* UG,NP,G,G,G */
05113 , { INF, INF, INF, INF, INF} /* UG,NP,G,G,U/T */
05114 }
05115 , { { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,E */
05116 , { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,A */
05117 , { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,C */
05118 , { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,G */
05119 , { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,U/T */

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05120     }
05121     }
05122     ,{{{   INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,E,E */
05123     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,E,A */
05124     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,E,C */
05125     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,E,G */
05126     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,E,U/T */
05127     }
05128     ,{{{   INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,A,E */
05129     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,A,A */
05130     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,A,C */
05131     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,A,G */
05132     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,A,U/T */
05133     }
05134     ,{{{   INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,C,E */
05135     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,C,A */
05136     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,C,C */
05137     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,C,G */
05138     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,C,U/T */
05139     }
05140     ,{{{   INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,G,E */
05141     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,G,A */
05142     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,G,C */
05143     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,G,G */
05144     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,G,U/T */
05145     }
05146     ,{{{   INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,U/T,E */
05147     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,U/T,A */
05148     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,U/T,C */
05149     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,U/T,G */
05150     ,{     INF,   INF,   INF,   INF,   INF} /* UG,NP,U/T,U/T,U/T */
05151     }
05152     }
05153     }
05154     ,{{{   300,   265,   255,   300,   275} /* UG,CG,E,E,E */
05155     ,{     270,   255,   245,   270,   265} /* UG,CG,E,E,A */
05156     ,{     285,   240,   230,   285,   240} /* UG,CG,E,E,C */
05157     ,{     265,   250,   240,   265,   250} /* UG,CG,E,E,G */
05158     ,{     295,   250,   240,   295,   250} /* UG,CG,E,E,U/T */
05159     }
05160     ,{{{   275,   245,   235,   260,   275} /* UG,CG,E,A,E */
05161     ,{     235,   205,   195,   220,   235} /* UG,CG,E,A,A */
05162     ,{     230,   215,   205,   230,   215} /* UG,CG,E,A,C */
05163     ,{     190,   160,   180,   175,   190} /* UG,CG,E,A,G */
05164     ,{     255,   240,   230,   255,   240} /* UG,CG,E,A,U/T */
05165     }
05166     ,{{{   285,   250,   240,   285,   250} /* UG,CG,E,C,E */
05167     ,{     255,   240,   230,   255,   240} /* UG,CG,E,C,A */
05168     ,{     285,   240,   230,   285,   240} /* UG,CG,E,C,C */
05169     ,{     235,   220,   210,   235,   220} /* UG,CG,E,C,G */
05170     ,{     270,   225,   215,   270,   225} /* UG,CG,E,C,U/T */
05171     }
05172     ,{{{   245,   230,   220,   245,   230} /* UG,CG,E,G,E */
05173     ,{     190,   160,   180,   175,   190} /* UG,CG,E,G,A */
05174     ,{     225,   210,   200,   225,   210} /* UG,CG,E,G,C */
05175     ,{     215,   135,   125,   215,   200} /* UG,CG,E,G,G */
05176     ,{     245,   230,   220,   245,   230} /* UG,CG,E,G,U/T */
05177     }
05178     ,{{{   285,   255,   245,   285,   255} /* UG,CG,E,U/T,E */
05179     ,{     270,   255,   245,   270,   255} /* UG,CG,E,U/T,A */
05180     ,{     270,   225,   215,   270,   225} /* UG,CG,E,U/T,C */
05181     ,{     265,   250,   240,   265,   250} /* UG,CG,E,U/T,G */
05182     ,{     185,   180,   160,   185,   170} /* UG,CG,E,U/T,U/T */
05183     }
05184     }
05185     ,{{{   300,   220,   255,   275,   265} /* UG,CG,A,E,E */
05186     ,{     270,   210,   245,   245,   255} /* UG,CG,A,E,A */
05187     ,{     285,   200,   230,   260,   240} /* UG,CG,A,E,C */
05188     ,{     265,   205,   240,   240,   250} /* UG,CG,A,E,G */
05189     ,{     295,   205,   240,   270,   250} /* UG,CG,A,E,U/T */
05190     }
05191     ,{{{   260,   200,   235,   235,   245} /* UG,CG,A,A,E */
05192     ,{     220,   160,   195,   195,   205} /* UG,CG,A,A,A */
05193     ,{     230,   175,   205,   205,   215} /* UG,CG,A,A,C */
05194     ,{     175,   120,   150,   150,   160} /* UG,CG,A,A,G */
05195     ,{     255,   200,   230,   230,   240} /* UG,CG,A,A,U/T */
05196     }
05197     ,{{{   285,   205,   240,   260,   250} /* UG,CG,A,C,E */
05198     ,{     255,   195,   230,   230,   240} /* UG,CG,A,C,A */
05199     ,{     285,   200,   230,   260,   240} /* UG,CG,A,C,C */
05200     ,{     235,   175,   210,   210,   220} /* UG,CG,A,C,G */
05201     ,{     270,   180,   215,   245,   225} /* UG,CG,A,C,U/T */
05202     }
05203     ,{{{   245,   190,   220,   220,   230} /* UG,CG,A,G,E */
05204     ,{     175,   120,   150,   150,   160} /* UG,CG,A,G,A */
05205     ,{     225,   170,   200,   200,   210} /* UG,CG,A,G,C */
05206     ,{     215,   90,   125,   190,   135} /* UG,CG,A,G,G */

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05207      , {      245,      190,      220,      220,      230} /* UG,CG,A,G,U/T */
05208      }
05209      , {{      285,      210,      245,      260,      255} /* UG,CG,A,U/T,E */
05210      , {      270,      210,      245,      245,      255} /* UG,CG,A,U/T,A */
05211      , {      270,      180,      215,      245,      225} /* UG,CG,A,U/T,C */
05212      , {      265,      205,      240,      240,      250} /* UG,CG,A,U/T,G */
05213      , {      185,      155,      160,      160,      170} /* UG,CG,A,U/T,U/T */
05214      }
05215      }
05216      , {{{      255,      255,      255,      250,      255} /* UG,CG,C,E,E */
05217      , {      245,      245,      245,      240,      245} /* UG,CG,C,E,A */
05218      , {      230,      230,      230,      225,      230} /* UG,CG,C,E,C */
05219      , {      240,      240,      240,      235,      240} /* UG,CG,C,E,G */
05220      , {      240,      240,      240,      235,      240} /* UG,CG,C,E,U/T */
05221      }
05222      , {{      235,      235,      235,      230,      235} /* UG,CG,C,A,E */
05223      , {      195,      195,      195,      190,      195} /* UG,CG,C,A,A */
05224      , {      205,      205,      205,      200,      205} /* UG,CG,C,A,C */
05225      , {      180,      150,      180,      145,      180} /* UG,CG,C,A,G */
05226      , {      230,      230,      230,      225,      230} /* UG,CG,C,A,U/T */
05227      }
05228      , {{{      240,      240,      240,      235,      240} /* UG,CG,C,C,E */
05229      , {      230,      230,      230,      225,      230} /* UG,CG,C,C,A */
05230      , {      230,      230,      230,      225,      230} /* UG,CG,C,C,C */
05231      , {      210,      210,      210,      205,      210} /* UG,CG,C,C,G */
05232      , {      215,      215,      215,      210,      215} /* UG,CG,C,C,U/T */
05233      }
05234      , {{{      220,      220,      220,      215,      220} /* UG,CG,C,G,E */
05235      , {      180,      150,      180,      145,      180} /* UG,CG,C,G,A */
05236      , {      200,      200,      200,      195,      200} /* UG,CG,C,G,C */
05237      , {      125,      125,      125,      120,      125} /* UG,CG,C,G,G */
05238      , {      220,      220,      220,      215,      220} /* UG,CG,C,G,U/T */
05239      }
05240      , {{{      245,      245,      245,      240,      245} /* UG,CG,C,U/T,E */
05241      , {      245,      245,      245,      240,      245} /* UG,CG,C,U/T,A */
05242      , {      215,      215,      215,      210,      215} /* UG,CG,C,U/T,C */
05243      , {      240,      240,      240,      235,      240} /* UG,CG,C,U/T,G */
05244      , {      160,      160,      160,      155,      160} /* UG,CG,C,U/T,U/T */
05245      }
05246      }
05247      , {{{      265,      195,      240,      210,      265} /* UG,CG,G,E,E */
05248      , {      255,      160,      230,      165,      255} /* UG,CG,G,E,A */
05249      , {      240,      180,      215,      150,      240} /* UG,CG,G,E,C */
05250      , {      250,      155,      225,      195,      250} /* UG,CG,G,E,G */
05251      , {      250,      185,      225,      180,      250} /* UG,CG,G,E,U/T */
05252      }
05253      , {{{      245,      150,      220,      170,      245} /* UG,CG,G,A,E */
05254      , {      205,      110,      180,      115,      205} /* UG,CG,G,A,A */
05255      , {      215,      125,      190,      125,      215} /* UG,CG,G,A,C */
05256      , {      160,      70,      135,      135,      160} /* UG,CG,G,A,G */
05257      , {      240,      150,      215,      150,      240} /* UG,CG,G,A,U/T */
05258      }
05259      , {{{      250,      180,      225,      160,      250} /* UG,CG,G,C,E */
05260      , {      240,      145,      215,      150,      240} /* UG,CG,G,C,A */
05261      , {      240,      180,      215,      150,      240} /* UG,CG,G,C,C */
05262      , {      220,      125,      195,      130,      220} /* UG,CG,G,C,G */
05263      , {      225,      160,      200,      135,      225} /* UG,CG,G,C,U/T */
05264      }
05265      , {{{      230,      140,      205,      200,      230} /* UG,CG,G,G,E */
05266      , {      160,      70,      135,      135,      160} /* UG,CG,G,G,A */
05267      , {      210,      120,      185,      120,      210} /* UG,CG,G,G,C */
05268      , {      200,      105,      110,      175,      135} /* UG,CG,G,G,G */
05269      , {      230,      140,      205,      140,      230} /* UG,CG,G,G,U/T */
05270      }
05271      , {{{      255,      175,      230,      170,      255} /* UG,CG,G,U/T,E */
05272      , {      255,      160,      230,      165,      255} /* UG,CG,G,U/T,A */
05273      , {      225,      160,      200,      135,      225} /* UG,CG,G,U/T,C */
05274      , {      250,      155,      225,      160,      250} /* UG,CG,G,U/T,G */
05275      , {      170,      80,      145,      145,      170} /* UG,CG,G,U/T,U/T */
05276      }
05277      }
05278      , {{{      275,      265,      255,      265,      265} /* UG,CG,U/T,E,E */
05279      , {      265,      255,      245,      255,      255} /* UG,CG,U/T,E,A */
05280      , {      240,      240,      230,      240,      230} /* UG,CG,U/T,E,C */
05281      , {      250,      250,      240,      250,      240} /* UG,CG,U/T,E,G */
05282      , {      250,      250,      240,      250,      240} /* UG,CG,U/T,E,U/T */
05283      }
05284      , {{{      275,      245,      235,      245,      265} /* UG,CG,U/T,A,E */
05285      , {      235,      205,      195,      205,      225} /* UG,CG,U/T,A,A */
05286      , {      215,      215,      205,      215,      205} /* UG,CG,U/T,A,C */
05287      , {      190,      160,      180,      160,      150} /* UG,CG,U/T,A,G */
05288      , {      240,      240,      230,      240,      230} /* UG,CG,U/T,A,U/T */
05289      }
05290      , {{{      250,      250,      240,      250,      240} /* UG,CG,U/T,C,E */
05291      , {      240,      240,      230,      240,      230} /* UG,CG,U/T,C,A */
05292      , {      240,      240,      230,      240,      230} /* UG,CG,U/T,C,C */
05293      , {      220,      220,      210,      220,      210} /* UG,CG,U/T,C,G */

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05294 , { 225, 225, 215, 225, 215} /* UG,CG,U/T,C,U/T */
05295 }
05296 , { { 230, 230, 220, 230, 220} /* UG,CG,U/T,G,E */
05297 , { 190, 160, 180, 160, 150} /* UG,CG,U/T,G,A */
05298 , { 210, 210, 200, 210, 200} /* UG,CG,U/T,G,C */
05299 , { 200, 135, 125, 135, 190} /* UG,CG,U/T,G,G */
05300 , { 230, 230, 220, 230, 220} /* UG,CG,U/T,G,U/T */
05301 }
05302 , { { 255, 255, 245, 255, 245} /* UG,CG,U/T,U/T,E */
05303 , { 255, 255, 245, 255, 245} /* UG,CG,U/T,U/T,A */
05304 , { 225, 225, 215, 225, 215} /* UG,CG,U/T,U/T,C */
05305 , { 250, 250, 240, 250, 240} /* UG,CG,U/T,U/T,G */
05306 , { 170, 170, 160, 170, 160} /* UG,CG,U/T,U/T,U/T */
05307 }
05308 }
05309 }
05310 , { { { 280, 245, 235, 280, 275} /* UG,GC,E,E,E */
05311 , { 265, 235, 225, 250, 265} /* UG,GC,E,E,A */
05312 , { 265, 220, 210, 265, 220} /* UG,GC,E,E,C */
05313 , { 245, 230, 220, 245, 230} /* UG,GC,E,E,G */
05314 , { 275, 230, 220, 275, 230} /* UG,GC,E,E,U/T */
05315 }
05316 , { { 270, 240, 230, 255, 270} /* UG,GC,E,A,E */
05317 , { 235, 205, 195, 220, 235} /* UG,GC,E,A,A */
05318 , { 225, 210, 200, 225, 210} /* UG,GC,E,A,C */
05319 , { 140, 110, 130, 125, 140} /* UG,GC,E,A,G */
05320 , { 245, 230, 220, 245, 230} /* UG,GC,E,A,U/T */
05321 }
05322 , { { 265, 220, 210, 265, 220} /* UG,GC,E,C,E */
05323 , { 220, 205, 195, 220, 205} /* UG,GC,E,C,A */
05324 , { 265, 220, 210, 265, 220} /* UG,GC,E,C,C */
05325 , { 220, 205, 195, 220, 205} /* UG,GC,E,C,G */
05326 , { 260, 215, 205, 260, 215} /* UG,GC,E,C,U/T */
05327 }
05328 , { { 245, 230, 220, 245, 230} /* UG,GC,E,G,E */
05329 , { 170, 140, 160, 155, 170} /* UG,GC,E,G,A */
05330 , { 200, 185, 175, 200, 185} /* UG,GC,E,G,C */
05331 , { 210, 130, 120, 210, 195} /* UG,GC,E,G,G */
05332 , { 245, 230, 220, 245, 230} /* UG,GC,E,G,U/T */
05333 }
05334 , { { 280, 235, 225, 280, 235} /* UG,GC,E,U/T,E */
05335 , { 235, 220, 210, 235, 220} /* UG,GC,E,U/T,A */
05336 , { 260, 215, 205, 260, 215} /* UG,GC,E,U/T,C */
05337 , { 245, 230, 220, 245, 230} /* UG,GC,E,U/T,G */
05338 , { 180, 180, 155, 180, 165} /* UG,GC,E,U/T,U/T */
05339 }
05340 }
05341 , { { { 280, 210, 235, 255, 245} /* UG,GC,A,E,E */
05342 , { 250, 200, 225, 225, 235} /* UG,GC,A,E,A */
05343 , { 265, 180, 210, 240, 220} /* UG,GC,A,E,C */
05344 , { 245, 190, 220, 220, 230} /* UG,GC,A,E,G */
05345 , { 275, 185, 220, 250, 230} /* UG,GC,A,E,U/T */
05346 }
05347 , { { 255, 205, 230, 230, 240} /* UG,GC,A,A,E */
05348 , { 220, 170, 195, 195, 205} /* UG,GC,A,A,A */
05349 , { 225, 165, 200, 200, 210} /* UG,GC,A,A,C */
05350 , { 125, 70, 100, 100, 110} /* UG,GC,A,A,G */
05351 , { 245, 185, 220, 220, 230} /* UG,GC,A,A,U/T */
05352 }
05353 , { { 265, 175, 210, 240, 220} /* UG,GC,A,C,E */
05354 , { 220, 165, 195, 195, 205} /* UG,GC,A,C,A */
05355 , { 265, 175, 210, 240, 220} /* UG,GC,A,C,C */
05356 , { 220, 165, 195, 195, 205} /* UG,GC,A,C,G */
05357 , { 260, 170, 205, 235, 215} /* UG,GC,A,C,U/T */
05358 }
05359 , { { 245, 185, 220, 220, 230} /* UG,GC,A,G,E */
05360 , { 155, 100, 130, 130, 140} /* UG,GC,A,G,A */
05361 , { 200, 140, 175, 175, 185} /* UG,GC,A,G,C */
05362 , { 210, 85, 120, 185, 130} /* UG,GC,A,G,G */
05363 , { 245, 185, 220, 220, 230} /* UG,GC,A,G,U/T */
05364 }
05365 , { { 280, 195, 225, 255, 235} /* UG,GC,A,U/T,E */
05366 , { 235, 180, 210, 210, 220} /* UG,GC,A,U/T,A */
05367 , { 260, 175, 205, 235, 215} /* UG,GC,A,U/T,C */
05368 , { 245, 190, 220, 220, 230} /* UG,GC,A,U/T,G */
05369 , { 180, 155, 155, 155, 165} /* UG,GC,A,U/T,U/T */
05370 }
05371 }
05372 , { { { 235, 235, 235, 230, 235} /* UG,GC,C,E,E */
05373 , { 225, 225, 225, 220, 225} /* UG,GC,C,E,A */
05374 , { 210, 210, 210, 205, 210} /* UG,GC,C,E,C */
05375 , { 220, 220, 220, 215, 220} /* UG,GC,C,E,G */
05376 , { 220, 220, 220, 215, 220} /* UG,GC,C,E,U/T */
05377 }
05378 , { { 230, 230, 230, 225, 230} /* UG,GC,C,A,E */
05379 , { 195, 195, 195, 190, 195} /* UG,GC,C,A,A */
05380 , { 200, 200, 200, 195, 200} /* UG,GC,C,A,C */

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05381      , {    130,    100,    130,    95,    130} /* UG,GC,C,A,G */
05382      , {    220,    220,    220,    215,    220} /* UG,GC,C,A,U/T */
05383      }
05384      , {{    210,    210,    210,    205,    210} /* UG,GC,C,C,E */
05385      , {    195,    195,    195,    190,    195} /* UG,GC,C,C,A */
05386      , {    210,    210,    210,    205,    210} /* UG,GC,C,C,C */
05387      , {    195,    195,    195,    190,    195} /* UG,GC,C,C,G */
05388      , {    205,    205,    205,    200,    205} /* UG,GC,C,C,U/T */
05389      }
05390      , {{    220,    220,    220,    215,    220} /* UG,GC,C,G,E */
05391      , {    160,    130,    160,    125,    160} /* UG,GC,C,G,A */
05392      , {    175,    175,    175,    170,    175} /* UG,GC,C,G,C */
05393      , {    120,    120,    120,    115,    120} /* UG,GC,C,G,G */
05394      , {    220,    220,    220,    215,    220} /* UG,GC,C,G,U/T */
05395      }
05396      , {{    225,    225,    225,    220,    225} /* UG,GC,C,U/T,E */
05397      , {    210,    210,    210,    205,    210} /* UG,GC,C,U/T,A */
05398      , {    205,    205,    205,    200,    205} /* UG,GC,C,U/T,C */
05399      , {    220,    220,    220,    215,    220} /* UG,GC,C,U/T,G */
05400      , {    155,    155,    155,    150,    155} /* UG,GC,C,U/T,U/T */
05401      }
05402      }
05403      , {{{    245,    175,    220,    205,    245} /* UG,GC,G,E,E */
05404      , {    235,    145,    210,    145,    235} /* UG,GC,G,E,A */
05405      , {    220,    160,    195,    130,    220} /* UG,GC,G,E,C */
05406      , {    230,    140,    205,    205,    230} /* UG,GC,G,E,G */
05407      , {    230,    165,    205,    165,    230} /* UG,GC,G,E,U/T */
05408      }
05409      , {{    240,    150,    215,    150,    240} /* UG,GC,G,A,E */
05410      , {    205,    115,    180,    115,    205} /* UG,GC,G,A,A */
05411      , {    210,    115,    185,    120,    210} /* UG,GC,G,A,C */
05412      , {    110,    20,    85,    85,    110} /* UG,GC,G,A,G */
05413      , {    230,    135,    205,    140,    230} /* UG,GC,G,A,U/T */
05414      }
05415      , {{    220,    155,    195,    130,    220} /* UG,GC,G,C,E */
05416      , {    205,    115,    180,    115,    205} /* UG,GC,G,C,A */
05417      , {    220,    155,    195,    130,    220} /* UG,GC,G,C,C */
05418      , {    205,    115,    180,    115,    205} /* UG,GC,G,C,G */
05419      , {    215,    150,    190,    125,    215} /* UG,GC,G,C,U/T */
05420      }
05421      , {{    230,    135,    205,    200,    230} /* UG,GC,G,G,E */
05422      , {    140,    50,    115,    115,    140} /* UG,GC,G,G,A */
05423      , {    185,    90,    160,    95,    185} /* UG,GC,G,G,C */
05424      , {    195,    100,    105,    170,    130} /* UG,GC,G,G,G */
05425      , {    230,    135,    205,    140,    230} /* UG,GC,G,G,U/T */
05426      }
05427      , {{    235,    175,    210,    170,    235} /* UG,GC,G,U/T,E */
05428      , {    220,    130,    195,    130,    220} /* UG,GC,G,U/T,A */
05429      , {    215,    155,    190,    125,    215} /* UG,GC,G,U/T,C */
05430      , {    230,    140,    205,    140,    230} /* UG,GC,G,U/T,G */
05431      , {    165,    75,    140,    140,    165} /* UG,GC,G,U/T,U/T */
05432      }
05433      }
05434      , {{{    275,    245,    235,    245,    265} /* UG,GC,U/T,E,E */
05435      , {    265,    235,    225,    235,    255} /* UG,GC,U/T,E,A */
05436      , {    220,    220,    210,    220,    210} /* UG,GC,U/T,E,C */
05437      , {    230,    230,    220,    230,    220} /* UG,GC,U/T,E,G */
05438      , {    230,    230,    220,    230,    220} /* UG,GC,U/T,E,U/T */
05439      }
05440      , {{    270,    240,    230,    240,    260} /* UG,GC,U/T,A,E */
05441      , {    235,    205,    195,    205,    225} /* UG,GC,U/T,A,A */
05442      , {    210,    210,    200,    210,    200} /* UG,GC,U/T,A,C */
05443      , {    140,    110,    130,    110,    100} /* UG,GC,U/T,A,G */
05444      , {    230,    230,    220,    230,    220} /* UG,GC,U/T,A,U/T */
05445      }
05446      , {{    220,    220,    210,    220,    210} /* UG,GC,U/T,C,E */
05447      , {    205,    205,    195,    205,    195} /* UG,GC,U/T,C,A */
05448      , {    220,    220,    210,    220,    210} /* UG,GC,U/T,C,C */
05449      , {    205,    205,    195,    205,    195} /* UG,GC,U/T,C,G */
05450      , {    215,    215,    205,    215,    205} /* UG,GC,U/T,C,U/T */
05451      }
05452      , {{    230,    230,    220,    230,    220} /* UG,GC,U/T,G,E */
05453      , {    170,    140,    160,    140,    130} /* UG,GC,U/T,G,A */
05454      , {    185,    185,    175,    185,    175} /* UG,GC,U/T,G,C */
05455      , {    195,    130,    120,    130,    185} /* UG,GC,U/T,G,G */
05456      , {    230,    230,    220,    230,    220} /* UG,GC,U/T,G,U/T */
05457      }
05458      , {{    235,    235,    225,    235,    225} /* UG,GC,U/T,U/T,E */
05459      , {    220,    220,    210,    220,    210} /* UG,GC,U/T,U/T,A */
05460      , {    215,    215,    205,    215,    205} /* UG,GC,U/T,U/T,C */
05461      , {    230,    230,    220,    230,    220} /* UG,GC,U/T,U/T,G */
05462      , {    165,    165,    155,    165,    155} /* UG,GC,U/T,U/T,U/T */
05463      }
05464      }
05465      }
05466      , {{{    355,    335,    315,    355,    355} /* UG,GT,E,E,E */
05467      , {    345,    325,    305,    330,    345} /* UG,GT,E,E,A */

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05468 , { 345, 300, 290, 345, 300} /* UG,GT,E,E,C */
05469 , { 325, 310, 300, 325, 310} /* UG,GT,E,E,G */
05470 , { 355, 320, 300, 355, 310} /* UG,GT,E,E,U/T */
05471 }
05472 , {{ 355, 335, 315, 340, 355} /* UG,GT,E,A,E */
05473 , { 330, 310, 290, 315, 330} /* UG,GT,E,A,A */
05474 , { 315, 300, 290, 315, 300} /* UG,GT,E,A,C */
05475 , { 275, 245, 265, 260, 275} /* UG,GT,E,A,G */
05476 , { 325, 310, 300, 325, 310} /* UG,GT,E,A,U/T */
05477 }
05478 , {{ 345, 300, 290, 345, 300} /* UG,GT,E,C,E */
05479 , { 315, 300, 290, 315, 300} /* UG,GT,E,C,A */
05480 , { 345, 300, 290, 345, 300} /* UG,GT,E,C,C */
05481 , { 305, 290, 280, 305, 290} /* UG,GT,E,C,G */
05482 , { 345, 300, 290, 345, 300} /* UG,GT,E,C,U/T */
05483 }
05484 , {{ 335, 335, 310, 325, 320} /* UG,GT,E,G,E */
05485 , { 310, 310, 285, 280, 295} /* UG,GT,E,G,A */
05486 , { 305, 290, 280, 305, 290} /* UG,GT,E,G,C */
05487 , { 300, 220, 210, 300, 285} /* UG,GT,E,G,G */
05488 , { 325, 310, 300, 325, 310} /* UG,GT,E,G,U/T */
05489 }
05490 , {{ 355, 320, 300, 355, 310} /* UG,GT,E,U/T,E */
05491 , { 315, 300, 290, 315, 300} /* UG,GT,E,U/T,A */
05492 , { 345, 300, 290, 345, 300} /* UG,GT,E,U/T,C */
05493 , { 325, 310, 300, 325, 310} /* UG,GT,E,U/T,G */
05494 , { 315, 310, 290, 315, 300} /* UG,GT,E,U/T,U/T */
05495 }
05496 }
05497 , {{{ 355, 310, 315, 330, 325} /* UG,GT,A,E,E */
05498 , { 330, 300, 305, 305, 315} /* UG,GT,A,E,A */
05499 , { 345, 255, 290, 320, 300} /* UG,GT,A,E,C */
05500 , { 325, 265, 300, 300, 310} /* UG,GT,A,E,G */
05501 , { 355, 295, 300, 330, 310} /* UG,GT,A,E,U/T */
05502 }
05503 , {{ 340, 310, 315, 315, 325} /* UG,GT,A,A,E */
05504 , { 315, 285, 290, 290, 300} /* UG,GT,A,A,A */
05505 , { 315, 255, 290, 290, 300} /* UG,GT,A,A,C */
05506 , { 260, 200, 235, 235, 245} /* UG,GT,A,A,G */
05507 , { 325, 265, 300, 300, 310} /* UG,GT,A,A,U/T */
05508 }
05509 , {{ 345, 255, 290, 320, 300} /* UG,GT,A,C,E */
05510 , { 315, 255, 290, 290, 300} /* UG,GT,A,C,A */
05511 , { 345, 255, 290, 320, 300} /* UG,GT,A,C,C */
05512 , { 305, 245, 280, 280, 290} /* UG,GT,A,C,G */
05513 , { 345, 255, 290, 320, 300} /* UG,GT,A,C,U/T */
05514 }
05515 , {{ 335, 310, 300, 300, 310} /* UG,GT,A,G,E */
05516 , { 310, 285, 255, 255, 265} /* UG,GT,A,G,A */
05517 , { 305, 245, 280, 280, 290} /* UG,GT,A,G,C */
05518 , { 300, 175, 210, 275, 220} /* UG,GT,A,G,G */
05519 , { 325, 265, 300, 300, 310} /* UG,GT,A,G,U/T */
05520 }
05521 , {{{ 355, 295, 300, 330, 310} /* UG,GT,A,U/T,E */
05522 , { 315, 255, 290, 290, 300} /* UG,GT,A,U/T,A */
05523 , { 345, 255, 290, 320, 300} /* UG,GT,A,U/T,C */
05524 , { 325, 265, 300, 300, 310} /* UG,GT,A,U/T,G */
05525 , { 315, 285, 290, 290, 300} /* UG,GT,A,U/T,U/T */
05526 }
05527 }
05528 , {{{ 315, 315, 315, 310, 315} /* UG,GT,C,E,E */
05529 , { 305, 305, 305, 300, 305} /* UG,GT,C,E,A */
05530 , { 290, 290, 290, 285, 290} /* UG,GT,C,E,C */
05531 , { 300, 300, 300, 295, 300} /* UG,GT,C,E,G */
05532 , { 300, 300, 300, 295, 300} /* UG,GT,C,E,U/T */
05533 }
05534 , {{ 315, 315, 315, 310, 315} /* UG,GT,C,A,E */
05535 , { 290, 290, 290, 285, 290} /* UG,GT,C,A,A */
05536 , { 290, 290, 290, 285, 290} /* UG,GT,C,A,C */
05537 , { 265, 235, 265, 230, 265} /* UG,GT,C,A,G */
05538 , { 300, 300, 300, 295, 300} /* UG,GT,C,A,U/T */
05539 }
05540 , {{ 290, 290, 290, 285, 290} /* UG,GT,C,C,E */
05541 , { 290, 290, 290, 285, 290} /* UG,GT,C,C,A */
05542 , { 290, 290, 290, 285, 290} /* UG,GT,C,C,C */
05543 , { 280, 280, 280, 275, 280} /* UG,GT,C,C,G */
05544 , { 290, 290, 290, 285, 290} /* UG,GT,C,C,U/T */
05545 }
05546 , {{ 310, 300, 310, 295, 310} /* UG,GT,C,G,E */
05547 , { 285, 255, 285, 250, 285} /* UG,GT,C,G,A */
05548 , { 280, 280, 280, 275, 280} /* UG,GT,C,G,C */
05549 , { 210, 210, 210, 205, 210} /* UG,GT,C,G,G */
05550 , { 300, 300, 300, 295, 300} /* UG,GT,C,G,U/T */
05551 }
05552 , {{ 300, 300, 300, 295, 300} /* UG,GT,C,U/T,E */
05553 , { 290, 290, 290, 285, 290} /* UG,GT,C,U/T,A */
05554 , { 290, 290, 290, 285, 290} /* UG,GT,C,U/T,C */

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05555 , { 300, 300, 300, 295, 300} /* UG,GT,C,U/T,G */
05556 , { 290, 290, 290, 285, 290} /* UG,GT,C,U/T,U/T */
05557 }
05558 }
05559 , {{{ 325, 245, 300, 285, 325} /* UG,GT,G,E,E */
05560 , { 315, 230, 290, 255, 315} /* UG,GT,G,E,A */
05561 , { 300, 235, 275, 210, 300} /* UG,GT,G,E,C */
05562 , { 310, 215, 285, 285, 310} /* UG,GT,G,E,G */
05563 , { 310, 245, 285, 285, 310} /* UG,GT,G,E,U/T */
05564 }
05565 , { { 325, 240, 300, 245, 325} /* UG,GT,G,A,E */
05566 , { 300, 215, 275, 210, 300} /* UG,GT,G,A,A */
05567 , { 300, 205, 275, 210, 300} /* UG,GT,G,A,C */
05568 , { 245, 115, 220, 220, 245} /* UG,GT,G,A,G */
05569 , { 310, 215, 285, 220, 310} /* UG,GT,G,A,U/T */
05570 }
05571 , { { 300, 235, 275, 210, 300} /* UG,GT,G,C,E */
05572 , { 300, 205, 275, 210, 300} /* UG,GT,G,C,A */
05573 , { 300, 235, 275, 210, 300} /* UG,GT,G,C,C */
05574 , { 290, 195, 265, 200, 290} /* UG,GT,G,C,G */
05575 , { 300, 235, 275, 210, 300} /* UG,GT,G,C,U/T */
05576 }
05577 , { { 310, 215, 285, 285, 310} /* UG,GT,G,G,E */
05578 , { 265, 170, 240, 240, 265} /* UG,GT,G,G,A */
05579 , { 290, 195, 265, 200, 290} /* UG,GT,G,G,C */
05580 , { 285, 190, 195, 260, 220} /* UG,GT,G,G,G */
05581 , { 310, 215, 285, 220, 310} /* UG,GT,G,G,U/T */
05582 }
05583 , { { 310, 245, 285, 285, 310} /* UG,GT,G,U/T,E */
05584 , { 300, 205, 275, 210, 300} /* UG,GT,G,U/T,A */
05585 , { 300, 235, 275, 210, 300} /* UG,GT,G,U/T,C */
05586 , { 310, 215, 285, 220, 310} /* UG,GT,G,U/T,G */
05587 , { 300, 205, 275, 275, 300} /* UG,GT,G,U/T,U/T */
05588 }
05589 }
05590 , {{{ 355, 325, 315, 325, 345} /* UG,GT,U/T,E,E */
05591 , { 345, 315, 305, 315, 335} /* UG,GT,U/T,E,A */
05592 , { 300, 300, 290, 300, 290} /* UG,GT,U/T,E,C */
05593 , { 310, 310, 300, 310, 300} /* UG,GT,U/T,E,G */
05594 , { 310, 310, 300, 310, 300} /* UG,GT,U/T,E,U/T */
05595 }
05596 , { { 355, 325, 315, 325, 345} /* UG,GT,U/T,A,E */
05597 , { 330, 300, 290, 300, 320} /* UG,GT,U/T,A,A */
05598 , { 300, 300, 290, 300, 290} /* UG,GT,U/T,A,C */
05599 , { 275, 245, 265, 235} /* UG,GT,U/T,A,G */
05600 , { 310, 310, 300, 310, 300} /* UG,GT,U/T,A,U/T */
05601 }
05602 , { { 300, 300, 290, 300, 290} /* UG,GT,U/T,C,E */
05603 , { 300, 300, 290, 300, 290} /* UG,GT,U/T,C,A */
05604 , { 300, 300, 290, 300, 290} /* UG,GT,U/T,C,C */
05605 , { 290, 290, 280, 290, 280} /* UG,GT,U/T,C,G */
05606 , { 300, 300, 290, 300, 290} /* UG,GT,U/T,C,U/T */
05607 }
05608 , { { 320, 310, 310, 310, 300} /* UG,GT,U/T,G,E */
05609 , { 295, 265, 285, 265, 255} /* UG,GT,U/T,G,A */
05610 , { 290, 290, 280, 290, 280} /* UG,GT,U/T,G,C */
05611 , { 285, 220, 210, 220, 275} /* UG,GT,U/T,G,G */
05612 , { 310, 310, 300, 310, 300} /* UG,GT,U/T,G,U/T */
05613 }
05614 , { { 310, 310, 300, 310, 300} /* UG,GT,U/T,U/T,E */
05615 , { 300, 300, 290, 300, 290} /* UG,GT,U/T,U/T,A */
05616 , { 300, 300, 290, 300, 290} /* UG,GT,U/T,U/T,C */
05617 , { 310, 310, 300, 310, 300} /* UG,GT,U/T,U/T,G */
05618 , { 300, 300, 290, 300, 290} /* UG,GT,U/T,U/T,U/T */
05619 }
05620 }
05621 }
05622 , {{{ 340, 310, 330, 340, 340} /* UG,UG,E,E,E */
05623 , { 340, 310, 330, 325, 340} /* UG,UG,E,E,A */
05624 , { 330, 285, 275, 330, 285} /* UG,UG,E,E,C */
05625 , { 310, 295, 285, 310, 295} /* UG,UG,E,E,G */
05626 , { 340, 305, 285, 340, 295} /* UG,UG,E,E,U/T */
05627 }
05628 , { { 310, 295, 285, 310, 305} /* UG,UG,E,A,E */
05629 , { 280, 250, 240, 265, 280} /* UG,UG,E,A,A */
05630 , { 300, 285, 275, 300, 285} /* UG,UG,E,A,C */
05631 , { 230, 200, 220, 215, 230} /* UG,UG,E,A,G */
05632 , { 310, 295, 285, 310, 295} /* UG,UG,E,A,U/T */
05633 }
05634 , { { 330, 285, 275, 330, 285} /* UG,UG,E,C,E */
05635 , { 300, 285, 275, 300, 285} /* UG,UG,E,C,A */
05636 , { 330, 285, 275, 330, 285} /* UG,UG,E,C,C */
05637 , { 285, 270, 260, 285, 270} /* UG,UG,E,C,G */
05638 , { 330, 285, 275, 330, 285} /* UG,UG,E,C,U/T */
05639 }
05640 , { { 340, 310, 330, 325, 340} /* UG,UG,E,G,E */
05641 , { 315, 285, 305, 300, 315} /* UG,UG,E,G,A */

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05642      , {      295,      280,      270,      295,      280} /* UG,UG,E,G,C */
05643      , {      285,      205,      195,      285,      270} /* UG,UG,E,G,G */
05644      , {      310,      295,      285,      310,      295} /* UG,UG,E,G,U/T */
05645      }
05646      , { {      340,      305,      285,      340,      295} /* UG,UG,E,U/T,E */
05647      , {      310,      295,      285,      310,      295} /* UG,UG,E,U/T,A */
05648      , {      330,      285,      275,      330,      285} /* UG,UG,E,U/T,C */
05649      , {      310,      295,      285,      310,      295} /* UG,UG,E,U/T,G */
05650      , {      300,      295,      275,      300,      285} /* UG,UG,E,U/T,U/T */
05651      }
05652      }
05653      , { { {      340,      280,      300,      315,      310} /* UG,UG,A,E,E */
05654      , {      325,      265,      300,      300,      310} /* UG,UG,A,E,A */
05655      , {      330,      240,      275,      305,      285} /* UG,UG,A,E,C */
05656      , {      310,      250,      285,      285,      295} /* UG,UG,A,E,G */
05657      , {      340,      280,      285,      315,      295} /* UG,UG,A,E,U/T */
05658      }
05659      , { {      310,      250,      285,      285,      295} /* UG,UG,A,A,E */
05660      , {      265,      210,      240,      240,      250} /* UG,UG,A,A,A */
05661      , {      300,      240,      275,      275,      285} /* UG,UG,A,A,C */
05662      , {      215,      160,      190,      190,      200} /* UG,UG,A,A,G */
05663      , {      310,      250,      285,      285,      295} /* UG,UG,A,A,U/T */
05664      }
05665      , { {      330,      240,      275,      305,      285} /* UG,UG,A,C,E */
05666      , {      300,      240,      275,      275,      285} /* UG,UG,A,C,A */
05667      , {      330,      240,      275,      305,      285} /* UG,UG,A,C,C */
05668      , {      285,      225,      260,      260,      270} /* UG,UG,A,C,G */
05669      , {      330,      240,      275,      305,      285} /* UG,UG,A,C,U/T */
05670      }
05671      , { {      325,      265,      300,      300,      310} /* UG,UG,A,G,E */
05672      , {      300,      240,      275,      275,      285} /* UG,UG,A,G,A */
05673      , {      295,      235,      270,      270,      280} /* UG,UG,A,G,C */
05674      , {      285,      160,      195,      260,      205} /* UG,UG,A,G,G */
05675      , {      310,      250,      285,      285,      295} /* UG,UG,A,G,U/T */
05676      }
05677      , { { {      340,      280,      285,      315,      295} /* UG,UG,A,U/T,E */
05678      , {      310,      250,      285,      285,      295} /* UG,UG,A,U/T,A */
05679      , {      330,      240,      275,      305,      285} /* UG,UG,A,U/T,C */
05680      , {      310,      250,      285,      285,      295} /* UG,UG,A,U/T,G */
05681      , {      300,      270,      275,      275,      285} /* UG,UG,A,U/T,U/T */
05682      }
05683      }
05684      , { { { {      330,      300,      330,      295,      330} /* UG,UG,C,E,E */
05685      , {      330,      300,      330,      295,      330} /* UG,UG,C,E,A */
05686      , {      275,      275,      275,      270,      275} /* UG,UG,C,E,C */
05687      , {      285,      285,      285,      280,      285} /* UG,UG,C,E,G */
05688      , {      285,      285,      285,      280,      285} /* UG,UG,C,E,U/T */
05689      }
05690      , { { {      285,      285,      285,      280,      285} /* UG,UG,C,A,E */
05691      , {      240,      240,      240,      235,      240} /* UG,UG,C,A,A */
05692      , {      275,      275,      275,      270,      275} /* UG,UG,C,A,C */
05693      , {      220,      190,      220,      185,      220} /* UG,UG,C,A,G */
05694      , {      285,      285,      285,      280,      285} /* UG,UG,C,A,U/T */
05695      }
05696      , { { {      275,      275,      275,      270,      275} /* UG,UG,C,C,E */
05697      , {      275,      275,      275,      270,      275} /* UG,UG,C,C,A */
05698      , {      275,      275,      275,      270,      275} /* UG,UG,C,C,C */
05699      , {      260,      260,      260,      255,      260} /* UG,UG,C,C,G */
05700      , {      275,      275,      275,      270,      275} /* UG,UG,C,C,U/T */
05701      }
05702      , { { {      330,      300,      330,      295,      330} /* UG,UG,C,G,E */
05703      , {      305,      275,      305,      270,      305} /* UG,UG,C,G,A */
05704      , {      270,      270,      270,      265,      270} /* UG,UG,C,G,C */
05705      , {      195,      195,      195,      190,      195} /* UG,UG,C,G,G */
05706      , {      285,      285,      285,      280,      285} /* UG,UG,C,G,U/T */
05707      }
05708      , { { {      285,      285,      285,      280,      285} /* UG,UG,C,U/T,E */
05709      , {      285,      285,      285,      280,      285} /* UG,UG,C,U/T,A */
05710      , {      275,      275,      275,      270,      275} /* UG,UG,C,U/T,C */
05711      , {      285,      285,      285,      280,      285} /* UG,UG,C,U/T,G */
05712      , {      275,      275,      275,      270,      275} /* UG,UG,C,U/T,U/T */
05713      }
05714      }
05715      , { { { {      310,      230,      285,      285,      310} /* UG,UG,G,E,E */
05716      , {      310,      215,      285,      285,      310} /* UG,UG,G,E,A */
05717      , {      285,      220,      260,      195,      285} /* UG,UG,G,E,C */
05718      , {      295,      200,      270,      270,      295} /* UG,UG,G,E,G */
05719      , {      295,      230,      270,      270,      295} /* UG,UG,G,E,U/T */
05720      }
05721      , { { {      295,      200,      270,      205,      295} /* UG,UG,G,A,E */
05722      , {      250,      160,      225,      160,      250} /* UG,UG,G,A,A */
05723      , {      285,      190,      260,      195,      285} /* UG,UG,G,A,C */
05724      , {      200,      110,      175,      175,      200} /* UG,UG,G,A,G */
05725      , {      295,      200,      270,      205,      295} /* UG,UG,G,A,U/T */
05726      }
05727      , { { {      285,      220,      260,      195,      285} /* UG,UG,G,C,E */
05728      , {      285,      190,      260,      195,      285} /* UG,UG,G,C,A */

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05729      , {      285,      220,      260,      195,      285} /* UG,UG,G,C,C */
05730      , {      270,      175,      245,      180,      270} /* UG,UG,G,C,G */
05731      , {      285,      220,      260,      195,      285} /* UG,UG,G,C,U/T */
05732      }
05733      , {{      310,      215,      285,      285,      310} /* UG,UG,G,G,E */
05734      , {      285,      190,      260,      260,      285} /* UG,UG,G,G,A */
05735      , {      280,      185,      255,      190,      280} /* UG,UG,G,G,C */
05736      , {      270,      175,      180,      245,      205} /* UG,UG,G,G,G */
05737      , {      295,      200,      270,      205,      295} /* UG,UG,G,G,U/T */
05738      }
05739      , {{      295,      230,      270,      270,      295} /* UG,UG,G,U/T,E */
05740      , {      295,      200,      270,      205,      295} /* UG,UG,G,U/T,A */
05741      , {      285,      220,      260,      195,      285} /* UG,UG,G,U/T,C */
05742      , {      295,      200,      270,      205,      295} /* UG,UG,G,U/T,G */
05743      , {      285,      190,      260,      260,      285} /* UG,UG,G,U/T,U/T */
05744      }
05745      }
05746      , {{{      340,      310,      330,      310,      300} /* UG,UG,U/T,E,E */
05747      , {      340,      310,      330,      310,      300} /* UG,UG,U/T,E,A */
05748      , {      285,      285,      275,      285,      275} /* UG,UG,U/T,E,C */
05749      , {      295,      295,      285,      295,      285} /* UG,UG,U/T,E,G */
05750      , {      295,      295,      285,      295,      285} /* UG,UG,U/T,E,U/T */
05751      }
05752      , {{      305,      295,      285,      295,      295} /* UG,UG,U/T,A,E */
05753      , {      280,      250,      240,      250,      270} /* UG,UG,U/T,A,A */
05754      , {      285,      285,      275,      285,      275} /* UG,UG,U/T,A,C */
05755      , {      230,      200,      220,      200,      190} /* UG,UG,U/T,A,G */
05756      , {      295,      295,      285,      295,      285} /* UG,UG,U/T,A,U/T */
05757      }
05758      , {{{      285,      285,      275,      285,      275} /* UG,UG,U/T,C,E */
05759      , {      285,      285,      275,      285,      275} /* UG,UG,U/T,C,A */
05760      , {      285,      285,      275,      285,      275} /* UG,UG,U/T,C,C */
05761      , {      270,      270,      260,      270,      260} /* UG,UG,U/T,C,G */
05762      , {      285,      285,      275,      285,      275} /* UG,UG,U/T,C,U/T */
05763      }
05764      , {{{      340,      310,      330,      310,      300} /* UG,UG,U/T,G,E */
05765      , {      315,      285,      305,      285,      275} /* UG,UG,U/T,G,A */
05766      , {      280,      280,      270,      280,      270} /* UG,UG,U/T,G,C */
05767      , {      270,      205,      195,      205,      260} /* UG,UG,U/T,G,G */
05768      , {      295,      295,      285,      295,      285} /* UG,UG,U/T,G,U/T */
05769      }
05770      , {{{      295,      295,      285,      295,      285} /* UG,UG,U/T,U/T,E */
05771      , {      295,      295,      285,      295,      285} /* UG,UG,U/T,U/T,A */
05772      , {      285,      285,      275,      285,      275} /* UG,UG,U/T,U/T,C */
05773      , {      295,      295,      285,      295,      285} /* UG,UG,U/T,U/T,G */
05774      , {      285,      285,      275,      285,      275} /* UG,UG,U/T,U/T,U/T */
05775      }
05776      }
05777      }
05778      , {{{      330,      295,      285,      330,      325} /* UG,AT,E,E,E */
05779      , {      325,      295,      285,      310,      325} /* UG,AT,E,E,A */
05780      , {      315,      270,      260,      315,      270} /* UG,AT,E,E,C */
05781      , {      300,      285,      275,      300,      285} /* UG,AT,E,E,G */
05782      , {      330,      285,      275,      330,      285} /* UG,AT,E,E,U/T */
05783      }
05784      , {{{      325,      295,      285,      310,      325} /* UG,AT,E,A,E */
05785      , {      290,      260,      250,      275,      290} /* UG,AT,E,A,A */
05786      , {      270,      255,      245,      270,      255} /* UG,AT,E,A,C */
05787      , {      230,      200,      220,      215,      230} /* UG,AT,E,A,G */
05788      , {      295,      280,      270,      295,      280} /* UG,AT,E,A,U/T */
05789      }
05790      , {{{      320,      275,      265,      320,      275} /* UG,AT,E,C,E */
05791      , {      275,      260,      250,      275,      260} /* UG,AT,E,C,A */
05792      , {      315,      270,      260,      315,      270} /* UG,AT,E,C,C */
05793      , {      290,      275,      265,      290,      275} /* UG,AT,E,C,G */
05794      , {      310,      265,      255,      310,      265} /* UG,AT,E,C,U/T */
05795      }
05796      , {{{      295,      280,      285,      295,      295} /* UG,AT,E,G,E */
05797      , {      265,      235,      255,      250,      265} /* UG,AT,E,G,A */
05798      , {      275,      260,      250,      275,      260} /* UG,AT,E,G,C */
05799      , {      255,      175,      165,      255,      240} /* UG,AT,E,G,G */
05800      , {      295,      280,      270,      295,      280} /* UG,AT,E,G,U/T */
05801      }
05802      , {{{      330,      285,      275,      330,      285} /* UG,AT,E,U/T,E */
05803      , {      300,      285,      275,      300,      285} /* UG,AT,E,U/T,A */
05804      , {      310,      265,      255,      310,      265} /* UG,AT,E,U/T,C */
05805      , {      300,      285,      275,      300,      285} /* UG,AT,E,U/T,G */
05806      , {      225,      220,      200,      225,      210} /* UG,AT,E,U/T,U/T */
05807      }
05808      }
05809      , {{{      330,      250,      285,      305,      295} /* UG,AT,A,E,E */
05810      , {      310,      250,      285,      285,      295} /* UG,AT,A,E,A */
05811      , {      315,      225,      260,      290,      270} /* UG,AT,A,E,C */
05812      , {      300,      245,      275,      275,      285} /* UG,AT,A,E,G */
05813      , {      330,      240,      275,      305,      285} /* UG,AT,A,E,U/T */
05814      }
05815      , {{{      310,      250,      285,      285,      295} /* UG,AT,A,A,E */

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05816 , { 275, 215, 250, 250, 260} /* UG,AT,A,A,A */
05817 , { 270, 215, 245, 245, 255} /* UG,AT,A,A,C */
05818 , { 215, 160, 190, 190, 200} /* UG,AT,A,A,G */
05819 , { 295, 240, 270, 270, 280} /* UG,AT,A,A,U/T */
05820 }
05821 , { { 320, 235, 265, 295, 275} /* UG,AT,A,C,E */
05822 , { 275, 220, 250, 250, 260} /* UG,AT,A,C,A */
05823 , { 315, 225, 260, 290, 270} /* UG,AT,A,C,C */
05824 , { 290, 235, 265, 265, 275} /* UG,AT,A,C,G */
05825 , { 310, 220, 255, 285, 265} /* UG,AT,A,C,U/T */
05826 }
05827 , { { 295, 240, 270, 270, 280} /* UG,AT,A,G,E */
05828 , { 250, 195, 225, 225, 235} /* UG,AT,A,G,A */
05829 , { 275, 220, 250, 250, 260} /* UG,AT,A,G,C */
05830 , { 255, 135, 165, 230, 175} /* UG,AT,A,G,G */
05831 , { 295, 240, 270, 270, 280} /* UG,AT,A,G,U/T */
05832 }
05833 , { { 330, 245, 275, 305, 285} /* UG,AT,A,U/T,E */
05834 , { 300, 245, 275, 275, 285} /* UG,AT,A,U/T,A */
05835 , { 310, 220, 255, 285, 265} /* UG,AT,A,U/T,C */
05836 , { 300, 245, 275, 275, 285} /* UG,AT,A,U/T,G */
05837 , { 225, 195, 200, 200, 210} /* UG,AT,A,U/T,U/T */
05838 }
05839 }
05840 , { { { 285, 285, 285, 280, 285} /* UG,AT,C,E,E */
05841 , { 285, 285, 285, 280, 285} /* UG,AT,C,E,A */
05842 , { 260, 260, 260, 255, 260} /* UG,AT,C,E,C */
05843 , { 275, 275, 275, 270, 275} /* UG,AT,C,E,G */
05844 , { 275, 275, 275, 270, 275} /* UG,AT,C,E,U/T */
05845 }
05846 , { { 285, 285, 285, 280, 285} /* UG,AT,C,A,E */
05847 , { 250, 250, 250, 245, 250} /* UG,AT,C,A,A */
05848 , { 245, 245, 245, 240, 245} /* UG,AT,C,A,C */
05849 , { 220, 190, 220, 185, 220} /* UG,AT,C,A,G */
05850 , { 270, 270, 270, 265, 270} /* UG,AT,C,A,U/T */
05851 }
05852 , { { 265, 265, 265, 260, 265} /* UG,AT,C,C,E */
05853 , { 250, 250, 250, 245, 250} /* UG,AT,C,C,A */
05854 , { 260, 260, 260, 255, 260} /* UG,AT,C,C,C */
05855 , { 265, 265, 265, 260, 265} /* UG,AT,C,C,G */
05856 , { 255, 255, 255, 250, 255} /* UG,AT,C,C,U/T */
05857 }
05858 , { { 285, 270, 285, 265, 285} /* UG,AT,C,G,E */
05859 , { 255, 225, 255, 220, 255} /* UG,AT,C,G,A */
05860 , { 250, 250, 250, 245, 250} /* UG,AT,C,G,C */
05861 , { 165, 165, 165, 160, 165} /* UG,AT,C,G,G */
05862 , { 270, 270, 270, 265, 270} /* UG,AT,C,G,U/T */
05863 }
05864 , { { 275, 275, 275, 270, 275} /* UG,AT,C,U/T,E */
05865 , { 275, 275, 275, 270, 275} /* UG,AT,C,U/T,A */
05866 , { 255, 255, 255, 250, 255} /* UG,AT,C,U/T,C */
05867 , { 275, 275, 275, 270, 275} /* UG,AT,C,U/T,G */
05868 , { 200, 200, 200, 195, 200} /* UG,AT,C,U/T,U/T */
05869 }
05870 }
05871 , { { { 295, 220, 270, 245, 295} /* UG,AT,G,E,E */
05872 , { 295, 200, 270, 240, 295} /* UG,AT,G,E,A */
05873 , { 270, 205, 245, 180, 270} /* UG,AT,G,E,C */
05874 , { 285, 195, 260, 245, 285} /* UG,AT,G,E,G */
05875 , { 285, 220, 260, 215, 285} /* UG,AT,G,E,U/T */
05876 }
05877 , { { { 295, 200, 270, 205, 295} /* UG,AT,G,A,E */
05878 , { 260, 165, 235, 170, 260} /* UG,AT,G,A,A */
05879 , { 255, 165, 230, 165, 255} /* UG,AT,G,A,C */
05880 , { 200, 110, 175, 175, 200} /* UG,AT,G,A,G */
05881 , { 280, 190, 255, 190, 280} /* UG,AT,G,A,U/T */
05882 }
05883 , { { 275, 210, 250, 185, 275} /* UG,AT,G,C,E */
05884 , { 260, 170, 235, 170, 260} /* UG,AT,G,C,A */
05885 , { 270, 205, 245, 180, 270} /* UG,AT,G,C,C */
05886 , { 275, 185, 250, 185, 275} /* UG,AT,G,C,G */
05887 , { 265, 200, 240, 175, 265} /* UG,AT,G,C,U/T */
05888 }
05889 , { { 280, 190, 255, 245, 280} /* UG,AT,G,G,E */
05890 , { 235, 145, 210, 210, 235} /* UG,AT,G,G,A */
05891 , { 260, 170, 235, 170, 260} /* UG,AT,G,G,C */
05892 , { 240, 150, 150, 215, 175} /* UG,AT,G,G,G */
05893 , { 280, 190, 255, 190, 280} /* UG,AT,G,G,U/T */
05894 }
05895 , { { 285, 220, 260, 215, 285} /* UG,AT,G,U/T,E */
05896 , { 285, 195, 260, 195, 285} /* UG,AT,G,U/T,A */
05897 , { 265, 200, 240, 175, 265} /* UG,AT,G,U/T,C */
05898 , { 285, 195, 260, 195, 285} /* UG,AT,G,U/T,G */
05899 , { 210, 115, 185, 185, 210} /* UG,AT,G,U/T,U/T */
05900 }
05901 }
05902 , { { { 325, 295, 285, 295, 315} /* UG,AT,U/T,E,E */
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05903      , {      325,      295,      285,      295,      315} /* UG,AT,U/T,E,A */
05904      , {      270,      270,      260,      270,      260} /* UG,AT,U/T,E,C */
05905      , {      285,      285,      275,      285,      275} /* UG,AT,U/T,E,G */
05906      , {      285,      285,      275,      285,      275} /* UG,AT,U/T,E,U/T */
05907      }
05908      , { {      325,      295,      285,      295,      315} /* UG,AT,U/T,A,E */
05909      , {      290,      260,      250,      260,      280} /* UG,AT,U/T,A,A */
05910      , {      255,      255,      245,      255,      245} /* UG,AT,U/T,A,C */
05911      , {      230,      200,      220,      200,      190} /* UG,AT,U/T,A,G */
05912      , {      280,      280,      270,      280,      270} /* UG,AT,U/T,A,U/T */
05913      }
05914      , { {      275,      275,      265,      275,      265} /* UG,AT,U/T,C,E */
05915      , {      260,      260,      250,      260,      250} /* UG,AT,U/T,C,A */
05916      , {      270,      270,      260,      270,      260} /* UG,AT,U/T,C,C */
05917      , {      275,      275,      265,      275,      265} /* UG,AT,U/T,C,G */
05918      , {      265,      265,      255,      265,      255} /* UG,AT,U/T,C,U/T */
05919      }
05920      , { {      295,      280,      285,      280,      270} /* UG,AT,U/T,G,E */
05921      , {      265,      235,      255,      235,      225} /* UG,AT,U/T,G,A */
05922      , {      260,      260,      250,      260,      250} /* UG,AT,U/T,G,C */
05923      , {      240,      175,      165,      175,      230} /* UG,AT,U/T,G,G */
05924      , {      280,      280,      270,      280,      270} /* UG,AT,U/T,G,U/T */
05925      }
05926      , { {      285,      285,      275,      285,      275} /* UG,AT,U/T,U/T,E */
05927      , {      285,      285,      275,      285,      275} /* UG,AT,U/T,U/T,A */
05928      , {      265,      265,      255,      265,      255} /* UG,AT,U/T,U/T,C */
05929      , {      285,      285,      275,      285,      275} /* UG,AT,U/T,U/T,G */
05930      , {      210,      210,      200,      210,      200} /* UG,AT,U/T,U/T,U/T */
05931      }
05932      }
05933      }
05934      , { { {      340,      295,      285,      340,      325} /* UG,UA,E,E,E */
05935      , {      325,      295,      285,      310,      325} /* UG,UA,E,E,A */
05936      , {      325,      280,      270,      325,      280} /* UG,UA,E,E,C */
05937      , {      310,      295,      285,      310,      295} /* UG,UA,E,E,G */
05938      , {      340,      295,      285,      340,      295} /* UG,UA,E,E,U/T */
05939      }
05940      , { {      325,      295,      285,      310,      325} /* UG,UA,E,A,E */
05941      , {      295,      265,      255,      280,      295} /* UG,UA,E,A,A */
05942      , {      260,      245,      235,      260,      245} /* UG,UA,E,A,C */
05943      , {      240,      210,      230,      225,      240} /* UG,UA,E,A,G */
05944      , {      285,      270,      260,      285,      270} /* UG,UA,E,A,U/T */
05945      }
05946      , { {      340,      295,      285,      340,      295} /* UG,UA,E,C,E */
05947      , {      285,      270,      260,      285,      270} /* UG,UA,E,C,A */
05948      , {      325,      280,      270,      325,      280} /* UG,UA,E,C,C */
05949      , {      310,      295,      285,      310,      295} /* UG,UA,E,C,G */
05950      , {      320,      275,      265,      320,      275} /* UG,UA,E,C,U/T */
05951      }
05952      , { {      290,      265,      260,      290,      275} /* UG,UA,E,G,E */
05953      , {      245,      215,      235,      230,      245} /* UG,UA,E,G,A */
05954      , {      260,      245,      235,      260,      245} /* UG,UA,E,G,C */
05955      , {      265,      185,      175,      265,      250} /* UG,UA,E,G,G */
05956      , {      280,      265,      255,      280,      265} /* UG,UA,E,G,U/T */
05957      }
05958      , { {      325,      295,      285,      325,      295} /* UG,UA,E,U/T,E */
05959      , {      310,      295,      285,      310,      295} /* UG,UA,E,U/T,A */
05960      , {      305,      260,      250,      305,      260} /* UG,UA,E,U/T,C */
05961      , {      310,      295,      285,      310,      295} /* UG,UA,E,U/T,G */
05962      , {      235,      235,      210,      235,      220} /* UG,UA,E,U/T,U/T */
05963      }
05964      }
05965      , { { {      340,      250,      285,      315,      295} /* UG,UA,A,E,E */
05966      , {      310,      250,      285,      285,      295} /* UG,UA,A,E,A */
05967      , {      325,      235,      270,      300,      280} /* UG,UA,A,E,C */
05968      , {      310,      250,      285,      285,      295} /* UG,UA,A,E,G */
05969      , {      340,      250,      285,      315,      295} /* UG,UA,A,E,U/T */
05970      }
05971      , { {      310,      250,      285,      285,      295} /* UG,UA,A,A,E */
05972      , {      280,      220,      255,      255,      265} /* UG,UA,A,A,A */
05973      , {      260,      205,      235,      235,      245} /* UG,UA,A,A,C */
05974      , {      225,      170,      200,      200,      210} /* UG,UA,A,A,G */
05975      , {      285,      230,      260,      260,      270} /* UG,UA,A,A,U/T */
05976      }
05977      , { {      340,      250,      285,      315,      295} /* UG,UA,A,C,E */
05978      , {      285,      225,      260,      260,      270} /* UG,UA,A,C,A */
05979      , {      325,      235,      270,      300,      280} /* UG,UA,A,C,C */
05980      , {      310,      250,      285,      285,      295} /* UG,UA,A,C,G */
05981      , {      320,      230,      265,      295,      275} /* UG,UA,A,C,U/T */
05982      }
05983      , { {      290,      225,      255,      265,      265} /* UG,UA,A,G,E */
05984      , {      230,      175,      205,      205,      215} /* UG,UA,A,G,A */
05985      , {      260,      205,      235,      235,      245} /* UG,UA,A,G,C */
05986      , {      265,      145,      175,      240,      185} /* UG,UA,A,G,G */
05987      , {      280,      225,      255,      255,      265} /* UG,UA,A,G,U/T */
05988      }
05989      , { {      325,      250,      285,      300,      295} /* UG,UA,A,U/T,E */

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05990      , {      310,      250,      285,      285,      295} /* UG,UA,A,U/T,A */
05991      , {      305,      215,      250,      280,      260} /* UG,UA,A,U/T,C */
05992      , {      310,      250,      285,      285,      295} /* UG,UA,A,U/T,G */
05993      , {      235,      210,      210,      210,      220} /* UG,UA,A,U/T,U/T */
05994      }
05995      }
05996      ,{{{      285,      285,      285,      280,      285} /* UG,UA,C,E,E */
05997      , {      285,      285,      285,      280,      285} /* UG,UA,C,E,A */
05998      , {      270,      270,      270,      265,      270} /* UG,UA,C,E,C */
05999      , {      285,      285,      285,      280,      285} /* UG,UA,C,E,G */
06000      , {      285,      285,      285,      280,      285} /* UG,UA,C,E,U/T */
06001      }
06002      ,{{{      285,      285,      285,      280,      285} /* UG,UA,C,A,E */
06003      , {      255,      255,      255,      250,      255} /* UG,UA,C,A,A */
06004      , {      235,      235,      235,      230,      235} /* UG,UA,C,A,C */
06005      , {      230,      200,      230,      195,      230} /* UG,UA,C,A,G */
06006      , {      260,      260,      260,      255,      260} /* UG,UA,C,A,U/T */
06007      }
06008      ,{{{      285,      285,      285,      280,      285} /* UG,UA,C,C,E */
06009      , {      260,      260,      260,      255,      260} /* UG,UA,C,C,A */
06010      , {      270,      270,      270,      265,      270} /* UG,UA,C,C,C */
06011      , {      285,      285,      285,      280,      285} /* UG,UA,C,C,G */
06012      , {      265,      265,      265,      260,      265} /* UG,UA,C,C,U/T */
06013      }
06014      ,{{{      260,      255,      260,      250,      260} /* UG,UA,C,G,E */
06015      , {      235,      205,      235,      200,      235} /* UG,UA,C,G,A */
06016      , {      235,      235,      235,      230,      235} /* UG,UA,C,G,C */
06017      , {      175,      175,      175,      170,      175} /* UG,UA,C,G,G */
06018      , {      255,      255,      255,      250,      255} /* UG,UA,C,G,U/T */
06019      }
06020      ,{{{      285,      285,      285,      280,      285} /* UG,UA,C,U/T,E */
06021      , {      285,      285,      285,      280,      285} /* UG,UA,C,U/T,A */
06022      , {      250,      250,      250,      245,      250} /* UG,UA,C,U/T,C */
06023      , {      285,      285,      285,      280,      285} /* UG,UA,C,U/T,G */
06024      , {      210,      210,      210,      205,      210} /* UG,UA,C,U/T,U/T */
06025      }
06026      }
06027      ,{{{      295,      230,      270,      255,      295} /* UG,UA,G,E,E */
06028      , {      295,      200,      270,      220,      295} /* UG,UA,G,E,A */
06029      , {      280,      215,      255,      190,      280} /* UG,UA,G,E,C */
06030      , {      295,      200,      270,      255,      295} /* UG,UA,G,E,G */
06031      , {      295,      230,      270,      225,      295} /* UG,UA,G,E,U/T */
06032      }
06033      ,{{{      295,      200,      270,      215,      295} /* UG,UA,G,A,E */
06034      , {      265,      170,      240,      175,      265} /* UG,UA,G,A,A */
06035      , {      245,      155,      220,      155,      245} /* UG,UA,G,A,C */
06036      , {      210,      120,      185,      185,      210} /* UG,UA,G,A,G */
06037      , {      270,      180,      245,      180,      270} /* UG,UA,G,A,U/T */
06038      }
06039      ,{{{      295,      230,      270,      205,      295} /* UG,UA,G,C,E */
06040      , {      270,      175,      245,      180,      270} /* UG,UA,G,C,A */
06041      , {      280,      215,      255,      190,      280} /* UG,UA,G,C,C */
06042      , {      295,      200,      270,      205,      295} /* UG,UA,G,C,G */
06043      , {      275,      210,      250,      185,      275} /* UG,UA,G,C,U/T */
06044      }
06045      ,{{{      275,      185,      240,      250,      265} /* UG,UA,G,G,E */
06046      , {      215,      125,      190,      190,      215} /* UG,UA,G,G,A */
06047      , {      245,      155,      220,      155,      245} /* UG,UA,G,G,C */
06048      , {      250,      160,      160,      225,      185} /* UG,UA,G,G,G */
06049      , {      265,      175,      240,      175,      265} /* UG,UA,G,G,U/T */
06050      }
06051      ,{{{      295,      215,      270,      225,      295} /* UG,UA,G,U/T,E */
06052      , {      295,      200,      270,      205,      295} /* UG,UA,G,U/T,A */
06053      , {      260,      195,      235,      170,      260} /* UG,UA,G,U/T,C */
06054      , {      295,      200,      270,      205,      295} /* UG,UA,G,U/T,G */
06055      , {      220,      130,      195,      195,      220} /* UG,UA,G,U/T,U/T */
06056      }
06057      }
06058      ,{{{      325,      295,      285,      295,      315} /* UG,UA,U/T,E,E */
06059      , {      325,      295,      285,      295,      315} /* UG,UA,U/T,E,A */
06060      , {      280,      280,      270,      280,      270} /* UG,UA,U/T,E,C */
06061      , {      295,      295,      285,      295,      285} /* UG,UA,U/T,E,G */
06062      , {      295,      295,      285,      295,      285} /* UG,UA,U/T,E,U/T */
06063      }
06064      ,{{{      325,      295,      285,      295,      315} /* UG,UA,U/T,A,E */
06065      , {      295,      265,      255,      265,      285} /* UG,UA,U/T,A,A */
06066      , {      245,      245,      235,      245,      235} /* UG,UA,U/T,A,C */
06067      , {      240,      210,      230,      210,      200} /* UG,UA,U/T,A,G */
06068      , {      270,      270,      260,      270,      260} /* UG,UA,U/T,A,U/T */
06069      }
06070      ,{{{      295,      295,      285,      295,      285} /* UG,UA,U/T,C,E */
06071      , {      270,      270,      260,      270,      260} /* UG,UA,U/T,C,A */
06072      , {      280,      280,      270,      280,      270} /* UG,UA,U/T,C,C */
06073      , {      295,      295,      285,      295,      285} /* UG,UA,U/T,C,G */
06074      , {      275,      275,      265,      275,      265} /* UG,UA,U/T,C,U/T */
06075      }
06076      ,{{{      275,      265,      260,      265,      265} /* UG,UA,U/T,G,E */

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06077 , { 245, 215, 235, 215, 205} /* UG,UA,U/T,G,A */
06078 , { 245, 245, 235, 245, 235} /* UG,UA,U/T,G,C */
06079 , { 250, 185, 175, 185, 240} /* UG,UA,U/T,G,G */
06080 , { 265, 265, 255, 265, 255} /* UG,UA,U/T,G,U/T */
06081 }
06082 , { { 295, 295, 285, 295, 285} /* UG,UA,U/T,U/T,E */
06083 , { 295, 295, 285, 295, 285} /* UG,UA,U/T,U/T,A */
06084 , { 260, 260, 250, 260, 250} /* UG,UA,U/T,U/T,C */
06085 , { 295, 295, 285, 295, 285} /* UG,UA,U/T,U/T,G */
06086 , { 220, 220, 210, 220, 210} /* UG,UA,U/T,U/T,U/T */
06087 }
06088 }
06089 }
06090 , { { { 355, 335, 330, 355, 355} /* UG,NN,E,E,E */
06091 , { 355, 335, 330, 340, 355} /* UG,NN,E,E,A */
06092 , { 345, 300, 290, 345, 300} /* UG,NN,E,E,C */
06093 , { 325, 310, 300, 325, 310} /* UG,NN,E,E,G */
06094 , { 355, 320, 300, 355, 310} /* UG,NN,E,E,U/T */
06095 }
06096 , { { 355, 335, 315, 340, 355} /* UG,NN,E,A,E */
06097 , { 330, 310, 290, 315, 330} /* UG,NN,E,A,A */
06098 , { 315, 300, 290, 315, 300} /* UG,NN,E,A,C */
06099 , { 275, 245, 265, 260, 275} /* UG,NN,E,A,G */
06100 , { 325, 310, 300, 325, 310} /* UG,NN,E,A,U/T */
06101 }
06102 , { { 355, 310, 300, 355, 310} /* UG,NN,E,C,E */
06103 , { 315, 300, 290, 315, 300} /* UG,NN,E,C,A */
06104 , { 345, 300, 290, 345, 300} /* UG,NN,E,C,C */
06105 , { 325, 310, 300, 325, 310} /* UG,NN,E,C,G */
06106 , { 345, 300, 290, 345, 300} /* UG,NN,E,C,U/T */
06107 }
06108 , { { 340, 335, 330, 325, 340} /* UG,NN,E,G,E */
06109 , { 315, 310, 305, 300, 315} /* UG,NN,E,G,A */
06110 , { 310, 295, 285, 310, 295} /* UG,NN,E,G,C */
06111 , { 300, 220, 210, 300, 285} /* UG,NN,E,G,G */
06112 , { 325, 310, 300, 325, 310} /* UG,NN,E,G,U/T */
06113 }
06114 , { { 355, 320, 300, 355, 310} /* UG,NN,E,U/T,E */
06115 , { 325, 310, 300, 325, 310} /* UG,NN,E,U/T,A */
06116 , { 345, 300, 290, 345, 300} /* UG,NN,E,U/T,C */
06117 , { 325, 310, 300, 325, 310} /* UG,NN,E,U/T,G */
06118 , { 315, 310, 290, 315, 300} /* UG,NN,E,U/T,U/T */
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06120 }
06121 , { { { 355, 310, 315, 330, 325} /* UG,NN,A,E,E */
06122 , { 340, 310, 315, 315, 325} /* UG,NN,A,E,A */
06123 , { 345, 255, 290, 320, 300} /* UG,NN,A,E,C */
06124 , { 325, 265, 300, 300, 310} /* UG,NN,A,E,G */
06125 , { 355, 295, 300, 330, 310} /* UG,NN,A,E,U/T */
06126 }
06127 , { { 340, 310, 315, 315, 325} /* UG,NN,A,A,E */
06128 , { 315, 285, 290, 290, 300} /* UG,NN,A,A,A */
06129 , { 315, 255, 290, 290, 300} /* UG,NN,A,A,C */
06130 , { 260, 200, 235, 235, 245} /* UG,NN,A,A,G */
06131 , { 325, 265, 300, 300, 310} /* UG,NN,A,A,U/T */
06132 }
06133 , { { 355, 265, 300, 330, 310} /* UG,NN,A,C,E */
06134 , { 315, 255, 290, 290, 300} /* UG,NN,A,C,A */
06135 , { 345, 255, 290, 320, 300} /* UG,NN,A,C,C */
06136 , { 325, 265, 300, 300, 310} /* UG,NN,A,C,G */
06137 , { 345, 255, 290, 320, 300} /* UG,NN,A,C,U/T */
06138 }
06139 , { { 335, 310, 300, 300, 310} /* UG,NN,A,G,E */
06140 , { 310, 285, 275, 275, 285} /* UG,NN,A,G,A */
06141 , { 310, 250, 285, 285, 295} /* UG,NN,A,G,C */
06142 , { 300, 175, 210, 275, 220} /* UG,NN,A,G,G */
06143 , { 325, 265, 300, 300, 310} /* UG,NN,A,G,U/T */
06144 }
06145 , { { 355, 295, 300, 330, 310} /* UG,NN,A,U/T,E */
06146 , { 325, 265, 300, 300, 310} /* UG,NN,A,U/T,A */
06147 , { 345, 255, 290, 320, 300} /* UG,NN,A,U/T,C */
06148 , { 325, 265, 300, 300, 310} /* UG,NN,A,U/T,G */
06149 , { 315, 285, 290, 290, 300} /* UG,NN,A,U/T,U/T */
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06151 }
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06153 , { 330, 315, 330, 310, 330} /* UG,NN,C,E,A */
06154 , { 290, 290, 290, 285, 290} /* UG,NN,C,E,C */
06155 , { 300, 300, 300, 295, 300} /* UG,NN,C,E,G */
06156 , { 300, 300, 300, 295, 300} /* UG,NN,C,E,U/T */
06157 }
06158 , { { 315, 315, 315, 310, 315} /* UG,NN,C,A,E */
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06160 , { 290, 290, 290, 285, 290} /* UG,NN,C,A,C */
06161 , { 265, 235, 265, 230, 265} /* UG,NN,C,A,G */
06162 , { 300, 300, 300, 295, 300} /* UG,NN,C,A,U/T */
06163 }

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06167 ,{ 300, 300, 300, 295, 300} /* UG,NN,C,C,G */
06168 ,{ 290, 290, 290, 285, 290} /* UG,NN,C,C,U/T */
06169 }
06170 ,{{ 330, 300, 330, 295, 330} /* UG,NN,C,G,E */
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06172 ,{ 285, 285, 285, 280, 285} /* UG,NN,C,G,C */
06173 ,{ 210, 210, 210, 205, 210} /* UG,NN,C,G,G */
06174 ,{ 300, 300, 300, 295, 300} /* UG,NN,C,G,U/T */
06175 }
06176 ,{{ 300, 300, 300, 295, 300} /* UG,NN,C,U/T,E */
06177 ,{ 300, 300, 300, 295, 300} /* UG,NN,C,U/T,A */
06178 ,{ 290, 290, 290, 285, 290} /* UG,NN,C,U/T,C */
06179 ,{ 300, 300, 300, 295, 300} /* UG,NN,C,U/T,G */
06180 ,{ 290, 290, 290, 285, 290} /* UG,NN,C,U/T,U/T */
06181 }
06182 }
06183 ,{{{ 325, 245, 300, 285, 325} /* UG,NN,G,E,E */
06184 ,{ 325, 240, 300, 285, 325} /* UG,NN,G,E,A */
06185 ,{ 300, 235, 275, 210, 300} /* UG,NN,G,E,C */
06186 ,{ 310, 215, 285, 285, 310} /* UG,NN,G,E,G */
06187 ,{ 310, 245, 285, 285, 310} /* UG,NN,G,E,U/T */
06188 }
06189 ,{{ 325, 240, 300, 245, 325} /* UG,NN,G,A,E */
06190 ,{ 300, 215, 275, 210, 300} /* UG,NN,G,A,A */
06191 ,{ 300, 205, 275, 210, 300} /* UG,NN,G,A,C */
06192 ,{ 245, 125, 220, 220, 245} /* UG,NN,G,A,G */
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06194 }
06195 ,{{ 310, 245, 285, 220, 310} /* UG,NN,G,C,E */
06196 ,{ 300, 205, 275, 210, 300} /* UG,NN,G,C,A */
06197 ,{ 300, 235, 275, 210, 300} /* UG,NN,G,C,C */
06198 ,{ 310, 215, 285, 220, 310} /* UG,NN,G,C,G */
06199 ,{ 300, 235, 275, 210, 300} /* UG,NN,G,C,U/T */
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06204 ,{ 285, 190, 195, 260, 220} /* UG,NN,G,G,G */
06205 ,{ 310, 215, 285, 220, 310} /* UG,NN,G,G,U/T */
06206 }
06207 ,{{ 310, 245, 285, 285, 310} /* UG,NN,G,U/T,E */
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06210 ,{ 310, 215, 285, 220, 310} /* UG,NN,G,U/T,G */
06211 ,{ 300, 205, 275, 275, 300} /* UG,NN,G,U/T,U/T */
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06213 }
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06217 ,{ 310, 310, 300, 310, 300} /* UG,NN,U/T,E,G */
06218 ,{ 310, 310, 300, 310, 300} /* UG,NN,U/T,E,U/T */
06219 }
06220 ,{{ 355, 325, 315, 325, 345} /* UG,NN,U/T,A,E */
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06223 ,{ 275, 245, 265, 245, 235} /* UG,NN,U/T,A,G */
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06229 ,{ 310, 310, 300, 310, 300} /* UG,NN,U/T,C,G */
06230 ,{ 300, 300, 290, 300, 290} /* UG,NN,U/T,C,U/T */
06231 }
06232 ,{{ 340, 310, 330, 310, 300} /* UG,NN,U/T,G,E */
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06234 ,{ 295, 295, 285, 295, 285} /* UG,NN,U/T,G,C */
06235 ,{ 285, 220, 210, 220, 275} /* UG,NN,U/T,G,G */
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06237 }
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06241 ,{ 310, 310, 300, 310, 300} /* UG,NN,U/T,U/T,G */
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06244 }
06245 }
06246 }
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06248 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,A */
06249 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,C */
06250 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,G */

```

```

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06254      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,A,A */
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06256      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,A,G */
06257      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,A,U/T */
06258      }
06259      , { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,C,E */
06260      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,C,A */
06261      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,C,C */
06262      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,C,G */
06263      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,C,U/T */
06264      }
06265      , { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,E */
06266      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,A */
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06268      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,G */
06269      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,U/T */
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06271      , { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,U/T,E */
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06273      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,U/T,C */
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06276      }
06277      }
06278      , { { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,E,E */
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06281      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,E,G */
06282      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,E,U/T */
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06284      , { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,A,E */
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06287      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,A,G */
06288      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,A,U/T */
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06290      , { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,C,E */
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06293      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,C,G */
06294      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,C,U/T */
06295      }
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06301      }
06302      , { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,U/T,E */
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06308      }
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06314      }
06315      , { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,A,E */
06316      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,A,A */
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06318      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,A,G */
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06325      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,C,U/T */
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06333      , { {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,U/T,E */
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```
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06401     }
06402     }
06403     ,{{{   265,   265,   245,   260,   255} /* AT,CG,E,E,E */
06404     ,{     255,   255,   235,   240,   245} /* AT,CG,E,E,A */
06405     ,{     245,   240,   225,   245,   235} /* AT,CG,E,E,C */
06406     ,{     250,   250,   230,   235,   240} /* AT,CG,E,E,G */
06407     ,{     250,   250,   230,   250,   240} /* AT,CG,E,E,U/T */
06408     }
06409     ,{{{   245,   245,   225,   230,   235} /* AT,CG,E,A,E */
06410     ,{     205,   205,   185,   190,   195} /* AT,CG,E,A,A */
06411     ,{     215,   215,   200,   205,   210} /* AT,CG,E,A,C */
06412     ,{     180,   160,   170,   150,   180} /* AT,CG,E,A,G */
06413     ,{     240,   240,   225,   230,   235} /* AT,CG,E,A,U/T */
06414     }
06415     ,{{{   250,   250,   230,   245,   240} /* AT,CG,E,C,E */
06416     ,{     240,   240,   220,   225,   230} /* AT,CG,E,C,A */
06417     ,{     245,   240,   225,   245,   235} /* AT,CG,E,C,C */
06418     ,{     220,   220,   200,   205,   210} /* AT,CG,E,C,G */
06419     ,{     225,   225,   205,   225,   215} /* AT,CG,E,C,U/T */
06420     }
06421     ,{{{   230,   230,   215,   220,   225} /* AT,CG,E,G,E */
06422     ,{     180,   160,   170,   150,   180} /* AT,CG,E,G,A */
06423     ,{     210,   210,   195,   200,   205} /* AT,CG,E,G,C */
06424     ,{     175,   135,   115,   175,   145} /* AT,CG,E,G,G */
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06425      , {      230,      230,      215,      220,      225} /* AT,CG,E,G,U/T */
06426      }
06427      , {{      255,      255,      235,      240,      245} /* AT,CG,E,U/T,E */
06428      , {      255,      255,      235,      240,      245} /* AT,CG,E,U/T,A */
06429      , {      225,      225,      205,      225,      215} /* AT,CG,E,U/T,C */
06430      , {      250,      250,      230,      235,      240} /* AT,CG,E,U/T,G */
06431      , {      200,      200,      150,      155,      160} /* AT,CG,E,U/T,U/T */
06432      }
06433      }
06434      , {{{      265,      230,      230,      230,      255} /* AT,CG,A,E,E */
06435      , {      255,      220,      220,      195,      245} /* AT,CG,A,E,A */
06436      , {      245,      205,      210,      215,      235} /* AT,CG,A,E,C */
06437      , {      250,      215,      215,      190,      240} /* AT,CG,A,E,G */
06438      , {      250,      215,      215,      220,      240} /* AT,CG,A,E,U/T */
06439      }
06440      , {{      245,      210,      210,      185,      235} /* AT,CG,A,A,E */
06441      , {      205,      170,      170,      145,      195} /* AT,CG,A,A,A */
06442      , {      215,      180,      185,      160,      210} /* AT,CG,A,A,C */
06443      , {      160,      125,      130,      105,      155} /* AT,CG,A,A,G */
06444      , {      240,      205,      210,      185,      235} /* AT,CG,A,A,U/T */
06445      }
06446      , {{      250,      215,      215,      215,      240} /* AT,CG,A,C,E */
06447      , {      240,      205,      205,      180,      230} /* AT,CG,A,C,A */
06448      , {      245,      205,      210,      215,      235} /* AT,CG,A,C,C */
06449      , {      220,      185,      185,      160,      210} /* AT,CG,A,C,G */
06450      , {      225,      190,      190,      195,      215} /* AT,CG,A,C,U/T */
06451      }
06452      , {{      230,      195,      200,      175,      225} /* AT,CG,A,G,E */
06453      , {      160,      125,      130,      105,      155} /* AT,CG,A,G,A */
06454      , {      210,      175,      180,      155,      205} /* AT,CG,A,G,C */
06455      , {      170,      100,      100,      140,      125} /* AT,CG,A,G,G */
06456      , {      230,      195,      200,      175,      225} /* AT,CG,A,G,U/T */
06457      }
06458      , {{      255,      220,      220,      210,      245} /* AT,CG,A,U/T,E */
06459      , {      255,      220,      220,      195,      245} /* AT,CG,A,U/T,A */
06460      , {      225,      190,      190,      195,      215} /* AT,CG,A,U/T,C */
06461      , {      250,      215,      215,      190,      240} /* AT,CG,A,U/T,G */
06462      , {      200,      165,      135,      110,      160} /* AT,CG,A,U/T,U/T */
06463      }
06464      }
06465      , {{{      240,      225,      240,      230,      235} /* AT,CG,C,E,E */
06466      , {      230,      215,      230,      220,      225} /* AT,CG,C,E,A */
06467      , {      215,      205,      215,      210,      210} /* AT,CG,C,E,C */
06468      , {      225,      210,      225,      215,      220} /* AT,CG,C,E,G */
06469      , {      225,      210,      225,      215,      220} /* AT,CG,C,E,U/T */
06470      }
06471      , {{      220,      205,      220,      210,      215} /* AT,CG,C,A,E */
06472      , {      180,      165,      180,      170,      175} /* AT,CG,C,A,A */
06473      , {      190,      180,      190,      185,      185} /* AT,CG,C,A,C */
06474      , {      165,      125,      165,      130,      160} /* AT,CG,C,A,G */
06475      , {      215,      205,      215,      210,      210} /* AT,CG,C,A,U/T */
06476      }
06477      , {{      225,      210,      225,      215,      220} /* AT,CG,C,C,E */
06478      , {      215,      200,      215,      205,      210} /* AT,CG,C,C,A */
06479      , {      215,      205,      215,      210,      210} /* AT,CG,C,C,C */
06480      , {      195,      180,      195,      185,      190} /* AT,CG,C,C,G */
06481      , {      200,      185,      200,      190,      195} /* AT,CG,C,C,U/T */
06482      }
06483      , {{      205,      195,      205,      200,      200} /* AT,CG,C,G,E */
06484      , {      165,      125,      165,      130,      160} /* AT,CG,C,G,A */
06485      , {      185,      175,      185,      180,      180} /* AT,CG,C,G,C */
06486      , {      110,      95,      110,      100,      105} /* AT,CG,C,G,G */
06487      , {      205,      195,      205,      200,      200} /* AT,CG,C,G,U/T */
06488      }
06489      , {{{      230,      215,      230,      220,      225} /* AT,CG,C,U/T,E */
06490      , {      230,      215,      230,      220,      225} /* AT,CG,C,U/T,A */
06491      , {      200,      185,      200,      190,      195} /* AT,CG,C,U/T,C */
06492      , {      225,      210,      225,      215,      220} /* AT,CG,C,U/T,G */
06493      , {      145,      130,      145,      135,      140} /* AT,CG,C,U/T,U/T */
06494      }
06495      }
06496      , {{{      255,      195,      245,      180,      255} /* AT,CG,G,E,E */
06497      , {      245,      160,      235,      135,      245} /* AT,CG,G,E,A */
06498      , {      235,      180,      225,      125,      235} /* AT,CG,G,E,C */
06499      , {      240,      155,      230,      165,      240} /* AT,CG,G,E,G */
06500      , {      240,      185,      230,      150,      240} /* AT,CG,G,E,U/T */
06501      }
06502      , {{      235,      150,      225,      145,      235} /* AT,CG,G,A,E */
06503      , {      195,      110,      185,      85,      195} /* AT,CG,G,A,A */
06504      , {      210,      125,      200,      100,      210} /* AT,CG,G,A,C */
06505      , {      155,      70,      145,      110,      155} /* AT,CG,G,A,G */
06506      , {      235,      150,      225,      125,      235} /* AT,CG,G,A,U/T */
06507      }
06508      , {{      240,      180,      230,      130,      240} /* AT,CG,G,C,E */
06509      , {      230,      145,      220,      120,      230} /* AT,CG,G,C,A */
06510      , {      235,      180,      225,      125,      235} /* AT,CG,G,C,C */
06511      , {      210,      125,      200,      100,      210} /* AT,CG,G,C,G */

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06512      , {      215,      160,      205,      105,      215} /* AT,CG,G,C,U/T */
06513      }
06514      , {{      225,      140,      215,      170,      225} /* AT,CG,G,G,E */
06515      , {      155,      70,      145,      110,      155} /* AT,CG,G,G,A */
06516      , {      205,      120,      195,      95,      205} /* AT,CG,G,G,C */
06517      , {      175,      105,      115,      145,      125} /* AT,CG,G,G,G */
06518      , {      225,      140,      215,      115,      225} /* AT,CG,G,G,U/T */
06519      }
06520      , {{      245,      175,      235,      140,      245} /* AT,CG,G,U/T,E */
06521      , {      245,      160,      235,      135,      245} /* AT,CG,G,U/T,A */
06522      , {      215,      160,      205,      105,      215} /* AT,CG,G,U/T,C */
06523      , {      240,      155,      230,      130,      240} /* AT,CG,G,U/T,G */
06524      , {      160,      80,      150,      115,      160} /* AT,CG,G,U/T,U/T */
06525      }
06526      }
06527      , {{{      255,      250,      235,      250,      190} /* AT,CG,U/T,E,E */
06528      , {      245,      240,      225,      240,      180} /* AT,CG,U/T,E,A */
06529      , {      230,      230,      210,      230,      155} /* AT,CG,U/T,E,C */
06530      , {      240,      235,      220,      235,      165} /* AT,CG,U/T,E,G */
06531      , {      240,      235,      220,      235,      165} /* AT,CG,U/T,E,U/T */
06532      }
06533      , {{      235,      230,      215,      230,      190} /* AT,CG,U/T,A,E */
06534      , {      195,      190,      175,      190,      150} /* AT,CG,U/T,A,A */
06535      , {      205,      205,      185,      205,      130} /* AT,CG,U/T,A,C */
06536      , {      180,      150,      160,      150,      80} /* AT,CG,U/T,A,G */
06537      , {      230,      230,      210,      230,      155} /* AT,CG,U/T,A,U/T */
06538      }
06539      , {{      240,      235,      220,      235,      165} /* AT,CG,U/T,C,E */
06540      , {      230,      225,      210,      225,      155} /* AT,CG,U/T,C,A */
06541      , {      230,      230,      210,      230,      155} /* AT,CG,U/T,C,C */
06542      , {      210,      205,      190,      205,      135} /* AT,CG,U/T,C,G */
06543      , {      215,      210,      195,      210,      140} /* AT,CG,U/T,C,U/T */
06544      }
06545      , {{      220,      220,      200,      220,      145} /* AT,CG,U/T,G,E */
06546      , {      180,      150,      160,      150,      80} /* AT,CG,U/T,G,A */
06547      , {      200,      200,      180,      200,      125} /* AT,CG,U/T,G,C */
06548      , {      145,      120,      105,      120,      115} /* AT,CG,U/T,G,G */
06549      , {      220,      220,      200,      220,      145} /* AT,CG,U/T,G,U/T */
06550      }
06551      , {{      245,      240,      225,      240,      170} /* AT,CG,U/T,U/T,E */
06552      , {      245,      240,      225,      240,      170} /* AT,CG,U/T,U/T,A */
06553      , {      215,      210,      195,      210,      140} /* AT,CG,U/T,U/T,C */
06554      , {      240,      235,      220,      235,      165} /* AT,CG,U/T,U/T,G */
06555      , {      160,      155,      140,      155,      85} /* AT,CG,U/T,U/T,U/T */
06556      }
06557      }
06558      }
06559      , {{{      245,      245,      230,      240,      240} /* AT,GC,E,E,E */
06560      , {      235,      235,      220,      225,      230} /* AT,GC,E,E,A */
06561      , {      225,      220,      205,      225,      215} /* AT,GC,E,E,C */
06562      , {      230,      230,      215,      220,      225} /* AT,GC,E,E,G */
06563      , {      230,      230,      210,      230,      220} /* AT,GC,E,E,U/T */
06564      }
06565      , {{      240,      240,      225,      230,      235} /* AT,GC,E,A,E */
06566      , {      205,      205,      190,      195,      200} /* AT,GC,E,A,A */
06567      , {      210,      210,      190,      195,      200} /* AT,GC,E,A,C */
06568      , {      130,      110,      120,      100,      130} /* AT,GC,E,A,G */
06569      , {      230,      230,      210,      215,      220} /* AT,GC,E,A,U/T */
06570      }
06571      , {{      220,      220,      200,      220,      210} /* AT,GC,E,C,E */
06572      , {      205,      205,      190,      195,      200} /* AT,GC,E,C,A */
06573      , {      220,      220,      200,      220,      210} /* AT,GC,E,C,C */
06574      , {      205,      205,      190,      195,      200} /* AT,GC,E,C,G */
06575      , {      215,      215,      195,      215,      205} /* AT,GC,E,C,U/T */
06576      }
06577      , {{      230,      230,      210,      215,      220} /* AT,GC,E,G,E */
06578      , {      160,      140,      150,      130,      160} /* AT,GC,E,G,A */
06579      , {      185,      185,      165,      170,      175} /* AT,GC,E,G,C */
06580      , {      170,      130,      110,      170,      140} /* AT,GC,E,G,G */
06581      , {      230,      230,      210,      215,      220} /* AT,GC,E,G,U/T */
06582      }
06583      , {{      240,      235,      220,      240,      230} /* AT,GC,E,U/T,E */
06584      , {      220,      220,      205,      210,      215} /* AT,GC,E,U/T,A */
06585      , {      220,      215,      200,      220,      210} /* AT,GC,E,U/T,C */
06586      , {      230,      230,      215,      220,      225} /* AT,GC,E,U/T,G */
06587      , {      195,      195,      150,      155,      160} /* AT,GC,E,U/T,U/T */
06588      }
06589      }
06590      , {{{      245,      210,      215,      210,      240} /* AT,GC,A,E,E */
06591      , {      235,      200,      205,      180,      230} /* AT,GC,A,E,A */
06592      , {      225,      185,      190,      195,      215} /* AT,GC,A,E,C */
06593      , {      230,      195,      200,      175,      225} /* AT,GC,A,E,G */
06594      , {      230,      195,      195,      200,      220} /* AT,GC,A,E,U/T */
06595      }
06596      , {{      240,      205,      210,      185,      235} /* AT,GC,A,A,E */
06597      , {      205,      170,      175,      150,      200} /* AT,GC,A,A,A */
06598      , {      210,      175,      175,      150,      200} /* AT,GC,A,A,C */

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06599 , { 110, 75, 80, 55, 105} /* AT,GC,A,A,G */
06600 , { 230, 195, 195, 170, 220} /* AT,GC,A,A,U/T */
06601 }
06602 , {{ 220, 185, 185, 190, 210} /* AT,GC,A,C,E */
06603 , { 205, 170, 175, 150, 200} /* AT,GC,A,C,A */
06604 , { 220, 185, 185, 190, 210} /* AT,GC,A,C,C */
06605 , { 205, 170, 175, 150, 200} /* AT,GC,A,C,G */
06606 , { 215, 180, 180, 185, 205} /* AT,GC,A,C,U/T */
06607 }
06608 , {{ 230, 195, 195, 170, 220} /* AT,GC,A,G,E */
06609 , { 140, 105, 110, 85, 135} /* AT,GC,A,G,A */
06610 , { 185, 150, 150, 125, 175} /* AT,GC,A,G,C */
06611 , { 165, 95, 95, 135, 120} /* AT,GC,A,G,G */
06612 , { 230, 195, 195, 170, 220} /* AT,GC,A,G,U/T */
06613 }
06614 , {{ 240, 200, 205, 210, 230} /* AT,GC,A,U/T,E */
06615 , { 220, 185, 190, 165, 215} /* AT,GC,A,U/T,A */
06616 , { 220, 180, 185, 190, 210} /* AT,GC,A,U/T,C */
06617 , { 230, 195, 200, 175, 225} /* AT,GC,A,U/T,G */
06618 , { 195, 160, 135, 110, 160} /* AT,GC,A,U/T,U/T */
06619 }
06620 }
06621 , {{{ 220, 210, 220, 215, 215} /* AT,GC,C,E,E */
06622 , { 210, 200, 210, 205, 205} /* AT,GC,C,E,A */
06623 , { 195, 185, 195, 190, 190} /* AT,GC,C,E,C */
06624 , { 205, 195, 205, 200, 200} /* AT,GC,C,E,G */
06625 , { 205, 190, 205, 195, 200} /* AT,GC,C,E,U/T */
06626 }
06627 , {{ 215, 205, 215, 210, 210} /* AT,GC,C,A,E */
06628 , { 180, 170, 180, 175, 175} /* AT,GC,C,A,A */
06629 , { 185, 170, 185, 175, 180} /* AT,GC,C,A,C */
06630 , { 115, 75, 115, 80, 110} /* AT,GC,C,A,G */
06631 , { 205, 190, 205, 195, 200} /* AT,GC,C,A,U/T */
06632 }
06633 , {{ 195, 180, 195, 185, 190} /* AT,GC,C,C,E */
06634 , { 180, 170, 180, 175, 175} /* AT,GC,C,C,A */
06635 , { 195, 180, 195, 185, 190} /* AT,GC,C,C,C */
06636 , { 180, 170, 180, 175, 175} /* AT,GC,C,C,G */
06637 , { 190, 175, 190, 180, 185} /* AT,GC,C,C,U/T */
06638 }
06639 , {{ 205, 190, 205, 195, 200} /* AT,GC,C,G,E */
06640 , { 145, 105, 145, 110, 140} /* AT,GC,C,G,A */
06641 , { 160, 145, 160, 150, 155} /* AT,GC,C,G,C */
06642 , { 105, 90, 105, 95, 100} /* AT,GC,C,G,G */
06643 , { 205, 190, 205, 195, 200} /* AT,GC,C,G,U/T */
06644 }
06645 , {{ 210, 200, 210, 205, 205} /* AT,GC,C,U/T,E */
06646 , { 195, 185, 195, 190, 190} /* AT,GC,C,U/T,A */
06647 , { 190, 180, 190, 185, 185} /* AT,GC,C,U/T,C */
06648 , { 205, 195, 205, 200, 200} /* AT,GC,C,U/T,G */
06649 , { 140, 130, 140, 135, 135} /* AT,GC,C,U/T,U/T */
06650 }
06651 }
06652 , {{{ 240, 175, 230, 175, 240} /* AT,GC,G,E,E */
06653 , { 230, 145, 220, 120, 230} /* AT,GC,G,E,A */
06654 , { 215, 160, 205, 105, 215} /* AT,GC,G,E,C */
06655 , { 225, 140, 215, 175, 225} /* AT,GC,G,E,G */
06656 , { 220, 165, 210, 140, 220} /* AT,GC,G,E,U/T */
06657 }
06658 , {{ 235, 150, 225, 125, 235} /* AT,GC,G,A,E */
06659 , { 200, 115, 190, 90, 200} /* AT,GC,G,A,A */
06660 , { 200, 115, 190, 90, 200} /* AT,GC,G,A,C */
06661 , { 105, 20, 95, 60, 105} /* AT,GC,G,A,G */
06662 , { 220, 135, 210, 110, 220} /* AT,GC,G,A,U/T */
06663 }
06664 , {{ 210, 155, 200, 100, 210} /* AT,GC,G,C,E */
06665 , { 200, 115, 190, 90, 200} /* AT,GC,G,C,A */
06666 , { 210, 155, 200, 100, 210} /* AT,GC,G,C,C */
06667 , { 200, 115, 190, 90, 200} /* AT,GC,G,C,G */
06668 , { 205, 150, 195, 95, 205} /* AT,GC,G,C,U/T */
06669 }
06670 , {{ 220, 135, 210, 170, 220} /* AT,GC,G,G,E */
06671 , { 135, 50, 125, 90, 135} /* AT,GC,G,G,A */
06672 , { 175, 90, 165, 65, 175} /* AT,GC,G,G,C */
06673 , { 170, 100, 110, 140, 120} /* AT,GC,G,G,G */
06674 , { 220, 135, 210, 110, 220} /* AT,GC,G,G,U/T */
06675 }
06676 , {{ 230, 175, 220, 145, 230} /* AT,GC,G,U/T,E */
06677 , { 215, 130, 205, 105, 215} /* AT,GC,G,U/T,A */
06678 , { 210, 155, 200, 100, 210} /* AT,GC,G,U/T,C */
06679 , { 225, 140, 215, 115, 225} /* AT,GC,G,U/T,G */
06680 , { 160, 75, 150, 115, 160} /* AT,GC,G,U/T,U/T */
06681 }
06682 }
06683 , {{{ 235, 235, 215, 235, 190} /* AT,GC,U/T,E,E */
06684 , { 225, 225, 205, 180} /* AT,GC,U/T,E,A */
06685 , { 210, 210, 190, 210, 135} /* AT,GC,U/T,E,C */

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06686 , { 220, 220, 200, 220, 145} /* AT,GC,U/T,E,G */
06687 , { 220, 215, 200, 215, 145} /* AT,GC,U/T,E,U/T */
06688 }
06689 , {{ 230, 230, 210, 230, 185} /* AT,GC,U/T,A,E */
06690 , { 195, 195, 175, 195, 150} /* AT,GC,U/T,A,A */
06691 , { 200, 195, 180, 195, 125} /* AT,GC,U/T,A,C */
06692 , { 130, 100, 110, 100, 25} /* AT,GC,U/T,A,G */
06693 , { 220, 215, 200, 215, 145} /* AT,GC,U/T,A,U/T */
06694 }
06695 , {{ 210, 205, 190, 205, 135} /* AT,GC,U/T,C,E */
06696 , { 195, 195, 175, 195, 120} /* AT,GC,U/T,C,A */
06697 , { 210, 205, 190, 205, 135} /* AT,GC,U/T,C,C */
06698 , { 195, 195, 175, 195, 120} /* AT,GC,U/T,C,G */
06699 , { 205, 200, 185, 200, 130} /* AT,GC,U/T,C,U/T */
06700 }
06701 , {{ 220, 215, 200, 215, 145} /* AT,GC,U/T,G,E */
06702 , { 160, 130, 140, 130, 60} /* AT,GC,U/T,G,A */
06703 , { 175, 170, 155, 170, 100} /* AT,GC,U/T,G,C */
06704 , { 140, 115, 100, 115, 110} /* AT,GC,U/T,G,G */
06705 , { 220, 215, 200, 215, 145} /* AT,GC,U/T,G,U/T */
06706 }
06707 , {{ 225, 225, 205, 225, 150} /* AT,GC,U/T,U/T,E */
06708 , { 210, 210, 190, 210, 135} /* AT,GC,U/T,U/T,A */
06709 , { 205, 205, 185, 205, 130} /* AT,GC,U/T,U/T,C */
06710 , { 220, 220, 200, 220, 145} /* AT,GC,U/T,U/T,G */
06711 , { 155, 155, 135, 155, 80} /* AT,GC,U/T,U/T,U/T */
06712 }
06713 }
06714 }
06715 , {{{ 340, 340, 310, 315, 320} /* AT,GT,E,E,E */
06716 , { 315, 315, 300, 305, 310} /* AT,GT,E,E,A */
06717 , { 300, 300, 280, 300, 290} /* AT,GT,E,E,C */
06718 , { 310, 310, 290, 295, 300} /* AT,GT,E,E,G */
06719 , { 340, 340, 290, 310, 300} /* AT,GT,E,E,U/T */
06720 }
06721 , {{ 325, 325, 310, 315, 320} /* AT,GT,E,A,E */
06722 , { 300, 300, 285, 290, 295} /* AT,GT,E,A,A */
06723 , { 300, 300, 280, 285, 290} /* AT,GT,E,A,C */
06724 , { 265, 245, 255, 230, 265} /* AT,GT,E,A,G */
06725 , { 310, 310, 290, 295, 300} /* AT,GT,E,A,U/T */
06726 }
06727 , {{ 300, 300, 280, 300, 290} /* AT,GT,E,C,E */
06728 , { 300, 300, 280, 285, 290} /* AT,GT,E,C,A */
06729 , { 300, 300, 280, 300, 290} /* AT,GT,E,C,C */
06730 , { 290, 290, 270, 275, 280} /* AT,GT,E,C,G */
06731 , { 300, 300, 280, 300, 290} /* AT,GT,E,C,U/T */
06732 }
06733 , {{ 310, 310, 300, 295, 310} /* AT,GT,E,G,E */
06734 , { 285, 265, 275, 250, 285} /* AT,GT,E,G,A */
06735 , { 290, 290, 270, 275, 280} /* AT,GT,E,G,C */
06736 , { 260, 220, 200, 260, 230} /* AT,GT,E,G,G */
06737 , { 310, 310, 290, 295, 300} /* AT,GT,E,G,U/T */
06738 }
06739 , {{ 340, 340, 290, 310, 300} /* AT,GT,E,U/T,E */
06740 , { 300, 300, 280, 285, 290} /* AT,GT,E,U/T,A */
06741 , { 300, 300, 280, 300, 290} /* AT,GT,E,U/T,C */
06742 , { 310, 310, 290, 295, 300} /* AT,GT,E,U/T,G */
06743 , { 330, 330, 280, 285, 290} /* AT,GT,E,U/T,U/T */
06744 }
06745 }
06746 , {{{ 340, 305, 295, 280, 320} /* AT,GT,A,E,E */
06747 , { 315, 280, 285, 260, 310} /* AT,GT,A,E,A */
06748 , { 300, 265, 265, 270, 290} /* AT,GT,A,E,C */
06749 , { 310, 275, 275, 250, 300} /* AT,GT,A,E,G */
06750 , { 340, 305, 275, 280, 300} /* AT,GT,A,E,U/T */
06751 }
06752 , {{ 325, 290, 295, 270, 320} /* AT,GT,A,A,E */
06753 , { 300, 265, 270, 245, 295} /* AT,GT,A,A,A */
06754 , { 300, 265, 265, 240, 290} /* AT,GT,A,A,C */
06755 , { 245, 210, 210, 185, 235} /* AT,GT,A,A,G */
06756 , { 310, 275, 275, 250, 300} /* AT,GT,A,A,U/T */
06757 }
06758 , {{ 300, 265, 265, 270, 290} /* AT,GT,A,C,E */
06759 , { 300, 265, 265, 240, 290} /* AT,GT,A,C,A */
06760 , { 300, 265, 265, 270, 290} /* AT,GT,A,C,C */
06761 , { 290, 255, 255, 230, 280} /* AT,GT,A,C,G */
06762 , { 300, 265, 265, 270, 290} /* AT,GT,A,C,U/T */
06763 }
06764 , {{ 310, 275, 275, 250, 300} /* AT,GT,A,G,E */
06765 , { 265, 230, 230, 205, 255} /* AT,GT,A,G,A */
06766 , { 290, 255, 255, 230, 280} /* AT,GT,A,G,C */
06767 , { 255, 185, 185, 225, 210} /* AT,GT,A,G,G */
06768 , { 310, 275, 275, 250, 300} /* AT,GT,A,G,U/T */
06769 }
06770 , {{ 340, 305, 275, 280, 300} /* AT,GT,A,U/T,E */
06771 , { 300, 265, 265, 240, 290} /* AT,GT,A,U/T,A */
06772 , { 300, 265, 265, 270, 290} /* AT,GT,A,U/T,C */

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06773      , {      310,      275,      275,      250,      300} /* AT,GT,A,U/T,G */
06774      , {      330,      295,      265,      240,      290} /* AT,GT,A,U/T,U/T */
06775      }
06776      }
06777      , {{{      300,      290,      300,      295,      295} /* AT,GT,C,E,E */
06778      , {      290,      280,      290,      285,      285} /* AT,GT,C,E,A */
06779      , {      275,      260,      275,      265,      270} /* AT,GT,C,E,C */
06780      , {      285,      270,      285,      275,      280} /* AT,GT,C,E,G */
06781      , {      285,      270,      285,      275,      280} /* AT,GT,C,E,U/T */
06782      }
06783      , {{{      300,      290,      300,      295,      295} /* AT,GT,C,A,E */
06784      , {      275,      265,      275,      270,      270} /* AT,GT,C,A,A */
06785      , {      275,      260,      275,      265,      270} /* AT,GT,C,A,C */
06786      , {      250,      205,      250,      210,      245} /* AT,GT,C,A,G */
06787      , {      285,      270,      285,      275,      280} /* AT,GT,C,A,U/T */
06788      }
06789      , {{{      275,      260,      275,      265,      270} /* AT,GT,C,C,E */
06790      , {      275,      260,      275,      265,      270} /* AT,GT,C,C,A */
06791      , {      275,      260,      275,      265,      270} /* AT,GT,C,C,C */
06792      , {      265,      250,      265,      255,      260} /* AT,GT,C,C,G */
06793      , {      275,      260,      275,      265,      270} /* AT,GT,C,C,U/T */
06794      }
06795      , {{{      295,      270,      295,      275,      290} /* AT,GT,C,G,E */
06796      , {      270,      225,      270,      230,      265} /* AT,GT,C,G,A */
06797      , {      265,      250,      265,      255,      260} /* AT,GT,C,G,C */
06798      , {      195,      180,      195,      185,      190} /* AT,GT,C,G,G */
06799      , {      285,      270,      285,      275,      280} /* AT,GT,C,G,U/T */
06800      }
06801      , {{{      285,      270,      285,      275,      280} /* AT,GT,C,U/T,E */
06802      , {      275,      260,      275,      265,      270} /* AT,GT,C,U/T,A */
06803      , {      275,      260,      275,      265,      270} /* AT,GT,C,U/T,C */
06804      , {      285,      270,      285,      275,      280} /* AT,GT,C,U/T,G */
06805      , {      275,      260,      275,      265,      270} /* AT,GT,C,U/T,U/T */
06806      }
06807      }
06808      , {{{      320,      245,      310,      255,      320} /* AT,GT,G,E,E */
06809      , {      310,      225,      300,      225,      310} /* AT,GT,G,E,A */
06810      , {      290,      235,      280,      180,      290} /* AT,GT,G,E,C */
06811      , {      300,      215,      290,      255,      300} /* AT,GT,G,E,G */
06812      , {      300,      245,      290,      255,      300} /* AT,GT,G,E,U/T */
06813      }
06814      , {{{      320,      235,      310,      215,      320} /* AT,GT,G,A,E */
06815      , {      295,      210,      285,      185,      295} /* AT,GT,G,A,A */
06816      , {      290,      205,      280,      180,      290} /* AT,GT,G,A,C */
06817      , {      235,      150,      225,      190,      235} /* AT,GT,G,A,G */
06818      , {      300,      215,      290,      190,      300} /* AT,GT,G,A,U/T */
06819      }
06820      , {{{      290,      235,      280,      180,      290} /* AT,GT,G,C,E */
06821      , {      290,      205,      280,      180,      290} /* AT,GT,G,C,A */
06822      , {      290,      235,      280,      180,      290} /* AT,GT,G,C,C */
06823      , {      280,      195,      270,      170,      280} /* AT,GT,G,C,G */
06824      , {      290,      235,      280,      180,      290} /* AT,GT,G,C,U/T */
06825      }
06826      , {{{      300,      215,      290,      255,      300} /* AT,GT,G,G,E */
06827      , {      255,      170,      245,      210,      255} /* AT,GT,G,G,A */
06828      , {      280,      195,      270,      170,      280} /* AT,GT,G,G,C */
06829      , {      260,      190,      200,      230,      210} /* AT,GT,G,G,G */
06830      , {      300,      215,      290,      190,      300} /* AT,GT,G,G,U/T */
06831      }
06832      , {{{      300,      245,      290,      255,      300} /* AT,GT,G,U/T,E */
06833      , {      290,      205,      280,      180,      290} /* AT,GT,G,U/T,A */
06834      , {      290,      235,      280,      180,      290} /* AT,GT,G,U/T,C */
06835      , {      300,      215,      290,      190,      300} /* AT,GT,G,U/T,G */
06836      , {      290,      205,      280,      245,      290} /* AT,GT,G,U/T,U/T */
06837      }
06838      }
06839      , {{{      315,      315,      295,      315,      270} /* AT,GT,U/T,E,E */
06840      , {      305,      305,      285,      305,      260} /* AT,GT,U/T,E,A */
06841      , {      290,      285,      270,      285,      215} /* AT,GT,U/T,E,C */
06842      , {      300,      295,      280,      295,      225} /* AT,GT,U/T,E,G */
06843      , {      300,      295,      280,      295,      225} /* AT,GT,U/T,E,U/T */
06844      }
06845      , {{{      315,      315,      295,      315,      270} /* AT,GT,U/T,A,E */
06846      , {      290,      290,      270,      290,      245} /* AT,GT,U/T,A,A */
06847      , {      290,      285,      270,      285,      215} /* AT,GT,U/T,A,C */
06848      , {      265,      230,      245,      230,      160} /* AT,GT,U/T,A,G */
06849      , {      300,      295,      280,      295,      225} /* AT,GT,U/T,A,U/T */
06850      }
06851      , {{{      290,      285,      270,      285,      215} /* AT,GT,U/T,C,E */
06852      , {      290,      285,      270,      285,      215} /* AT,GT,U/T,C,A */
06853      , {      290,      285,      270,      285,      215} /* AT,GT,U/T,C,C */
06854      , {      280,      275,      260,      275,      205} /* AT,GT,U/T,C,G */
06855      , {      290,      285,      270,      285,      215} /* AT,GT,U/T,C,U/T */
06856      }
06857      , {{{      310,      295,      290,      295,      225} /* AT,GT,U/T,G,E */
06858      , {      285,      250,      265,      250,      180} /* AT,GT,U/T,G,A */
06859      , {      280,      275,      260,      275,      205} /* AT,GT,U/T,G,C */

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06860      , {      230,      205,      190,      205,      200} /* AT,GT,U/T,G,G */
06861      , {      300,      295,      280,      295,      225} /* AT,GT,U/T,G,U/T */
06862      }
06863      , {{      300,      295,      280,      295,      225} /* AT,GT,U/T,U/T,E */
06864      , {      290,      285,      270,      285,      215} /* AT,GT,U/T,U/T,A */
06865      , {      290,      285,      270,      285,      215} /* AT,GT,U/T,U/T,C */
06866      , {      300,      295,      280,      295,      225} /* AT,GT,U/T,U/T,G */
06867      , {      290,      285,      270,      285,      215} /* AT,GT,U/T,U/T,U/T */
06868      }
06869      }
06870      }
06871      , {{{      330,      325,      320,      295,      330} /* AT,UG,E,E,E */
06872      , {      330,      310,      320,      295,      330} /* AT,UG,E,E,A */
06873      , {      285,      285,      265,      285,      275} /* AT,UG,E,E,C */
06874      , {      295,      295,      275,      280,      285} /* AT,UG,E,E,G */
06875      , {      325,      325,      275,      295,      285} /* AT,UG,E,E,U/T */
06876      }
06877      , {{      295,      295,      275,      280,      285} /* AT,UG,E,A,E */
06878      , {      250,      250,      235,      240,      245} /* AT,UG,E,A,A */
06879      , {      285,      285,      265,      270,      275} /* AT,UG,E,A,C */
06880      , {      220,      200,      210,      190,      220} /* AT,UG,E,A,G */
06881      , {      295,      295,      275,      280,      285} /* AT,UG,E,A,U/T */
06882      }
06883      , {{      285,      285,      265,      285,      275} /* AT,UG,E,C,E */
06884      , {      285,      285,      265,      270,      275} /* AT,UG,E,C,A */
06885      , {      285,      285,      265,      285,      275} /* AT,UG,E,C,C */
06886      , {      270,      270,      250,      255,      260} /* AT,UG,E,C,G */
06887      , {      285,      285,      265,      285,      275} /* AT,UG,E,C,U/T */
06888      }
06889      , {{      330,      310,      320,      295,      330} /* AT,UG,E,G,E */
06890      , {      305,      285,      295,      270,      305} /* AT,UG,E,G,A */
06891      , {      280,      280,      260,      265,      270} /* AT,UG,E,G,C */
06892      , {      245,      205,      185,      245,      215} /* AT,UG,E,G,G */
06893      , {      295,      295,      275,      280,      285} /* AT,UG,E,G,U/T */
06894      }
06895      , {{      325,      325,      275,      295,      285} /* AT,UG,E,U/T,E */
06896      , {      295,      295,      275,      280,      285} /* AT,UG,E,U/T,A */
06897      , {      285,      285,      265,      285,      275} /* AT,UG,E,U/T,C */
06898      , {      295,      295,      275,      280,      285} /* AT,UG,E,U/T,G */
06899      , {      315,      315,      265,      270,      275} /* AT,UG,E,U/T,U/T */
06900      }
06901      }
06902      , {{{      325,      290,      275,      265,      300} /* AT,UG,A,E,E */
06903      , {      310,      275,      275,      250,      300} /* AT,UG,A,E,A */
06904      , {      285,      250,      250,      255,      275} /* AT,UG,A,E,C */
06905      , {      295,      260,      260,      235,      285} /* AT,UG,A,E,G */
06906      , {      325,      290,      260,      265,      285} /* AT,UG,A,E,U/T */
06907      }
06908      , {{      295,      260,      260,      235,      285} /* AT,UG,A,A,E */
06909      , {      250,      215,      220,      195,      245} /* AT,UG,A,A,A */
06910      , {      285,      250,      250,      225,      275} /* AT,UG,A,A,C */
06911      , {      200,      165,      170,      145,      195} /* AT,UG,A,A,G */
06912      , {      295,      260,      260,      235,      285} /* AT,UG,A,A,U/T */
06913      }
06914      , {{      285,      250,      250,      255,      275} /* AT,UG,A,C,E */
06915      , {      285,      250,      250,      225,      275} /* AT,UG,A,C,A */
06916      , {      285,      250,      250,      255,      275} /* AT,UG,A,C,C */
06917      , {      270,      235,      235,      210,      260} /* AT,UG,A,C,G */
06918      , {      285,      250,      250,      255,      275} /* AT,UG,A,C,U/T */
06919      }
06920      , {{      310,      275,      275,      250,      300} /* AT,UG,A,G,E */
06921      , {      285,      250,      250,      225,      275} /* AT,UG,A,G,A */
06922      , {      280,      245,      245,      220,      270} /* AT,UG,A,G,C */
06923      , {      240,      170,      170,      210,      195} /* AT,UG,A,G,G */
06924      , {      295,      260,      260,      235,      285} /* AT,UG,A,G,U/T */
06925      }
06926      , {{      325,      290,      260,      265,      285} /* AT,UG,A,U/T,E */
06927      , {      295,      260,      260,      235,      285} /* AT,UG,A,U/T,A */
06928      , {      285,      250,      250,      255,      275} /* AT,UG,A,U/T,C */
06929      , {      295,      260,      260,      235,      285} /* AT,UG,A,U/T,G */
06930      , {      315,      280,      250,      225,      275} /* AT,UG,A,U/T,U/T */
06931      }
06932      }
06933      , {{{      315,      270,      315,      275,      310} /* AT,UG,C,E,E */
06934      , {      315,      270,      315,      275,      310} /* AT,UG,C,E,A */
06935      , {      260,      245,      260,      250,      255} /* AT,UG,C,E,C */
06936      , {      270,      255,      270,      260,      265} /* AT,UG,C,E,G */
06937      , {      270,      255,      270,      260,      265} /* AT,UG,C,E,U/T */
06938      }
06939      , {{      270,      255,      270,      260,      265} /* AT,UG,C,A,E */
06940      , {      225,      215,      225,      220,      220} /* AT,UG,C,A,A */
06941      , {      260,      245,      260,      250,      255} /* AT,UG,C,A,C */
06942      , {      205,      165,      205,      170,      200} /* AT,UG,C,A,G */
06943      , {      270,      255,      270,      260,      265} /* AT,UG,C,A,U/T */
06944      }
06945      , {{      260,      245,      260,      250,      255} /* AT,UG,C,C,E */
06946      , {      260,      245,      260,      250,      255} /* AT,UG,C,C,A */

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06947 , { 260, 245, 260, 250, 255} /* AT,UG,C,C,C */
06948 , { 245, 230, 245, 235, 240} /* AT,UG,C,C,G */
06949 , { 260, 245, 260, 250, 255} /* AT,UG,C,C,U/T */
06950 }
06951 , { { 315, 270, 315, 275, 310} /* AT,UG,C,G,E */
06952 , { 290, 245, 290, 250, 285} /* AT,UG,C,G,A */
06953 , { 255, 240, 255, 245, 250} /* AT,UG,C,G,C */
06954 , { 180, 165, 180, 170, 175} /* AT,UG,C,G,G */
06955 , { 270, 255, 270, 260, 265} /* AT,UG,C,G,U/T */
06956 }
06957 , { { 270, 255, 270, 260, 265} /* AT,UG,C,U/T,E */
06958 , { 270, 255, 270, 260, 265} /* AT,UG,C,U/T,A */
06959 , { 260, 245, 260, 250, 255} /* AT,UG,C,U/T,C */
06960 , { 270, 255, 270, 260, 265} /* AT,UG,C,U/T,G */
06961 , { 260, 245, 260, 250, 255} /* AT,UG,C,U/T,U/T */
06962 }
06963 }
06964 , { { { 300, 230, 290, 255, 300} /* AT,UG,G,E,E */
06965 , { 300, 215, 290, 255, 300} /* AT,UG,G,E,A */
06966 , { 275, 220, 265, 165, 275} /* AT,UG,G,E,C */
06967 , { 285, 200, 275, 240, 285} /* AT,UG,G,E,G */
06968 , { 285, 230, 275, 240, 285} /* AT,UG,G,E,U/T */
06969 }
06970 , { { 285, 200, 275, 175, 285} /* AT,UG,G,A,E */
06971 , { 245, 160, 235, 135, 245} /* AT,UG,G,A,A */
06972 , { 275, 190, 265, 165, 275} /* AT,UG,G,A,C */
06973 , { 195, 110, 185, 150, 195} /* AT,UG,G,A,G */
06974 , { 285, 200, 275, 175, 285} /* AT,UG,G,A,U/T */
06975 }
06976 , { { 275, 220, 265, 165, 275} /* AT,UG,G,C,E */
06977 , { 275, 190, 265, 165, 275} /* AT,UG,G,C,A */
06978 , { 275, 220, 265, 165, 275} /* AT,UG,G,C,C */
06979 , { 260, 175, 250, 150, 260} /* AT,UG,G,C,G */
06980 , { 275, 220, 265, 165, 275} /* AT,UG,G,C,U/T */
06981 }
06982 , { { 300, 215, 290, 255, 300} /* AT,UG,G,G,E */
06983 , { 275, 190, 265, 230, 275} /* AT,UG,G,G,A */
06984 , { 270, 185, 260, 160, 270} /* AT,UG,G,G,C */
06985 , { 245, 175, 185, 215, 195} /* AT,UG,G,G,G */
06986 , { 285, 200, 275, 175, 285} /* AT,UG,G,G,U/T */
06987 }
06988 , { { 285, 230, 275, 240, 285} /* AT,UG,G,U/T,E */
06989 , { 285, 200, 275, 175, 285} /* AT,UG,G,U/T,A */
06990 , { 275, 220, 265, 165, 275} /* AT,UG,G,U/T,C */
06991 , { 285, 200, 275, 175, 285} /* AT,UG,G,U/T,G */
06992 , { 275, 190, 265, 230, 275} /* AT,UG,G,U/T,U/T */
06993 }
06994 }
06995 , { { { 330, 295, 310, 295, 225} /* AT,UG,U/T,E,E */
06996 , { 330, 295, 310, 295, 225} /* AT,UG,U/T,E,A */
06997 , { 275, 270, 255, 270, 200} /* AT,UG,U/T,E,C */
06998 , { 285, 280, 265, 280, 210} /* AT,UG,U/T,E,G */
06999 , { 285, 280, 265, 280, 210} /* AT,UG,U/T,E,U/T */
07000 }
07001 , { { 285, 280, 265, 280, 220} /* AT,UG,U/T,A,E */
07002 , { 240, 240, 220, 240, 195} /* AT,UG,U/T,A,A */
07003 , { 275, 270, 255, 270, 200} /* AT,UG,U/T,A,C */
07004 , { 220, 190, 200, 190, 115} /* AT,UG,U/T,A,G */
07005 , { 285, 280, 265, 280, 210} /* AT,UG,U/T,A,U/T */
07006 }
07007 , { { 275, 270, 255, 270, 200} /* AT,UG,U/T,C,E */
07008 , { 275, 270, 255, 270, 200} /* AT,UG,U/T,C,A */
07009 , { 275, 270, 255, 270, 200} /* AT,UG,U/T,C,C */
07010 , { 260, 255, 240, 255, 185} /* AT,UG,U/T,C,G */
07011 , { 275, 270, 255, 270, 200} /* AT,UG,U/T,C,U/T */
07012 }
07013 , { { 330, 295, 310, 295, 225} /* AT,UG,U/T,G,E */
07014 , { 305, 270, 285, 270, 200} /* AT,UG,U/T,G,A */
07015 , { 270, 265, 250, 265, 195} /* AT,UG,U/T,G,C */
07016 , { 215, 190, 175, 190, 185} /* AT,UG,U/T,G,G */
07017 , { 285, 280, 265, 280, 210} /* AT,UG,U/T,G,U/T */
07018 }
07019 , { { 285, 280, 265, 280, 210} /* AT,UG,U/T,U/T,E */
07020 , { 285, 280, 265, 280, 210} /* AT,UG,U/T,U/T,A */
07021 , { 275, 270, 255, 270, 200} /* AT,UG,U/T,U/T,C */
07022 , { 285, 280, 265, 280, 210} /* AT,UG,U/T,U/T,G */
07023 , { 275, 270, 255, 270, 200} /* AT,UG,U/T,U/T,U/T */
07024 }
07025 }
07026 }
07027 , { { { { 295, 295, 275, 285, 285} /* AT,AT,E,E,E */
07028 , { 295, 295, 275, 280, 285} /* AT,AT,E,E,A */
07029 , { 270, 270, 250, 270, 260} /* AT,AT,E,E,C */
07030 , { 285, 285, 270, 275, 280} /* AT,AT,E,E,G */
07031 , { 285, 285, 265, 285, 275} /* AT,AT,E,E,U/T */
07032 }
07033 , { { 295, 295, 275, 280, 285} /* AT,AT,E,A,E */

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07034      , {      260,      260,      240,      245,      250} /* AT,AT,E,A,A */
07035      , {      255,      255,      240,      245,      250} /* AT,AT,E,A,C */
07036      , {      220,      200,      210,      190,      220} /* AT,AT,E,A,G */
07037      , {      280,      280,      265,      270,      275} /* AT,AT,E,A,U/T */
07038      }
07039      , { {      275,      275,      260,      275,      270} /* AT,AT,E,C,E */
07040      , {      260,      260,      245,      250,      255} /* AT,AT,E,C,A */
07041      , {      270,      270,      250,      270,      260} /* AT,AT,E,C,C */
07042      , {      275,      275,      260,      265,      270} /* AT,AT,E,C,G */
07043      , {      265,      265,      245,      265,      255} /* AT,AT,E,C,U/T */
07044      }
07045      , { {      285,      280,      275,      270,      285} /* AT,AT,E,G,E */
07046      , {      255,      235,      245,      225,      255} /* AT,AT,E,G,A */
07047      , {      260,      260,      245,      250,      255} /* AT,AT,E,G,C */
07048      , {      220,      180,      160,      220,      185} /* AT,AT,E,G,G */
07049      , {      280,      280,      265,      270,      275} /* AT,AT,E,G,U/T */
07050      }
07051      , { {      285,      285,      270,      285,      280} /* AT,AT,E,U/T,E */
07052      , {      285,      285,      270,      275,      280} /* AT,AT,E,U/T,A */
07053      , {      265,      265,      245,      265,      255} /* AT,AT,E,U/T,C */
07054      , {      285,      285,      270,      275,      280} /* AT,AT,E,U/T,G */
07055      , {      240,      240,      190,      195,      200} /* AT,AT,E,U/T,U/T */
07056      }
07057      }
07058      , { { {      295,      260,      260,      255,      285} /* AT,AT,A,E,E */
07059      , {      295,      260,      260,      235,      285} /* AT,AT,A,E,A */
07060      , {      270,      235,      235,      240,      260} /* AT,AT,A,E,C */
07061      , {      285,      250,      255,      230,      280} /* AT,AT,A,E,G */
07062      , {      285,      250,      250,      255,      275} /* AT,AT,A,E,U/T */
07063      }
07064      , { {      295,      260,      260,      235,      285} /* AT,AT,A,A,E */
07065      , {      260,      225,      225,      200,      250} /* AT,AT,A,A,A */
07066      , {      255,      220,      225,      200,      250} /* AT,AT,A,A,C */
07067      , {      200,      165,      170,      145,      195} /* AT,AT,A,A,G */
07068      , {      280,      245,      250,      225,      275} /* AT,AT,A,A,U/T */
07069      }
07070      , { {      275,      240,      245,      245,      270} /* AT,AT,A,C,E */
07071      , {      260,      225,      230,      205,      255} /* AT,AT,A,C,A */
07072      , {      270,      235,      235,      240,      260} /* AT,AT,A,C,C */
07073      , {      275,      240,      245,      220,      270} /* AT,AT,A,C,G */
07074      , {      265,      230,      230,      235,      255} /* AT,AT,A,C,U/T */
07075      }
07076      , { {      280,      245,      250,      225,      275} /* AT,AT,A,G,E */
07077      , {      235,      200,      205,      180,      230} /* AT,AT,A,G,A */
07078      , {      260,      225,      230,      205,      255} /* AT,AT,A,G,C */
07079      , {      215,      140,      145,      185,      170} /* AT,AT,A,G,G */
07080      , {      280,      245,      250,      225,      275} /* AT,AT,A,G,U/T */
07081      }
07082      , { {      285,      250,      255,      255,      280} /* AT,AT,A,U/T,E */
07083      , {      285,      250,      255,      230,      280} /* AT,AT,A,U/T,A */
07084      , {      265,      230,      230,      235,      255} /* AT,AT,A,U/T,C */
07085      , {      285,      250,      255,      230,      280} /* AT,AT,A,U/T,G */
07086      , {      240,      205,      175,      150,      200} /* AT,AT,A,U/T,U/T */
07087      }
07088      }
07089      , { { {      270,      255,      270,      260,      265} /* AT,AT,C,E,E */
07090      , {      270,      255,      270,      260,      265} /* AT,AT,C,E,A */
07091      , {      245,      230,      245,      235,      240} /* AT,AT,C,E,C */
07092      , {      260,      250,      260,      255,      255} /* AT,AT,C,E,G */
07093      , {      260,      245,      260,      250,      255} /* AT,AT,C,E,U/T */
07094      }
07095      , { {      270,      255,      270,      260,      265} /* AT,AT,C,A,E */
07096      , {      235,      220,      235,      225,      230} /* AT,AT,C,A,A */
07097      , {      230,      220,      230,      225,      225} /* AT,AT,C,A,C */
07098      , {      205,      165,      205,      170,      200} /* AT,AT,C,A,G */
07099      , {      255,      245,      255,      250,      250} /* AT,AT,C,A,U/T */
07100      }
07101      , { {      250,      240,      250,      245,      245} /* AT,AT,C,C,E */
07102      , {      235,      225,      235,      230,      230} /* AT,AT,C,C,A */
07103      , {      245,      230,      245,      235,      240} /* AT,AT,C,C,C */
07104      , {      250,      240,      245,      245,      245} /* AT,AT,C,C,G */
07105      , {      240,      225,      240,      230,      235} /* AT,AT,C,C,U/T */
07106      }
07107      , { {      270,      245,      270,      250,      265} /* AT,AT,C,G,E */
07108      , {      240,      200,      240,      205,      235} /* AT,AT,C,G,A */
07109      , {      235,      225,      235,      230,      230} /* AT,AT,C,G,C */
07110      , {      150,      140,      150,      145,      145} /* AT,AT,C,G,G */
07111      , {      255,      245,      255,      250,      250} /* AT,AT,C,G,U/T */
07112      }
07113      , { {      260,      250,      260,      255,      255} /* AT,AT,C,U/T,E */
07114      , {      260,      250,      260,      255,      255} /* AT,AT,C,U/T,A */
07115      , {      240,      225,      240,      230,      235} /* AT,AT,C,U/T,C */
07116      , {      260,      250,      260,      255,      255} /* AT,AT,C,U/T,G */
07117      , {      185,      170,      185,      175,      180} /* AT,AT,C,U/T,U/T */
07118      }
07119      }
07120      , { { {      285,      220,      275,      220,      285} /* AT,AT,G,E,E */

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07121      , {      285,      200,      275,      215,      285} /* AT,AT,G,E,A */
07122      , {      260,      205,      250,      150,      260} /* AT,AT,G,E,C */
07123      , {      280,      195,      270,      220,      280} /* AT,AT,G,E,G */
07124      , {      275,      220,      265,      185,      275} /* AT,AT,G,E,U/T */
07125      }
07126      , { {      285,      200,      275,      180,      285} /* AT,AT,G,A,E */
07127      , {      250,      165,      240,      140,      250} /* AT,AT,G,A,A */
07128      , {      250,      165,      240,      140,      250} /* AT,AT,G,A,C */
07129      , {      195,      110,      185,      150,      195} /* AT,AT,G,A,G */
07130      , {      275,      190,      265,      165,      275} /* AT,AT,G,A,U/T */
07131      }
07132      , { {      270,      210,      260,      160,      270} /* AT,AT,G,C,E */
07133      , {      255,      170,      245,      145,      255} /* AT,AT,G,C,A */
07134      , {      260,      205,      250,      150,      260} /* AT,AT,G,C,C */
07135      , {      270,      185,      260,      160,      270} /* AT,AT,G,C,G */
07136      , {      255,      200,      245,      145,      255} /* AT,AT,G,C,U/T */
07137      }
07138      , { {      275,      190,      265,      220,      275} /* AT,AT,G,G,E */
07139      , {      230,      145,      220,      185,      230} /* AT,AT,G,G,A */
07140      , {      255,      170,      245,      145,      255} /* AT,AT,G,G,C */
07141      , {      220,      150,      160,      190,      170} /* AT,AT,G,G,G */
07142      , {      275,      190,      265,      165,      275} /* AT,AT,G,G,U/T */
07143      }
07144      , { {      280,      220,      270,      185,      280} /* AT,AT,G,U/T,E */
07145      , {      280,      195,      270,      170,      280} /* AT,AT,G,U/T,A */
07146      , {      255,      200,      245,      145,      255} /* AT,AT,G,U/T,C */
07147      , {      280,      195,      270,      170,      280} /* AT,AT,G,U/T,G */
07148      , {      200,      115,      190,      155,      200} /* AT,AT,G,U/T,U/T */
07149      }
07150      }
07151      , { { {      285,      280,      265,      280,      240} /* AT,AT,U/T,E,E */
07152      , {      285,      280,      265,      280,      240} /* AT,AT,U/T,E,A */
07153      , {      260,      255,      240,      255,      185} /* AT,AT,U/T,E,C */
07154      , {      275,      275,      255,      275,      200} /* AT,AT,U/T,E,G */
07155      , {      275,      270,      255,      270,      200} /* AT,AT,U/T,E,U/T */
07156      }
07157      , { {      285,      280,      265,      280,      240} /* AT,AT,U/T,A,E */
07158      , {      250,      245,      230,      245,      205} /* AT,AT,U/T,A,A */
07159      , {      245,      245,      225,      245,      170} /* AT,AT,U/T,A,C */
07160      , {      220,      190,      200,      190,      115} /* AT,AT,U/T,A,G */
07161      , {      270,      270,      250,      270,      195} /* AT,AT,U/T,A,U/T */
07162      }
07163      , { {      265,      265,      245,      265,      190} /* AT,AT,U/T,C,E */
07164      , {      250,      250,      230,      250,      175} /* AT,AT,U/T,C,A */
07165      , {      260,      255,      240,      255,      185} /* AT,AT,U/T,C,C */
07166      , {      265,      265,      245,      265,      190} /* AT,AT,U/T,C,G */
07167      , {      255,      250,      235,      250,      180} /* AT,AT,U/T,C,U/T */
07168      }
07169      , { {      285,      270,      265,      270,      195} /* AT,AT,U/T,G,E */
07170      , {      255,      225,      235,      225,      150} /* AT,AT,U/T,G,A */
07171      , {      250,      250,      230,      250,      175} /* AT,AT,U/T,G,C */
07172      , {      185,      165,      145,      165,      155} /* AT,AT,U/T,G,G */
07173      , {      270,      270,      250,      270,      195} /* AT,AT,U/T,G,U/T */
07174      }
07175      , { {      275,      275,      255,      275,      200} /* AT,AT,U/T,U/T,E */
07176      , {      275,      275,      255,      275,      200} /* AT,AT,U/T,U/T,A */
07177      , {      255,      250,      235,      250,      180} /* AT,AT,U/T,U/T,C */
07178      , {      275,      275,      255,      275,      200} /* AT,AT,U/T,U/T,G */
07179      , {      200,      195,      180,      195,      125} /* AT,AT,U/T,U/T,U/T */
07180      }
07181      }
07182      }
07183      , { { { {      295,      295,      275,      295,      285} /* AT,UA,E,E,E */
07184      , {      295,      295,      275,      280,      285} /* AT,UA,E,E,A */
07185      , {      280,      280,      260,      280,      270} /* AT,UA,E,E,C */
07186      , {      295,      295,      275,      280,      285} /* AT,UA,E,E,G */
07187      , {      295,      295,      275,      295,      285} /* AT,UA,E,E,U/T */
07188      }
07189      , { { {      295,      295,      275,      280,      285} /* AT,UA,E,A,E */
07190      , {      265,      265,      245,      250,      255} /* AT,UA,E,A,A */
07191      , {      245,      245,      230,      235,      240} /* AT,UA,E,A,C */
07192      , {      230,      210,      220,      200,      230} /* AT,UA,E,A,G */
07193      , {      270,      270,      255,      260,      265} /* AT,UA,E,A,U/T */
07194      }
07195      , { { {      295,      295,      275,      295,      285} /* AT,UA,E,C,E */
07196      , {      270,      270,      250,      255,      260} /* AT,UA,E,C,A */
07197      , {      280,      280,      260,      280,      270} /* AT,UA,E,C,C */
07198      , {      295,      295,      275,      280,      285} /* AT,UA,E,C,G */
07199      , {      275,      275,      255,      275,      265} /* AT,UA,E,C,U/T */
07200      }
07201      , { { {      265,      265,      250,      255,      260} /* AT,UA,E,G,E */
07202      , {      235,      215,      225,      205,      235} /* AT,UA,E,G,A */
07203      , {      245,      245,      230,      235,      240} /* AT,UA,E,G,C */
07204      , {      230,      190,      170,      230,      195} /* AT,UA,E,G,G */
07205      , {      265,      265,      250,      255,      260} /* AT,UA,E,G,U/T */
07206      }
07207      , { { {      295,      295,      275,      280,      285} /* AT,UA,E,U/T,E */

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07208 , { 295, 295, 275, 280, 285} /* AT,UA,E,U/T,A */
07209 , { 260, 260, 240, 260, 250} /* AT,UA,E,U/T,C */
07210 , { 295, 295, 275, 280, 285} /* AT,UA,E,U/T,G */
07211 , { 250, 250, 205, 210, 215} /* AT,UA,E,U/T,U/T */
07212 }
07213 }
07214 ,{{{ 295, 260, 260, 265, 285} /* AT,UA,A,E,E */
07215 , { 295, 260, 260, 235, 285} /* AT,UA,A,E,A */
07216 , { 280, 245, 245, 250, 270} /* AT,UA,A,E,C */
07217 , { 295, 260, 260, 235, 285} /* AT,UA,A,E,G */
07218 , { 295, 260, 260, 265, 285} /* AT,UA,A,E,U/T */
07219 }
07220 ,{{{ 295, 260, 260, 235, 285} /* AT,UA,A,A,E */
07221 , { 265, 230, 230, 205, 255} /* AT,UA,A,A,A */
07222 , { 245, 210, 215, 190, 240} /* AT,UA,A,A,C */
07223 , { 210, 175, 180, 155, 205} /* AT,UA,A,A,G */
07224 , { 270, 235, 240, 215, 265} /* AT,UA,A,A,U/T */
07225 }
07226 ,{{{ 295, 260, 260, 265, 285} /* AT,UA,A,C,E */
07227 , { 270, 235, 235, 210, 260} /* AT,UA,A,C,A */
07228 , { 280, 245, 245, 250, 270} /* AT,UA,A,C,C */
07229 , { 295, 260, 260, 235, 285} /* AT,UA,A,C,G */
07230 , { 275, 240, 240, 245, 265} /* AT,UA,A,C,U/T */
07231 }
07232 ,{{{ 265, 230, 235, 220, 260} /* AT,UA,A,G,E */
07233 , { 215, 180, 185, 160, 210} /* AT,UA,A,G,A */
07234 , { 245, 210, 215, 190, 240} /* AT,UA,A,G,C */
07235 , { 225, 150, 155, 195, 180} /* AT,UA,A,G,G */
07236 , { 265, 230, 235, 210, 260} /* AT,UA,A,G,U/T */
07237 }
07238 ,{{{ 295, 260, 260, 250, 285} /* AT,UA,A,U/T,E */
07239 , { 295, 260, 260, 235, 285} /* AT,UA,A,U/T,A */
07240 , { 260, 225, 225, 230, 250} /* AT,UA,A,U/T,C */
07241 , { 295, 260, 260, 235, 285} /* AT,UA,A,U/T,G */
07242 , { 250, 215, 190, 165, 215} /* AT,UA,A,U/T,U/T */
07243 }
07244 }
07245 ,{{{ 270, 255, 270, 260, 265} /* AT,UA,C,E,E */
07246 , { 270, 255, 270, 260, 265} /* AT,UA,C,E,A */
07247 , { 255, 240, 255, 245, 250} /* AT,UA,C,E,C */
07248 , { 270, 255, 270, 260, 265} /* AT,UA,C,E,G */
07249 , { 270, 255, 270, 260, 265} /* AT,UA,C,E,U/T */
07250 }
07251 ,{{{ 270, 255, 270, 260, 265} /* AT,UA,C,A,E */
07252 , { 240, 225, 240, 230, 235} /* AT,UA,C,A,A */
07253 , { 220, 210, 220, 215, 215} /* AT,UA,C,A,C */
07254 , { 215, 175, 215, 180, 210} /* AT,UA,C,A,G */
07255 , { 245, 235, 245, 240, 240} /* AT,UA,C,A,U/T */
07256 }
07257 ,{{{ 270, 255, 270, 260, 265} /* AT,UA,C,C,E */
07258 , { 245, 230, 245, 235, 240} /* AT,UA,C,C,A */
07259 , { 255, 240, 255, 245, 250} /* AT,UA,C,C,C */
07260 , { 270, 255, 270, 260, 265} /* AT,UA,C,C,G */
07261 , { 250, 235, 250, 240, 245} /* AT,UA,C,C,U/T */
07262 }
07263 ,{{{ 245, 230, 245, 235, 240} /* AT,UA,C,G,E */
07264 , { 220, 180, 220, 185, 215} /* AT,UA,C,G,A */
07265 , { 220, 210, 220, 215, 215} /* AT,UA,C,G,C */
07266 , { 160, 150, 160, 155, 155} /* AT,UA,C,G,G */
07267 , { 240, 230, 240, 235, 235} /* AT,UA,C,G,U/T */
07268 }
07269 ,{{{ 270, 255, 270, 260, 265} /* AT,UA,C,U/T,E */
07270 , { 270, 255, 270, 260, 265} /* AT,UA,C,U/T,A */
07271 , { 235, 220, 235, 225, 230} /* AT,UA,C,U/T,C */
07272 , { 270, 255, 270, 260, 265} /* AT,UA,C,U/T,G */
07273 , { 195, 185, 195, 190, 190} /* AT,UA,C,U/T,U/T */
07274 }
07275 }
07276 ,{{{ 285, 230, 275, 230, 285} /* AT,UA,G,E,E */
07277 , { 285, 200, 275, 195, 285} /* AT,UA,G,E,A */
07278 , { 270, 215, 260, 160, 270} /* AT,UA,G,E,C */
07279 , { 285, 200, 275, 230, 285} /* AT,UA,G,E,G */
07280 , { 285, 230, 275, 200, 285} /* AT,UA,G,E,U/T */
07281 }
07282 ,{{{ 285, 200, 275, 190, 285} /* AT,UA,G,A,E */
07283 , { 255, 170, 245, 145, 255} /* AT,UA,G,A,A */
07284 , { 240, 155, 230, 130, 240} /* AT,UA,G,A,C */
07285 , { 205, 120, 195, 160, 205} /* AT,UA,G,A,G */
07286 , { 265, 180, 255, 155, 265} /* AT,UA,G,A,U/T */
07287 }
07288 ,{{{ 285, 230, 275, 175, 285} /* AT,UA,G,C,E */
07289 , { 260, 175, 250, 150, 260} /* AT,UA,G,C,A */
07290 , { 270, 215, 260, 160, 270} /* AT,UA,G,C,C */
07291 , { 285, 200, 275, 175, 285} /* AT,UA,G,C,G */
07292 , { 265, 210, 255, 155, 265} /* AT,UA,G,C,U/T */
07293 }
07294 ,{{{ 260, 185, 250, 225, 260} /* AT,UA,G,G,E */
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07295      , {      210,      125,      200,      165,      210} /* AT,UA,G,G,A */
07296      , {      240,      155,      230,      130,      240} /* AT,UA,G,G,C */
07297      , {      230,      160,      170,      200,      180} /* AT,UA,G,G,G */
07298      , {      260,      175,      250,      150,      260} /* AT,UA,G,G,U/T */
07299      }
07300      , {{      285,      215,      275,      200,      285} /* AT,UA,G,U/T,E */
07301      , {      285,      200,      275,      175,      285} /* AT,UA,G,U/T,A */
07302      , {      250,      195,      240,      140,      250} /* AT,UA,G,U/T,C */
07303      , {      285,      200,      275,      175,      285} /* AT,UA,G,U/T,G */
07304      , {      215,      130,      205,      170,      215} /* AT,UA,G,U/T,U/T */
07305      }
07306      }
07307      , {{{      285,      280,      265,      280,      240} /* AT,UA,U/T,E,E */
07308      , {      285,      280,      265,      280,      240} /* AT,UA,U/T,E,A */
07309      , {      270,      265,      250,      265,      195} /* AT,UA,U/T,E,C */
07310      , {      285,      280,      265,      280,      210} /* AT,UA,U/T,E,G */
07311      , {      285,      280,      265,      280,      210} /* AT,UA,U/T,E,U/T */
07312      }
07313      , {{      285,      280,      265,      280,      240} /* AT,UA,U/T,A,E */
07314      , {      255,      250,      235,      250,      210} /* AT,UA,U/T,A,A */
07315      , {      235,      235,      215,      235,      160} /* AT,UA,U/T,A,C */
07316      , {      230,      200,      210,      200,      125} /* AT,UA,U/T,A,G */
07317      , {      260,      260,      240,      260,      185} /* AT,UA,U/T,A,U/T */
07318      }
07319      , {{      285,      280,      265,      280,      210} /* AT,UA,U/T,C,E */
07320      , {      260,      255,      240,      255,      185} /* AT,UA,U/T,C,A */
07321      , {      270,      265,      250,      265,      195} /* AT,UA,U/T,C,C */
07322      , {      285,      280,      265,      280,      210} /* AT,UA,U/T,C,G */
07323      , {      265,      260,      245,      260,      190} /* AT,UA,U/T,C,U/T */
07324      }
07325      , {{      260,      255,      240,      255,      190} /* AT,UA,U/T,G,E */
07326      , {      235,      205,      215,      205,      130} /* AT,UA,U/T,G,A */
07327      , {      235,      235,      215,      235,      160} /* AT,UA,U/T,G,C */
07328      , {      195,      175,      155,      175,      165} /* AT,UA,U/T,G,G */
07329      , {      255,      255,      235,      255,      180} /* AT,UA,U/T,G,U/T */
07330      }
07331      , {{      285,      280,      265,      280,      210} /* AT,UA,U/T,U/T,E */
07332      , {      285,      280,      265,      280,      210} /* AT,UA,U/T,U/T,A */
07333      , {      250,      245,      230,      245,      175} /* AT,UA,U/T,U/T,C */
07334      , {      285,      280,      265,      280,      210} /* AT,UA,U/T,U/T,G */
07335      , {      210,      210,      190,      210,      135} /* AT,UA,U/T,U/T,U/T */
07336      }
07337      }
07338      }
07339      , {{{      340,      340,      320,      315,      330} /* AT,NN,E,E,E */
07340      , {      330,      325,      320,      315,      330} /* AT,NN,E,E,A */
07341      , {      300,      300,      280,      300,      290} /* AT,NN,E,E,C */
07342      , {      310,      310,      290,      295,      300} /* AT,NN,E,E,G */
07343      , {      340,      340,      290,      310,      300} /* AT,NN,E,E,U/T */
07344      }
07345      , {{      325,      325,      310,      315,      320} /* AT,NN,E,A,E */
07346      , {      300,      300,      285,      290,      295} /* AT,NN,E,A,A */
07347      , {      300,      300,      280,      285,      290} /* AT,NN,E,A,C */
07348      , {      265,      245,      255,      230,      265} /* AT,NN,E,A,G */
07349      , {      310,      310,      290,      295,      300} /* AT,NN,E,A,U/T */
07350      }
07351      , {{      310,      310,      290,      310,      300} /* AT,NN,E,C,E */
07352      , {      300,      300,      280,      285,      290} /* AT,NN,E,C,A */
07353      , {      300,      300,      280,      300,      290} /* AT,NN,E,C,C */
07354      , {      310,      310,      290,      295,      300} /* AT,NN,E,C,G */
07355      , {      300,      300,      280,      300,      290} /* AT,NN,E,C,U/T */
07356      }
07357      , {{      330,      310,      320,      295,      330} /* AT,NN,E,G,E */
07358      , {      305,      285,      295,      270,      305} /* AT,NN,E,G,A */
07359      , {      295,      295,      275,      280,      285} /* AT,NN,E,G,C */
07360      , {      260,      220,      200,      260,      230} /* AT,NN,E,G,G */
07361      , {      310,      310,      290,      295,      300} /* AT,NN,E,G,U/T */
07362      }
07363      , {{      340,      340,      290,      310,      300} /* AT,NN,E,U/T,E */
07364      , {      310,      310,      290,      295,      300} /* AT,NN,E,U/T,A */
07365      , {      300,      300,      280,      300,      290} /* AT,NN,E,U/T,C */
07366      , {      310,      310,      290,      295,      300} /* AT,NN,E,U/T,G */
07367      , {      330,      330,      280,      285,      290} /* AT,NN,E,U/T,U/T */
07368      }
07369      }
07370      , {{{      340,      305,      295,      280,      320} /* AT,NN,A,E,E */
07371      , {      325,      290,      295,      270,      320} /* AT,NN,A,E,A */
07372      , {      300,      265,      265,      270,      290} /* AT,NN,A,E,C */
07373      , {      310,      275,      275,      250,      300} /* AT,NN,A,E,G */
07374      , {      340,      305,      275,      280,      300} /* AT,NN,A,E,U/T */
07375      }
07376      , {{      325,      290,      295,      270,      320} /* AT,NN,A,A,E */
07377      , {      300,      265,      270,      245,      295} /* AT,NN,A,A,A */
07378      , {      300,      265,      265,      240,      290} /* AT,NN,A,A,C */
07379      , {      245,      210,      210,      185,      235} /* AT,NN,A,A,G */
07380      , {      310,      275,      275,      250,      300} /* AT,NN,A,A,U/T */
07381      }

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07382 ,{{ 310, 275, 275, 280, 300} /* AT,NN,A,C,E */
07383 ,{ 300, 265, 265, 240, 290} /* AT,NN,A,C,A */
07384 ,{ 300, 265, 265, 270, 290} /* AT,NN,A,C,C */
07385 ,{ 310, 275, 275, 250, 300} /* AT,NN,A,C,G */
07386 ,{ 300, 265, 265, 270, 290} /* AT,NN,A,C,U/T */
07387 }
07388 ,{{ 310, 275, 275, 250, 300} /* AT,NN,A,G,E */
07389 ,{ 285, 250, 250, 225, 275} /* AT,NN,A,G,A */
07390 ,{ 295, 260, 260, 235, 285} /* AT,NN,A,G,C */
07391 ,{ 255, 185, 185, 225, 210} /* AT,NN,A,G,G */
07392 ,{ 310, 275, 275, 250, 300} /* AT,NN,A,G,U/T */
07393 }
07394 ,{{ 340, 305, 275, 280, 300} /* AT,NN,A,U/T,E */
07395 ,{ 310, 275, 275, 250, 300} /* AT,NN,A,U/T,A */
07396 ,{ 300, 265, 265, 270, 290} /* AT,NN,A,U/T,C */
07397 ,{ 310, 275, 275, 250, 300} /* AT,NN,A,U/T,G */
07398 ,{ 330, 295, 265, 240, 290} /* AT,NN,A,U/T,U/T */
07399 }
07400 }
07401 ,{{{ 315, 290, 315, 295, 310} /* AT,NN,C,E,E */
07402 ,{ 315, 290, 315, 295, 310} /* AT,NN,C,E,A */
07403 ,{ 275, 260, 275, 265, 270} /* AT,NN,C,E,C */
07404 ,{ 285, 270, 285, 275, 280} /* AT,NN,C,E,G */
07405 ,{ 285, 270, 285, 275, 280} /* AT,NN,C,E,U/T */
07406 }
07407 ,{{ 300, 290, 300, 295, 295} /* AT,NN,C,A,E */
07408 ,{ 275, 265, 275, 270, 270} /* AT,NN,C,A,A */
07409 ,{ 275, 260, 275, 265, 270} /* AT,NN,C,A,C */
07410 ,{ 250, 205, 250, 210, 245} /* AT,NN,C,A,G */
07411 ,{ 285, 270, 285, 275, 280} /* AT,NN,C,A,U/T */
07412 }
07413 ,{{ 285, 270, 285, 275, 280} /* AT,NN,C,C,E */
07414 ,{ 275, 260, 275, 265, 270} /* AT,NN,C,C,A */
07415 ,{ 275, 260, 275, 265, 270} /* AT,NN,C,C,C */
07416 ,{ 285, 270, 285, 275, 280} /* AT,NN,C,C,G */
07417 ,{ 275, 260, 275, 265, 270} /* AT,NN,C,C,U/T */
07418 }
07419 ,{{ 315, 270, 315, 275, 310} /* AT,NN,C,G,E */
07420 ,{ 290, 245, 290, 250, 285} /* AT,NN,C,G,A */
07421 ,{ 270, 255, 270, 260, 265} /* AT,NN,C,G,C */
07422 ,{ 195, 180, 195, 185, 190} /* AT,NN,C,G,G */
07423 ,{ 285, 270, 285, 275, 280} /* AT,NN,C,G,U/T */
07424 }
07425 ,{{ 285, 270, 285, 275, 280} /* AT,NN,C,U/T,E */
07426 ,{ 285, 270, 285, 275, 280} /* AT,NN,C,U/T,A */
07427 ,{ 275, 260, 275, 265, 270} /* AT,NN,C,U/T,C */
07428 ,{ 285, 270, 285, 275, 280} /* AT,NN,C,U/T,G */
07429 ,{ 275, 260, 275, 265, 270} /* AT,NN,C,U/T,U/T */
07430 }
07431 }
07432 ,{{{ 320, 245, 310, 255, 320} /* AT,NN,G,E,E */
07433 ,{ 320, 235, 310, 255, 320} /* AT,NN,G,E,A */
07434 ,{ 290, 235, 280, 180, 290} /* AT,NN,G,E,C */
07435 ,{ 300, 215, 290, 255, 300} /* AT,NN,G,E,G */
07436 ,{ 300, 245, 290, 255, 300} /* AT,NN,G,E,U/T */
07437 }
07438 ,{{ 320, 235, 310, 215, 320} /* AT,NN,G,A,E */
07439 ,{ 295, 210, 285, 185, 295} /* AT,NN,G,A,A */
07440 ,{ 290, 205, 280, 180, 290} /* AT,NN,G,A,C */
07441 ,{ 235, 150, 225, 190, 235} /* AT,NN,G,A,G */
07442 ,{ 300, 215, 290, 190, 300} /* AT,NN,G,A,U/T */
07443 }
07444 ,{{ 300, 245, 290, 190, 300} /* AT,NN,G,C,E */
07445 ,{ 290, 205, 280, 180, 290} /* AT,NN,G,C,A */
07446 ,{ 290, 235, 280, 180, 290} /* AT,NN,G,C,C */
07447 ,{ 300, 215, 290, 190, 300} /* AT,NN,G,C,G */
07448 ,{ 290, 235, 280, 180, 290} /* AT,NN,G,C,U/T */
07449 }
07450 ,{{ 300, 215, 290, 255, 300} /* AT,NN,G,G,E */
07451 ,{ 275, 190, 265, 230, 275} /* AT,NN,G,G,A */
07452 ,{ 285, 200, 275, 175, 285} /* AT,NN,G,G,C */
07453 ,{ 260, 190, 200, 230, 210} /* AT,NN,G,G,G */
07454 ,{ 300, 215, 290, 190, 300} /* AT,NN,G,G,U/T */
07455 }
07456 ,{{ 300, 245, 290, 255, 300} /* AT,NN,G,U/T,E */
07457 ,{ 300, 215, 290, 190, 300} /* AT,NN,G,U/T,A */
07458 ,{ 290, 235, 280, 180, 290} /* AT,NN,G,U/T,C */
07459 ,{ 300, 215, 290, 190, 300} /* AT,NN,G,U/T,G */
07460 ,{ 290, 205, 280, 245, 290} /* AT,NN,G,U/T,U/T */
07461 }
07462 }
07463 ,{{{ 330, 315, 310, 315, 270} /* AT,NN,U/T,E,E */
07464 ,{ 330, 315, 310, 315, 270} /* AT,NN,U/T,E,A */
07465 ,{ 290, 285, 270, 285, 215} /* AT,NN,U/T,E,C */
07466 ,{ 300, 295, 280, 295, 225} /* AT,NN,U/T,E,G */
07467 ,{ 300, 295, 280, 295, 225} /* AT,NN,U/T,E,U/T */
07468 }

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07469 ,{{ 315, 315, 295, 315, 270} /* AT,NN,U/T,A,E */
07470 ,{ 290, 290, 270, 290, 245} /* AT,NN,U/T,A,A */
07471 ,{ 290, 285, 270, 285, 215} /* AT,NN,U/T,A,C */
07472 ,{ 265, 230, 245, 230, 160} /* AT,NN,U/T,A,G */
07473 ,{ 300, 295, 280, 295, 225} /* AT,NN,U/T,A,U/T */
07474 }
07475 ,{{ 300, 295, 280, 295, 225} /* AT,NN,U/T,C,E */
07476 ,{ 290, 285, 270, 285, 215} /* AT,NN,U/T,C,A */
07477 ,{ 290, 285, 270, 285, 215} /* AT,NN,U/T,C,C */
07478 ,{ 300, 295, 280, 295, 225} /* AT,NN,U/T,C,G */
07479 ,{ 290, 285, 270, 285, 215} /* AT,NN,U/T,C,U/T */
07480 }
07481 ,{{ 330, 295, 310, 295, 225} /* AT,NN,U/T,G,E */
07482 ,{ 305, 270, 285, 270, 200} /* AT,NN,U/T,G,A */
07483 ,{ 285, 280, 265, 280, 210} /* AT,NN,U/T,G,C */
07484 ,{ 230, 205, 190, 205, 200} /* AT,NN,U/T,G,G */
07485 ,{ 300, 295, 280, 295, 225} /* AT,NN,U/T,G,U/T */
07486 }
07487 ,{{ 300, 295, 280, 295, 225} /* AT,NN,U/T,U/T,E */
07488 ,{ 300, 295, 280, 295, 225} /* AT,NN,U/T,U/T,A */
07489 ,{ 290, 285, 270, 285, 215} /* AT,NN,U/T,U/T,C */
07490 ,{ 300, 295, 280, 295, 225} /* AT,NN,U/T,U/T,G */
07491 ,{ 290, 285, 270, 285, 215} /* AT,NN,U/T,U/T,U/T */
07492 }
07493 }
07494 }
07495 }
07496 ,{{{ INF, INF, INF, INF, INF} /* UA,NP,E,E,E */
07497 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,E,A */
07498 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,E,C */
07499 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,E,G */
07500 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,E,U/T */
07501 }
07502 ,{{ INF, INF, INF, INF, INF} /* UA,NP,E,A,E */
07503 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,A,A */
07504 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,A,C */
07505 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,A,G */
07506 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,A,U/T */
07507 }
07508 ,{{ INF, INF, INF, INF, INF} /* UA,NP,E,C,E */
07509 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,C,A */
07510 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,C,C */
07511 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,C,G */
07512 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,C,U/T */
07513 }
07514 ,{{ INF, INF, INF, INF, INF} /* UA,NP,E,G,E */
07515 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,G,A */
07516 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,G,C */
07517 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,G,G */
07518 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,G,U/T */
07519 }
07520 ,{{ INF, INF, INF, INF, INF} /* UA,NP,E,U/T,E */
07521 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,U/T,A */
07522 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,U/T,C */
07523 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,U/T,G */
07524 ,{ INF, INF, INF, INF, INF} /* UA,NP,E,U/T,U/T */
07525 }
07526 }
07527 ,{{{ INF, INF, INF, INF, INF} /* UA,NP,A,E,E */
07528 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,E,A */
07529 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,E,C */
07530 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,E,G */
07531 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,E,U/T */
07532 }
07533 ,{{ INF, INF, INF, INF, INF} /* UA,NP,A,A,E */
07534 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,A,A */
07535 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,A,C */
07536 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,A,G */
07537 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,A,U/T */
07538 }
07539 ,{{ INF, INF, INF, INF, INF} /* UA,NP,A,C,E */
07540 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,C,A */
07541 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,C,C */
07542 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,C,G */
07543 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,C,U/T */
07544 }
07545 ,{{ INF, INF, INF, INF, INF} /* UA,NP,A,G,E */
07546 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,G,A */
07547 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,G,C */
07548 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,G,G */
07549 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,G,U/T */
07550 }
07551 ,{{ INF, INF, INF, INF, INF} /* UA,NP,A,U/T,E */
07552 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,U/T,A */
07553 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,U/T,C */
07554 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,U/T,G */
07555 ,{ INF, INF, INF, INF, INF} /* UA,NP,A,U/T,U/T */

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07556     }
07557     }
07558     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,C,E,E */
07559     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,E,A */
07560     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,E,C */
07561     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,E,G */
07562     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,E,U/T */
07563     }
07564     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,C,A,E */
07565     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,A,A */
07566     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,A,C */
07567     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,A,G */
07568     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,A,U/T */
07569     }
07570     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,C,C,E */
07571     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,C,A */
07572     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,C,C */
07573     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,C,G */
07574     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,C,U/T */
07575     }
07576     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,C,G,E */
07577     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,G,A */
07578     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,G,C */
07579     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,G,G */
07580     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,G,U/T */
07581     }
07582     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,C,U/T,E */
07583     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,U/T,A */
07584     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,U/T,C */
07585     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,U/T,G */
07586     ,{ INF, INF, INF, INF, INF } /* UA,NP,C,U/T,U/T */
07587     }
07588     }
07589     ,{{{ { INF, INF, INF, INF, INF } /* UA,NP,G,E,E */
07590     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,E,A */
07591     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,E,C */
07592     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,E,G */
07593     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,E,U/T */
07594     }
07595     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,G,A,E */
07596     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,A,A */
07597     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,A,C */
07598     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,A,G */
07599     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,A,U/T */
07600     }
07601     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,G,C,E */
07602     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,C,A */
07603     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,C,C */
07604     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,C,G */
07605     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,C,U/T */
07606     }
07607     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,G,G,E */
07608     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,G,A */
07609     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,G,C */
07610     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,G,G */
07611     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,G,U/T */
07612     }
07613     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,G,U/T,E */
07614     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,U/T,A */
07615     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,U/T,C */
07616     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,U/T,G */
07617     ,{ INF, INF, INF, INF, INF } /* UA,NP,G,U/T,U/T */
07618     }
07619     }
07620     ,{{{ { INF, INF, INF, INF, INF } /* UA,NP,U/T,E,E */
07621     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,E,A */
07622     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,E,C */
07623     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,E,G */
07624     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,E,U/T */
07625     }
07626     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,U/T,A,E */
07627     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,A,A */
07628     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,A,C */
07629     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,A,G */
07630     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,A,U/T */
07631     }
07632     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,U/T,C,E */
07633     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,C,A */
07634     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,C,C */
07635     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,C,G */
07636     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,C,U/T */
07637     }
07638     ,{{ { INF, INF, INF, INF, INF } /* UA,NP,U/T,G,E */
07639     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,G,A */
07640     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,G,C */
07641     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,G,G */
07642     ,{ INF, INF, INF, INF, INF } /* UA,NP,U/T,G,U/T */

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07643      }
07644      ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,E */
07645      ,{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,A */
07646      ,{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,C */
07647      ,{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,G */
07648      ,{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,U/T */
07649      }
07650      }
07651      }
07652      ,{{{      265,      265,      265,      235,      265} /* UA,CG,E,E,E */
07653      ,{      255,      255,      255,      225,      255} /* UA,CG,E,E,A */
07654      ,{      240,      240,      240,      220,      240} /* UA,CG,E,E,C */
07655      ,{      250,      250,      250,      220,      250} /* UA,CG,E,E,G */
07656      ,{      250,      250,      250,      225,      250} /* UA,CG,E,E,U/T */
07657      }
07658      ,{{      245,      245,      245,      215,      245} /* UA,CG,E,A,E */
07659      ,{      205,      205,      205,      175,      205} /* UA,CG,E,A,A */
07660      ,{      215,      215,      215,      190,      215} /* UA,CG,E,A,C */
07661      ,{      190,      160,      190,      145,      175} /* UA,CG,E,A,G */
07662      ,{      240,      240,      240,      215,      240} /* UA,CG,E,A,U/T */
07663      }
07664      ,{{      250,      250,      250,      220,      250} /* UA,CG,E,C,E */
07665      ,{      240,      240,      240,      210,      240} /* UA,CG,E,C,A */
07666      ,{      240,      240,      240,      220,      240} /* UA,CG,E,C,C */
07667      ,{      220,      220,      220,      190,      220} /* UA,CG,E,C,G */
07668      ,{      225,      225,      225,      200,      225} /* UA,CG,E,C,U/T */
07669      }
07670      ,{{      230,      230,      230,      205,      230} /* UA,CG,E,G,E */
07671      ,{      190,      160,      190,      145,      175} /* UA,CG,E,G,A */
07672      ,{      210,      210,      210,      185,      210} /* UA,CG,E,G,C */
07673      ,{      185,      145,      135,      180,      155} /* UA,CG,E,G,G */
07674      ,{      230,      230,      230,      205,      230} /* UA,CG,E,G,U/T */
07675      }
07676      ,{{      255,      255,      255,      225,      255} /* UA,CG,E,U/T,E */
07677      ,{      255,      255,      255,      225,      255} /* UA,CG,E,U/T,A */
07678      ,{      225,      225,      225,      200,      225} /* UA,CG,E,U/T,C */
07679      ,{      250,      250,      250,      220,      250} /* UA,CG,E,U/T,G */
07680      ,{      200,      200,      170,      150,      170} /* UA,CG,E,U/T,U/T */
07681      }
07682      }
07683      ,{{{      265,      235,      240,      210,      265} /* UA,CG,A,E,E */
07684      ,{      255,      225,      230,      175,      255} /* UA,CG,A,E,A */
07685      ,{      240,      210,      215,      195,      240} /* UA,CG,A,E,C */
07686      ,{      250,      220,      225,      170,      250} /* UA,CG,A,E,G */
07687      ,{      250,      220,      225,      200,      250} /* UA,CG,A,E,U/T */
07688      }
07689      ,{{      245,      215,      220,      165,      245} /* UA,CG,A,A,E */
07690      ,{      205,      175,      180,      125,      205} /* UA,CG,A,A,A */
07691      ,{      215,      185,      190,      140,      215} /* UA,CG,A,A,C */
07692      ,{      160,      130,      135,      85,      160} /* UA,CG,A,A,G */
07693      ,{      240,      210,      215,      165,      240} /* UA,CG,A,A,U/T */
07694      }
07695      ,{{      250,      220,      225,      195,      250} /* UA,CG,A,C,E */
07696      ,{      240,      210,      215,      160,      240} /* UA,CG,A,C,A */
07697      ,{      240,      210,      215,      195,      240} /* UA,CG,A,C,C */
07698      ,{      220,      190,      195,      140,      220} /* UA,CG,A,C,G */
07699      ,{      225,      195,      200,      175,      225} /* UA,CG,A,C,U/T */
07700      }
07701      ,{{      230,      200,      205,      155,      230} /* UA,CG,A,G,E */
07702      ,{      160,      130,      135,      85,      160} /* UA,CG,A,G,A */
07703      ,{      210,      180,      185,      135,      210} /* UA,CG,A,G,C */
07704      ,{      150,      105,      110,      120,      135} /* UA,CG,A,G,G */
07705      ,{      230,      200,      205,      155,      230} /* UA,CG,A,G,U/T */
07706      }
07707      ,{{{      255,      225,      230,      190,      255} /* UA,CG,A,U/T,E */
07708      ,{      255,      225,      230,      175,      255} /* UA,CG,A,U/T,A */
07709      ,{      225,      195,      200,      175,      225} /* UA,CG,A,U/T,C */
07710      ,{      250,      220,      225,      170,      250} /* UA,CG,A,U/T,G */
07711      ,{      200,      170,      145,      90,      170} /* UA,CG,A,U/T,U/T */
07712      }
07713      }
07714      ,{{{      250,      215,      250,      215,      230} /* UA,CG,C,E,E */
07715      ,{      240,      205,      240,      205,      220} /* UA,CG,C,E,A */
07716      ,{      225,      195,      225,      195,      205} /* UA,CG,C,E,C */
07717      ,{      235,      200,      235,      200,      215} /* UA,CG,C,E,G */
07718      ,{      235,      200,      235,      200,      215} /* UA,CG,C,E,U/T */
07719      }
07720      ,{{      230,      195,      230,      195,      210} /* UA,CG,C,A,E */
07721      ,{      190,      155,      190,      155,      170} /* UA,CG,C,A,A */
07722      ,{      200,      170,      200,      170,      180} /* UA,CG,C,A,C */
07723      ,{      175,      115,      175,      115,      155} /* UA,CG,C,A,G */
07724      ,{      225,      195,      225,      195,      205} /* UA,CG,C,A,U/T */
07725      }
07726      ,{{      235,      200,      235,      200,      215} /* UA,CG,C,C,E */
07727      ,{      225,      190,      225,      190,      205} /* UA,CG,C,C,A */
07728      ,{      225,      195,      225,      195,      205} /* UA,CG,C,C,C */
07729      ,{      205,      170,      205,      170,      185} /* UA,CG,C,C,G */

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07730 , { 210, 175, 210, 175, 190} /* UA,CG,C,C,U/T */
07731 }
07732 , { { 215, 185, 215, 185, 195} /* UA,CG,C,G,E */
07733 , { 175, 115, 175, 115, 155} /* UA,CG,C,G,A */
07734 , { 195, 165, 195, 165, 175} /* UA,CG,C,G,C */
07735 , { 120, 85, 120, 85, 100} /* UA,CG,C,G,G */
07736 , { 215, 185, 215, 185, 195} /* UA,CG,C,G,U/T */
07737 }
07738 , { { 240, 205, 240, 205, 220} /* UA,CG,C,U/T,E */
07739 , { 240, 205, 240, 205, 220} /* UA,CG,C,U/T,A */
07740 , { 210, 175, 210, 175, 190} /* UA,CG,C,U/T,C */
07741 , { 235, 200, 235, 200, 215} /* UA,CG,C,U/T,G */
07742 , { 155, 120, 155, 120, 135} /* UA,CG,C,U/T,U/T */
07743 }
07744 }
07745 , { { { 265, 205, 265, 190, 265} /* UA,CG,G,E,E */
07746 , { 255, 170, 255, 145, 255} /* UA,CG,G,E,A */
07747 , { 240, 190, 240, 135, 240} /* UA,CG,G,E,C */
07748 , { 250, 165, 250, 175, 250} /* UA,CG,G,E,G */
07749 , { 250, 195, 250, 160, 250} /* UA,CG,G,E,U/T */
07750 }
07751 , { { 245, 160, 245, 155, 245} /* UA,CG,G,A,E */
07752 , { 205, 120, 205, 95, 205} /* UA,CG,G,A,A */
07753 , { 215, 135, 215, 110, 215} /* UA,CG,G,A,C */
07754 , { 160, 80, 160, 120, 160} /* UA,CG,G,A,G */
07755 , { 240, 160, 240, 135, 240} /* UA,CG,G,A,U/T */
07756 }
07757 , { { 250, 190, 250, 140, 250} /* UA,CG,G,C,E */
07758 , { 240, 155, 240, 130, 240} /* UA,CG,G,C,A */
07759 , { 240, 190, 240, 135, 240} /* UA,CG,G,C,C */
07760 , { 220, 135, 220, 110, 220} /* UA,CG,G,C,G */
07761 , { 225, 170, 225, 115, 225} /* UA,CG,G,C,U/T */
07762 }
07763 , { { 230, 150, 230, 180, 230} /* UA,CG,G,G,E */
07764 , { 160, 80, 160, 120, 160} /* UA,CG,G,G,A */
07765 , { 210, 130, 210, 105, 210} /* UA,CG,G,G,C */
07766 , { 185, 115, 135, 155, 135} /* UA,CG,G,G,G */
07767 , { 230, 150, 230, 125, 230} /* UA,CG,G,G,U/T */
07768 }
07769 , { { 255, 185, 255, 150, 255} /* UA,CG,G,U/T,E */
07770 , { 255, 170, 255, 145, 255} /* UA,CG,G,U/T,A */
07771 , { 225, 170, 225, 115, 225} /* UA,CG,G,U/T,C */
07772 , { 250, 165, 250, 140, 250} /* UA,CG,G,U/T,G */
07773 , { 170, 85, 170, 125, 170} /* UA,CG,G,U/T,U/T */
07774 }
07775 }
07776 , { { { 265, 240, 245, 235, 200} /* UA,CG,U/T,E,E */
07777 , { 255, 230, 235, 225, 190} /* UA,CG,U/T,E,A */
07778 , { 240, 220, 220, 215, 170} /* UA,CG,U/T,E,C */
07779 , { 250, 225, 230, 220, 175} /* UA,CG,U/T,E,G */
07780 , { 250, 225, 230, 220, 175} /* UA,CG,U/T,E,U/T */
07781 }
07782 , { { 245, 220, 225, 215, 200} /* UA,CG,U/T,A,E */
07783 , { 205, 180, 185, 175, 160} /* UA,CG,U/T,A,A */
07784 , { 215, 195, 195, 190, 145} /* UA,CG,U/T,A,C */
07785 , { 190, 140, 170, 135, 90} /* UA,CG,U/T,A,G */
07786 , { 240, 220, 220, 215, 170} /* UA,CG,U/T,A,U/T */
07787 }
07788 , { { 250, 225, 230, 220, 175} /* UA,CG,U/T,C,E */
07789 , { 240, 215, 220, 210, 165} /* UA,CG,U/T,C,A */
07790 , { 240, 220, 220, 215, 170} /* UA,CG,U/T,C,C */
07791 , { 220, 195, 200, 190, 145} /* UA,CG,U/T,C,G */
07792 , { 225, 200, 205, 195, 150} /* UA,CG,U/T,C,U/T */
07793 }
07794 , { { 230, 210, 210, 205, 160} /* UA,CG,U/T,G,E */
07795 , { 190, 140, 170, 135, 90} /* UA,CG,U/T,G,A */
07796 , { 210, 190, 190, 185, 140} /* UA,CG,U/T,G,C */
07797 , { 155, 110, 115, 105, 125} /* UA,CG,U/T,G,G */
07798 , { 230, 210, 210, 205, 160} /* UA,CG,U/T,G,U/T */
07799 }
07800 , { { 255, 230, 235, 225, 180} /* UA,CG,U/T,U/T,E */
07801 , { 255, 230, 235, 225, 180} /* UA,CG,U/T,U/T,A */
07802 , { 225, 200, 205, 195, 150} /* UA,CG,U/T,U/T,C */
07803 , { 250, 225, 230, 220, 175} /* UA,CG,U/T,U/T,G */
07804 , { 170, 145, 150, 140, 95} /* UA,CG,U/T,U/T,U/T */
07805 }
07806 }
07807 }
07808 , { { { { 245, 245, 245, 220, 245} /* UA,GC,E,E,E */
07809 , { 235, 235, 235, 210, 235} /* UA,GC,E,E,A */
07810 , { 220, 220, 220, 200, 220} /* UA,GC,E,E,C */
07811 , { 230, 230, 230, 210, 230} /* UA,GC,E,E,G */
07812 , { 230, 230, 230, 205, 230} /* UA,GC,E,E,U/T */
07813 }
07814 , { { 240, 240, 240, 215, 240} /* UA,GC,E,A,E */
07815 , { 205, 205, 205, 180, 205} /* UA,GC,E,A,A */
07816 , { 210, 210, 210, 180, 210} /* UA,GC,E,A,C */
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07817      , { 140, 110, 140, 95, 125} /* UA,GC,E,A,G */
07818      , { 230, 230, 230, 200, 230} /* UA,GC,E,A,U/T */
07819      }
07820      , {{ 220, 220, 220, 195, 220} /* UA,GC,E,C,E */
07821      , { 205, 205, 205, 180, 205} /* UA,GC,E,C,A */
07822      , { 220, 220, 220, 195, 220} /* UA,GC,E,C,C */
07823      , { 205, 205, 205, 180, 205} /* UA,GC,E,C,G */
07824      , { 215, 215, 215, 190, 215} /* UA,GC,E,C,U/T */
07825      }
07826      , {{ 230, 230, 230, 205, 230} /* UA,GC,E,G,E */
07827      , { 170, 140, 170, 125, 155} /* UA,GC,E,G,A */
07828      , { 185, 185, 185, 155, 185} /* UA,GC,E,G,C */
07829      , { 180, 140, 130, 175, 150} /* UA,GC,E,G,G */
07830      , { 230, 230, 230, 200, 230} /* UA,GC,E,G,U/T */
07831      }
07832      , {{ 235, 235, 235, 215, 235} /* UA,GC,E,U/T,E */
07833      , { 220, 220, 220, 195, 220} /* UA,GC,E,U/T,A */
07834      , { 215, 215, 215, 195, 215} /* UA,GC,E,U/T,C */
07835      , { 230, 230, 230, 205, 230} /* UA,GC,E,U/T,G */
07836      , { 195, 195, 165, 150, 165} /* UA,GC,E,U/T,U/T */
07837      }
07838      }
07839      , {{{ 245, 215, 220, 190, 245} /* UA,GC,A,E,E */
07840      , { 235, 205, 210, 160, 235} /* UA,GC,A,E,A */
07841      , { 220, 190, 195, 175, 220} /* UA,GC,A,E,C */
07842      , { 230, 200, 205, 155, 230} /* UA,GC,A,E,G */
07843      , { 230, 200, 205, 180, 230} /* UA,GC,A,E,U/T */
07844      }
07845      , {{ 240, 210, 215, 165, 240} /* UA,GC,A,A,E */
07846      , { 205, 175, 180, 130, 205} /* UA,GC,A,A,A */
07847      , { 210, 180, 185, 130, 210} /* UA,GC,A,A,C */
07848      , { 110, 80, 85, 35, 110} /* UA,GC,A,A,G */
07849      , { 230, 200, 205, 150, 230} /* UA,GC,A,A,U/T */
07850      }
07851      , {{ 220, 190, 195, 170, 220} /* UA,GC,A,C,E */
07852      , { 205, 175, 180, 130, 205} /* UA,GC,A,C,A */
07853      , { 220, 190, 195, 170, 220} /* UA,GC,A,C,C */
07854      , { 205, 175, 180, 130, 205} /* UA,GC,A,C,G */
07855      , { 215, 185, 190, 165, 215} /* UA,GC,A,C,U/T */
07856      }
07857      , {{ 230, 200, 205, 150, 230} /* UA,GC,A,G,E */
07858      , { 140, 110, 115, 65, 140} /* UA,GC,A,G,A */
07859      , { 185, 155, 160, 105, 185} /* UA,GC,A,G,C */
07860      , { 145, 100, 105, 115, 130} /* UA,GC,A,G,G */
07861      , { 230, 200, 205, 150, 230} /* UA,GC,A,G,U/T */
07862      }
07863      , {{ 235, 205, 210, 190, 235} /* UA,GC,A,U/T,E */
07864      , { 220, 190, 195, 145, 220} /* UA,GC,A,U/T,A */
07865      , { 215, 185, 190, 170, 215} /* UA,GC,A,U/T,C */
07866      , { 230, 200, 205, 155, 230} /* UA,GC,A,U/T,G */
07867      , { 195, 165, 140, 90, 165} /* UA,GC,A,U/T,U/T */
07868      }
07869      }
07870      , {{{ 230, 200, 230, 200, 210} /* UA,GC,C,E,E */
07871      , { 220, 190, 220, 190, 200} /* UA,GC,C,E,A */
07872      , { 205, 175, 205, 175, 185} /* UA,GC,C,E,C */
07873      , { 215, 185, 215, 185, 195} /* UA,GC,C,E,G */
07874      , { 215, 180, 215, 180, 195} /* UA,GC,C,E,U/T */
07875      }
07876      , {{ 225, 195, 225, 195, 205} /* UA,GC,C,A,E */
07877      , { 190, 160, 190, 160, 170} /* UA,GC,C,A,A */
07878      , { 195, 160, 195, 160, 175} /* UA,GC,C,A,C */
07879      , { 125, 65, 125, 65, 105} /* UA,GC,C,A,G */
07880      , { 215, 180, 215, 180, 195} /* UA,GC,C,A,U/T */
07881      }
07882      , {{ 205, 170, 205, 170, 185} /* UA,GC,C,C,E */
07883      , { 190, 160, 190, 160, 170} /* UA,GC,C,C,A */
07884      , { 205, 170, 205, 170, 185} /* UA,GC,C,C,C */
07885      , { 190, 160, 190, 160, 170} /* UA,GC,C,C,G */
07886      , { 200, 165, 200, 165, 180} /* UA,GC,C,C,U/T */
07887      }
07888      , {{ 215, 180, 215, 180, 195} /* UA,GC,C,G,E */
07889      , { 155, 95, 155, 95, 135} /* UA,GC,C,G,A */
07890      , { 170, 135, 170, 135, 150} /* UA,GC,C,G,C */
07891      , { 115, 80, 115, 80, 95} /* UA,GC,C,G,G */
07892      , { 215, 180, 215, 180, 195} /* UA,GC,C,G,U/T */
07893      }
07894      , {{{ 220, 190, 220, 190, 200} /* UA,GC,C,U/T,E */
07895      , { 205, 175, 205, 175, 185} /* UA,GC,C,U/T,A */
07896      , { 200, 170, 200, 170, 180} /* UA,GC,C,U/T,C */
07897      , { 215, 185, 215, 185, 195} /* UA,GC,C,U/T,G */
07898      , { 150, 120, 150, 120, 130} /* UA,GC,C,U/T,U/T */
07899      }
07900      }
07901      , {{{ 245, 185, 245, 185, 245} /* UA,GC,G,E,E */
07902      , { 235, 155, 235, 130, 235} /* UA,GC,G,E,A */
07903      , { 220, 170, 220, 115, 220} /* UA,GC,G,E,C */

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07904      , {      230,      150,      230,      185,      230} /* UA,GC,G,E,G */
07905      , {      230,      175,      230,      150,      230} /* UA,GC,G,E,U/T */
07906      }
07907      , {{      240,      160,      240,      135,      240} /* UA,GC,G,A,E */
07908      , {      205,      125,      205,      100,      205} /* UA,GC,G,A,A */
07909      , {      210,      125,      210,      100,      210} /* UA,GC,G,A,C */
07910      , {      110,      30,      110,      70,      110} /* UA,GC,G,A,G */
07911      , {      230,      145,      230,      120,      230} /* UA,GC,G,A,U/T */
07912      }
07913      , {{      220,      165,      220,      110,      220} /* UA,GC,G,C,E */
07914      , {      205,      125,      205,      100,      205} /* UA,GC,G,C,A */
07915      , {      220,      165,      220,      110,      220} /* UA,GC,G,C,C */
07916      , {      205,      125,      205,      100,      205} /* UA,GC,G,C,G */
07917      , {      215,      160,      215,      105,      215} /* UA,GC,G,C,U/T */
07918      }
07919      , {{      230,      145,      230,      180,      230} /* UA,GC,G,G,E */
07920      , {      140,      60,      140,      100,      140} /* UA,GC,G,G,A */
07921      , {      185,      100,      185,      75,      185} /* UA,GC,G,G,C */
07922      , {      180,      110,      130,      150,      130} /* UA,GC,G,G,G */
07923      , {      230,      145,      230,      120,      230} /* UA,GC,G,G,U/T */
07924      }
07925      , {{      235,      185,      235,      155,      235} /* UA,GC,G,U/T,E */
07926      , {      220,      140,      220,      115,      220} /* UA,GC,G,U/T,A */
07927      , {      215,      165,      215,      110,      215} /* UA,GC,G,U/T,C */
07928      , {      230,      150,      230,      125,      230} /* UA,GC,G,U/T,G */
07929      , {      165,      85,      165,      125,      165} /* UA,GC,G,U/T,U/T */
07930      }
07931      }
07932      , {{ {{      245,      225,      225,      220,      205} /* UA,GC,U/T,E,E */
07933      , {      235,      215,      215,      210,      195} /* UA,GC,U/T,E,A */
07934      , {      220,      200,      200,      195,      150} /* UA,GC,U/T,E,C */
07935      , {      230,      210,      210,      205,      160} /* UA,GC,U/T,E,G */
07936      , {      230,      205,      210,      200,      155} /* UA,GC,U/T,E,U/T */
07937      }
07938      , {{ {{      240,      220,      220,      215,      200} /* UA,GC,U/T,A,E */
07939      , {      205,      185,      185,      180,      165} /* UA,GC,U/T,A,A */
07940      , {      210,      185,      190,      180,      135} /* UA,GC,U/T,A,C */
07941      , {      140,      90,      120,      85,      40} /* UA,GC,U/T,A,G */
07942      , {      230,      205,      210,      200,      155} /* UA,GC,U/T,A,U/T */
07943      }
07944      , {{ {{      220,      195,      200,      190,      145} /* UA,GC,U/T,C,E */
07945      , {      205,      185,      185,      180,      135} /* UA,GC,U/T,C,A */
07946      , {      220,      195,      200,      190,      145} /* UA,GC,U/T,C,C */
07947      , {      205,      185,      185,      180,      135} /* UA,GC,U/T,C,G */
07948      , {      215,      190,      195,      185,      140} /* UA,GC,U/T,C,U/T */
07949      }
07950      , {{ {{      230,      205,      210,      200,      155} /* UA,GC,U/T,G,E */
07951      , {      170,      120,      150,      115,      70} /* UA,GC,U/T,G,A */
07952      , {      185,      160,      165,      155,      110} /* UA,GC,U/T,G,C */
07953      , {      150,      105,      110,      100,      120} /* UA,GC,U/T,G,G */
07954      , {      230,      205,      210,      200,      155} /* UA,GC,U/T,G,U/T */
07955      }
07956      , {{ {{      235,      215,      215,      210,      165} /* UA,GC,U/T,U/T,E */
07957      , {      220,      200,      200,      195,      150} /* UA,GC,U/T,U/T,A */
07958      , {      215,      195,      195,      190,      145} /* UA,GC,U/T,U/T,C */
07959      , {      230,      210,      210,      205,      160} /* UA,GC,U/T,U/T,G */
07960      , {      165,      145,      145,      140,      95} /* UA,GC,U/T,U/T,U/T */
07961      }
07962      }
07963      }
07964      , {{ {{ {{      340,      340,      325,      300,      325} /* UA,GT,E,E,E */
07965      , {      315,      315,      315,      290,      315} /* UA,GT,E,E,A */
07966      , {      300,      300,      300,      275,      300} /* UA,GT,E,E,C */
07967      , {      310,      310,      310,      290,      310} /* UA,GT,E,E,G */
07968      , {      340,      340,      310,      290,      310} /* UA,GT,E,E,U/T */
07969      }
07970      , {{ {{      325,      325,      325,      300,      325} /* UA,GT,E,A,E */
07971      , {      300,      300,      300,      275,      300} /* UA,GT,E,A,A */
07972      , {      300,      300,      300,      270,      300} /* UA,GT,E,A,C */
07973      , {      275,      245,      275,      225,      260} /* UA,GT,E,A,G */
07974      , {      310,      310,      310,      280,      310} /* UA,GT,E,A,U/T */
07975      }
07976      , {{ {{      300,      300,      300,      275,      300} /* UA,GT,E,C,E */
07977      , {      300,      300,      300,      270,      300} /* UA,GT,E,C,A */
07978      , {      300,      300,      300,      275,      300} /* UA,GT,E,C,C */
07979      , {      290,      290,      290,      260,      290} /* UA,GT,E,C,G */
07980      , {      300,      300,      300,      275,      300} /* UA,GT,E,C,U/T */
07981      }
07982      , {{ {{      320,      310,      320,      290,      310} /* UA,GT,E,G,E */
07983      , {      295,      265,      295,      245,      280} /* UA,GT,E,G,A */
07984      , {      290,      290,      290,      260,      290} /* UA,GT,E,G,C */
07985      , {      270,      230,      220,      265,      240} /* UA,GT,E,G,G */
07986      , {      310,      310,      310,      280,      310} /* UA,GT,E,G,U/T */
07987      }
07988      , {{ {{      340,      340,      310,      290,      310} /* UA,GT,E,U/T,E */
07989      , {      300,      300,      300,      270,      300} /* UA,GT,E,U/T,A */
07990      , {      300,      300,      300,      275,      300} /* UA,GT,E,U/T,C */
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07991      , {      310,      310,      310,      280,      310} /* UA,GT,E,U/T,G */
07992      , {      330,      330,      300,      280,      300} /* UA,GT,E,U/T,U/T */
07993      }
07994      }
07995      , {{{      340,      310,      300,      260,      325} /* UA,GT,A,E,E */
07996      , {      315,      285,      290,      240,      315} /* UA,GT,A,E,A */
07997      , {      300,      270,      275,      250,      300} /* UA,GT,A,E,C */
07998      , {      310,      280,      285,      230,      310} /* UA,GT,A,E,G */
07999      , {      340,      310,      285,      260,      310} /* UA,GT,A,E,U/T */
08000      }
08001      , {{{      325,      295,      300,      250,      325} /* UA,GT,A,A,E */
08002      , {      300,      270,      275,      225,      300} /* UA,GT,A,A,A */
08003      , {      300,      270,      275,      220,      300} /* UA,GT,A,A,C */
08004      , {      245,      215,      220,      165,      245} /* UA,GT,A,A,G */
08005      , {      310,      280,      285,      230,      310} /* UA,GT,A,A,U/T */
08006      }
08007      , {{{      300,      270,      275,      250,      300} /* UA,GT,A,C,E */
08008      , {      300,      270,      275,      220,      300} /* UA,GT,A,C,A */
08009      , {      300,      270,      275,      250,      300} /* UA,GT,A,C,C */
08010      , {      290,      260,      265,      210,      290} /* UA,GT,A,C,G */
08011      , {      300,      270,      275,      250,      300} /* UA,GT,A,C,U/T */
08012      }
08013      , {{{      310,      280,      285,      230,      310} /* UA,GT,A,G,E */
08014      , {      265,      235,      240,      185,      265} /* UA,GT,A,G,A */
08015      , {      290,      260,      265,      210,      290} /* UA,GT,A,G,C */
08016      , {      235,      190,      195,      205,      220} /* UA,GT,A,G,G */
08017      , {      310,      280,      285,      230,      310} /* UA,GT,A,G,U/T */
08018      }
08019      , {{{      340,      310,      285,      260,      310} /* UA,GT,A,U/T,E */
08020      , {      300,      270,      275,      220,      300} /* UA,GT,A,U/T,A */
08021      , {      300,      270,      275,      250,      300} /* UA,GT,A,U/T,C */
08022      , {      310,      280,      285,      230,      310} /* UA,GT,A,U/T,G */
08023      , {      330,      300,      275,      220,      300} /* UA,GT,A,U/T,U/T */
08024      }
08025      }
08026      , {{{      310,      280,      310,      280,      290} /* UA,GT,C,E,E */
08027      , {      300,      270,      300,      270,      280} /* UA,GT,C,E,A */
08028      , {      285,      250,      285,      250,      265} /* UA,GT,C,E,C */
08029      , {      295,      260,      295,      260,      275} /* UA,GT,C,E,G */
08030      , {      295,      260,      295,      260,      275} /* UA,GT,C,E,U/T */
08031      }
08032      , {{{      310,      280,      310,      280,      290} /* UA,GT,C,A,E */
08033      , {      285,      255,      285,      255,      265} /* UA,GT,C,A,A */
08034      , {      285,      250,      285,      250,      265} /* UA,GT,C,A,C */
08035      , {      260,      195,      260,      195,      240} /* UA,GT,C,A,G */
08036      , {      295,      260,      295,      260,      275} /* UA,GT,C,A,U/T */
08037      }
08038      , {{{      285,      250,      285,      250,      265} /* UA,GT,C,C,E */
08039      , {      285,      250,      285,      250,      265} /* UA,GT,C,C,A */
08040      , {      285,      250,      285,      250,      265} /* UA,GT,C,C,C */
08041      , {      275,      240,      275,      240,      255} /* UA,GT,C,C,G */
08042      , {      285,      250,      285,      250,      265} /* UA,GT,C,C,U/T */
08043      }
08044      , {{{      305,      260,      305,      260,      285} /* UA,GT,C,G,E */
08045      , {      280,      215,      280,      215,      260} /* UA,GT,C,G,A */
08046      , {      275,      240,      275,      240,      255} /* UA,GT,C,G,C */
08047      , {      205,      170,      205,      170,      185} /* UA,GT,C,G,G */
08048      , {      295,      260,      295,      260,      275} /* UA,GT,C,G,U/T */
08049      }
08050      , {{{      295,      260,      295,      260,      275} /* UA,GT,C,U/T,E */
08051      , {      285,      250,      285,      250,      265} /* UA,GT,C,U/T,A */
08052      , {      285,      250,      285,      250,      265} /* UA,GT,C,U/T,C */
08053      , {      295,      260,      295,      260,      275} /* UA,GT,C,U/T,G */
08054      , {      285,      250,      285,      250,      265} /* UA,GT,C,U/T,U/T */
08055      }
08056      }
08057      , {{{      325,      255,      325,      265,      325} /* UA,GT,G,E,E */
08058      , {      315,      235,      315,      235,      315} /* UA,GT,G,E,A */
08059      , {      300,      245,      300,      190,      300} /* UA,GT,G,E,C */
08060      , {      310,      225,      310,      265,      310} /* UA,GT,G,E,G */
08061      , {      310,      255,      310,      265,      310} /* UA,GT,G,E,U/T */
08062      }
08063      , {{{      325,      245,      325,      225,      325} /* UA,GT,G,A,E */
08064      , {      300,      220,      300,      195,      300} /* UA,GT,G,A,A */
08065      , {      300,      215,      300,      190,      300} /* UA,GT,G,A,C */
08066      , {      245,      160,      245,      200,      245} /* UA,GT,G,A,G */
08067      , {      310,      225,      310,      200,      310} /* UA,GT,G,A,U/T */
08068      }
08069      , {{{      300,      245,      300,      190,      300} /* UA,GT,G,C,E */
08070      , {      300,      215,      300,      190,      300} /* UA,GT,G,C,A */
08071      , {      300,      245,      300,      190,      300} /* UA,GT,G,C,C */
08072      , {      290,      205,      290,      180,      290} /* UA,GT,G,C,G */
08073      , {      300,      245,      300,      190,      300} /* UA,GT,G,C,U/T */
08074      }
08075      , {{{      310,      225,      310,      265,      310} /* UA,GT,G,G,E */
08076      , {      265,      180,      265,      220,      265} /* UA,GT,G,G,A */
08077      , {      290,      205,      290,      180,      290} /* UA,GT,G,G,C */

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08078      , {      270,      200,      220,      240,      220} /* UA,GT,G,G,G */
08079      , {      310,      225,      310,      200,      310} /* UA,GT,G,G,U/T */
08080      }
08081      , {{      310,      255,      310,      265,      310} /* UA,GT,G,U/T,E */
08082      , {      300,      215,      300,      190,      300} /* UA,GT,G,U/T,A */
08083      , {      300,      245,      300,      190,      300} /* UA,GT,G,U/T,C */
08084      , {      310,      225,      310,      200,      310} /* UA,GT,G,U/T,G */
08085      , {      300,      215,      300,      255,      300} /* UA,GT,G,U/T,U/T */
08086      }
08087      }
08088      , {{{      325,      305,      305,      300,      285} /* UA,GT,U/T,E,E */
08089      , {      315,      295,      295,      290,      275} /* UA,GT,U/T,E,A */
08090      , {      300,      275,      280,      270,      225} /* UA,GT,U/T,E,C */
08091      , {      310,      285,      290,      280,      235} /* UA,GT,U/T,E,G */
08092      , {      310,      285,      290,      280,      235} /* UA,GT,U/T,E,U/T */
08093      }
08094      , {{{      325,      305,      305,      300,      285} /* UA,GT,U/T,A,E */
08095      , {      300,      280,      280,      275,      260} /* UA,GT,U/T,A,A */
08096      , {      300,      275,      280,      270,      225} /* UA,GT,U/T,A,C */
08097      , {      275,      220,      255,      215,      170} /* UA,GT,U/T,A,G */
08098      , {      310,      285,      290,      280,      235} /* UA,GT,U/T,A,U/T */
08099      }
08100      , {{{      300,      275,      280,      270,      225} /* UA,GT,U/T,C,E */
08101      , {      300,      275,      280,      270,      225} /* UA,GT,U/T,C,A */
08102      , {      300,      275,      280,      270,      225} /* UA,GT,U/T,C,C */
08103      , {      290,      265,      270,      260,      215} /* UA,GT,U/T,C,G */
08104      , {      300,      275,      280,      270,      225} /* UA,GT,U/T,C,U/T */
08105      }
08106      , {{{      320,      285,      300,      280,      235} /* UA,GT,U/T,G,E */
08107      , {      295,      240,      275,      235,      190} /* UA,GT,U/T,G,A */
08108      , {      290,      265,      270,      260,      215} /* UA,GT,U/T,G,C */
08109      , {      240,      195,      200,      190,      210} /* UA,GT,U/T,G,G */
08110      , {      310,      285,      290,      280,      235} /* UA,GT,U/T,G,U/T */
08111      }
08112      , {{{      310,      285,      290,      280,      235} /* UA,GT,U/T,U/T,E */
08113      , {      300,      275,      280,      270,      225} /* UA,GT,U/T,U/T,A */
08114      , {      300,      275,      280,      270,      225} /* UA,GT,U/T,U/T,C */
08115      , {      310,      285,      290,      280,      235} /* UA,GT,U/T,U/T,G */
08116      , {      300,      275,      280,      270,      225} /* UA,GT,U/T,U/T,U/T */
08117      }
08118      }
08119      }
08120      , {{{ {      340,      325,      340,      290,      325} /* UA,UG,E,E,E */
08121      , {      340,      310,      340,      290,      325} /* UA,UG,E,E,A */
08122      , {      285,      285,      285,      260,      285} /* UA,UG,E,E,C */
08123      , {      295,      295,      295,      275,      295} /* UA,UG,E,E,G */
08124      , {      325,      325,      295,      275,      295} /* UA,UG,E,E,U/T */
08125      }
08126      , {{{      295,      295,      295,      265,      295} /* UA,UG,E,A,E */
08127      , {      250,      250,      250,      225,      250} /* UA,UG,E,A,A */
08128      , {      285,      285,      285,      255,      285} /* UA,UG,E,A,C */
08129      , {      230,      200,      230,      185,      215} /* UA,UG,E,A,G */
08130      , {      295,      295,      295,      265,      295} /* UA,UG,E,A,U/T */
08131      }
08132      , {{{      285,      285,      285,      260,      285} /* UA,UG,E,C,E */
08133      , {      285,      285,      285,      255,      285} /* UA,UG,E,C,A */
08134      , {      285,      285,      285,      260,      285} /* UA,UG,E,C,C */
08135      , {      270,      270,      270,      240,      270} /* UA,UG,E,C,G */
08136      , {      285,      285,      285,      260,      285} /* UA,UG,E,C,U/T */
08137      }
08138      , {{{      340,      310,      340,      290,      325} /* UA,UG,E,G,E */
08139      , {      315,      285,      315,      265,      300} /* UA,UG,E,G,A */
08140      , {      280,      280,      280,      250,      280} /* UA,UG,E,G,C */
08141      , {      255,      215,      205,      250,      225} /* UA,UG,E,G,G */
08142      , {      295,      295,      295,      265,      295} /* UA,UG,E,G,U/T */
08143      }
08144      , {{{      325,      325,      295,      275,      295} /* UA,UG,E,U/T,E */
08145      , {      295,      295,      295,      265,      295} /* UA,UG,E,U/T,A */
08146      , {      285,      285,      285,      260,      285} /* UA,UG,E,U/T,C */
08147      , {      295,      295,      295,      265,      295} /* UA,UG,E,U/T,G */
08148      , {      315,      315,      285,      265,      285} /* UA,UG,E,U/T,U/T */
08149      }
08150      }
08151      , {{{ {      325,      295,      285,      245,      310} /* UA,UG,A,E,E */
08152      , {      310,      280,      285,      230,      310} /* UA,UG,A,E,A */
08153      , {      285,      255,      260,      235,      285} /* UA,UG,A,E,C */
08154      , {      295,      265,      270,      215,      295} /* UA,UG,A,E,G */
08155      , {      325,      295,      270,      245,      295} /* UA,UG,A,E,U/T */
08156      }
08157      , {{{      295,      265,      270,      215,      295} /* UA,UG,A,A,E */
08158      , {      250,      220,      225,      175,      250} /* UA,UG,A,A,A */
08159      , {      285,      255,      260,      205,      285} /* UA,UG,A,A,C */
08160      , {      200,      170,      175,      125,      200} /* UA,UG,A,A,G */
08161      , {      295,      265,      270,      215,      295} /* UA,UG,A,A,U/T */
08162      }
08163      , {{{      285,      255,      260,      235,      285} /* UA,UG,A,C,E */
08164      , {      285,      255,      260,      205,      285} /* UA,UG,A,C,A */

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08165      , {      285,      255,      260,      235,      285} /* UA,UG,A,C,C */
08166      , {      270,      240,      245,      190,      270} /* UA,UG,A,C,G */
08167      , {      285,      255,      260,      235,      285} /* UA,UG,A,C,U/T */
08168      }
08169      , {{      310,      280,      285,      230,      310} /* UA,UG,A,G,E */
08170      , {      285,      255,      260,      205,      285} /* UA,UG,A,G,A */
08171      , {      280,      250,      255,      200,      280} /* UA,UG,A,G,C */
08172      , {      220,      175,      180,      190,      205} /* UA,UG,A,G,G */
08173      , {      295,      265,      270,      215,      295} /* UA,UG,A,G,U/T */
08174      }
08175      , {{      325,      295,      270,      245,      295} /* UA,UG,A,U/T,E */
08176      , {      295,      265,      270,      215,      295} /* UA,UG,A,U/T,A */
08177      , {      285,      255,      260,      235,      285} /* UA,UG,A,U/T,C */
08178      , {      295,      265,      270,      215,      295} /* UA,UG,A,U/T,G */
08179      , {      315,      285,      260,      205,      285} /* UA,UG,A,U/T,U/T */
08180      }
08181      }
08182      , {{{      325,      260,      325,      260,      305} /* UA,UG,C,E,E */
08183      , {      325,      260,      325,      260,      305} /* UA,UG,C,E,A */
08184      , {      270,      235,      270,      235,      250} /* UA,UG,C,E,C */
08185      , {      280,      245,      280,      245,      260} /* UA,UG,C,E,G */
08186      , {      280,      245,      280,      245,      260} /* UA,UG,C,E,U/T */
08187      }
08188      , {{      280,      245,      280,      245,      260} /* UA,UG,C,A,E */
08189      , {      235,      205,      235,      205,      215} /* UA,UG,C,A,A */
08190      , {      270,      235,      270,      235,      250} /* UA,UG,C,A,C */
08191      , {      215,      155,      215,      155,      195} /* UA,UG,C,A,G */
08192      , {      280,      245,      280,      245,      260} /* UA,UG,C,A,U/T */
08193      }
08194      , {{{      270,      235,      270,      235,      250} /* UA,UG,C,C,E */
08195      , {      270,      235,      270,      235,      250} /* UA,UG,C,C,A */
08196      , {      270,      235,      270,      235,      250} /* UA,UG,C,C,C */
08197      , {      255,      220,      255,      220,      235} /* UA,UG,C,C,G */
08198      , {      270,      235,      270,      235,      250} /* UA,UG,C,C,U/T */
08199      }
08200      , {{      325,      260,      325,      260,      305} /* UA,UG,C,G,E */
08201      , {      300,      235,      300,      235,      280} /* UA,UG,C,G,A */
08202      , {      265,      230,      265,      230,      245} /* UA,UG,C,G,C */
08203      , {      190,      155,      190,      155,      170} /* UA,UG,C,G,G */
08204      , {      280,      245,      280,      245,      260} /* UA,UG,C,G,U/T */
08205      }
08206      , {{{      280,      245,      280,      245,      260} /* UA,UG,C,U/T,E */
08207      , {      280,      245,      280,      245,      260} /* UA,UG,C,U/T,A */
08208      , {      270,      235,      270,      235,      250} /* UA,UG,C,U/T,C */
08209      , {      280,      245,      280,      245,      260} /* UA,UG,C,U/T,G */
08210      , {      270,      235,      270,      235,      250} /* UA,UG,C,U/T,U/T */
08211      }
08212      }
08213      , {{{      310,      240,      310,      265,      310} /* UA,UG,G,E,E */
08214      , {      310,      225,      310,      265,      310} /* UA,UG,G,E,A */
08215      , {      285,      230,      285,      175,      285} /* UA,UG,G,E,C */
08216      , {      295,      210,      295,      250,      295} /* UA,UG,G,E,G */
08217      , {      295,      240,      295,      250,      295} /* UA,UG,G,E,U/T */
08218      }
08219      , {{      295,      210,      295,      185,      295} /* UA,UG,G,A,E */
08220      , {      250,      170,      250,      145,      250} /* UA,UG,G,A,A */
08221      , {      285,      200,      285,      175,      285} /* UA,UG,G,A,C */
08222      , {      200,      120,      200,      160,      200} /* UA,UG,G,A,G */
08223      , {      295,      210,      295,      185,      295} /* UA,UG,G,A,U/T */
08224      }
08225      , {{      285,      230,      285,      175,      285} /* UA,UG,G,C,E */
08226      , {      285,      200,      285,      175,      285} /* UA,UG,G,C,A */
08227      , {      285,      230,      285,      175,      285} /* UA,UG,G,C,C */
08228      , {      270,      185,      270,      160,      270} /* UA,UG,G,C,G */
08229      , {      285,      230,      285,      175,      285} /* UA,UG,G,C,U/T */
08230      }
08231      , {{      310,      225,      310,      265,      310} /* UA,UG,G,G,E */
08232      , {      285,      200,      285,      240,      285} /* UA,UG,G,G,A */
08233      , {      280,      195,      280,      170,      280} /* UA,UG,G,G,C */
08234      , {      255,      185,      205,      225,      205} /* UA,UG,G,G,G */
08235      , {      295,      210,      295,      185,      295} /* UA,UG,G,G,U/T */
08236      }
08237      , {{      295,      240,      295,      250,      295} /* UA,UG,G,U/T,E */
08238      , {      295,      210,      295,      185,      295} /* UA,UG,G,U/T,A */
08239      , {      285,      230,      285,      175,      285} /* UA,UG,G,U/T,C */
08240      , {      295,      210,      295,      185,      295} /* UA,UG,G,U/T,G */
08241      , {      285,      200,      285,      240,      285} /* UA,UG,G,U/T,U/T */
08242      }
08243      }
08244      , {{{      340,      285,      320,      280,      235} /* UA,UG,U/T,E,E */
08245      , {      340,      285,      320,      280,      235} /* UA,UG,U/T,E,A */
08246      , {      285,      260,      265,      255,      210} /* UA,UG,U/T,E,C */
08247      , {      295,      270,      275,      265,      220} /* UA,UG,U/T,E,G */
08248      , {      295,      270,      275,      265,      220} /* UA,UG,U/T,E,U/T */
08249      }
08250      , {{      295,      270,      275,      265,      235} /* UA,UG,U/T,A,E */
08251      , {      250,      230,      230,      225,      210} /* UA,UG,U/T,A,A */

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08252 , { 285, 260, 265, 255, 210} /* UA,UG,U/T,A,C */
08253 , { 230, 180, 210, 175, 130} /* UA,UG,U/T,A,G */
08254 , { 295, 270, 275, 265, 220} /* UA,UG,U/T,A,U/T */
08255 }
08256 , { { 285, 260, 265, 255, 210} /* UA,UG,U/T,C,E */
08257 , { 285, 260, 265, 255, 210} /* UA,UG,U/T,C,A */
08258 , { 285, 260, 265, 255, 210} /* UA,UG,U/T,C,C */
08259 , { 270, 245, 250, 240, 195} /* UA,UG,U/T,C,G */
08260 , { 285, 260, 265, 255, 210} /* UA,UG,U/T,C,U/T */
08261 }
08262 , { { 340, 285, 320, 280, 235} /* UA,UG,U/T,G,E */
08263 , { 315, 260, 295, 255, 210} /* UA,UG,U/T,G,A */
08264 , { 280, 255, 260, 250, 205} /* UA,UG,U/T,G,C */
08265 , { 225, 180, 185, 175, 195} /* UA,UG,U/T,G,G */
08266 , { 295, 270, 275, 265, 220} /* UA,UG,U/T,G,U/T */
08267 }
08268 , { { 295, 270, 275, 265, 220} /* UA,UG,U/T,U/T,E */
08269 , { 295, 270, 275, 265, 220} /* UA,UG,U/T,U/T,A */
08270 , { 285, 260, 265, 255, 210} /* UA,UG,U/T,U/T,C */
08271 , { 295, 270, 275, 265, 220} /* UA,UG,U/T,U/T,G */
08272 , { 285, 260, 265, 255, 210} /* UA,UG,U/T,U/T,U/T */
08273 }
08274 }
08275 }
08276 , { { { 295, 295, 295, 265, 295} /* UA,AT,E,E,E */
08277 , { 295, 295, 295, 265, 295} /* UA,AT,E,E,A */
08278 , { 270, 270, 270, 245, 270} /* UA,AT,E,E,C */
08279 , { 285, 285, 285, 260, 285} /* UA,AT,E,E,G */
08280 , { 285, 285, 285, 260, 285} /* UA,AT,E,E,U/T */
08281 }
08282 , { { 295, 295, 295, 265, 295} /* UA,AT,E,A,E */
08283 , { 260, 260, 260, 230, 260} /* UA,AT,E,A,A */
08284 , { 255, 255, 255, 230, 255} /* UA,AT,E,A,C */
08285 , { 230, 200, 230, 185, 215} /* UA,AT,E,A,G */
08286 , { 280, 280, 280, 255, 280} /* UA,AT,E,A,U/T */
08287 }
08288 , { { 275, 275, 275, 250, 275} /* UA,AT,E,C,E */
08289 , { 260, 260, 260, 235, 260} /* UA,AT,E,C,A */
08290 , { 270, 270, 270, 245, 270} /* UA,AT,E,C,C */
08291 , { 275, 275, 275, 250, 275} /* UA,AT,E,C,G */
08292 , { 265, 265, 265, 240, 265} /* UA,AT,E,C,U/T */
08293 }
08294 , { { 295, 280, 295, 255, 280} /* UA,AT,E,G,E */
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08296 , { 260, 260, 260, 235, 260} /* UA,AT,E,G,C */
08297 , { 230, 190, 175, 225, 200} /* UA,AT,E,G,G */
08298 , { 280, 280, 280, 255, 280} /* UA,AT,E,G,U/T */
08299 }
08300 , { { 285, 285, 285, 260, 285} /* UA,AT,E,U/T,E */
08301 , { 285, 285, 285, 260, 285} /* UA,AT,E,U/T,A */
08302 , { 265, 265, 265, 240, 265} /* UA,AT,E,U/T,C */
08303 , { 285, 285, 285, 260, 285} /* UA,AT,E,U/T,G */
08304 , { 240, 240, 210, 190, 210} /* UA,AT,E,U/T,U/T */
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08306 }
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08308 , { 295, 265, 270, 215, 295} /* UA,AT,A,E,A */
08309 , { 270, 240, 245, 220, 270} /* UA,AT,A,E,C */
08310 , { 285, 255, 260, 210, 285} /* UA,AT,A,E,G */
08311 , { 285, 255, 260, 235, 285} /* UA,AT,A,E,U/T */
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08313 , { { 295, 265, 270, 215, 295} /* UA,AT,A,A,E */
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08315 , { 255, 225, 230, 180, 255} /* UA,AT,A,A,C */
08316 , { 200, 170, 175, 125, 200} /* UA,AT,A,A,G */
08317 , { 280, 250, 255, 205, 280} /* UA,AT,A,A,U/T */
08318 }
08319 , { { 275, 245, 250, 225, 275} /* UA,AT,A,C,E */
08320 , { 260, 230, 235, 185, 260} /* UA,AT,A,C,A */
08321 , { 270, 240, 245, 220, 270} /* UA,AT,A,C,C */
08322 , { 275, 245, 250, 200, 275} /* UA,AT,A,C,G */
08323 , { 265, 235, 240, 215, 265} /* UA,AT,A,C,U/T */
08324 }
08325 , { { 280, 250, 255, 205, 280} /* UA,AT,A,G,E */
08326 , { 235, 205, 210, 160, 235} /* UA,AT,A,G,A */
08327 , { 260, 230, 235, 185, 260} /* UA,AT,A,G,C */
08328 , { 195, 145, 150, 165, 175} /* UA,AT,A,G,G */
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08333 , { 265, 235, 240, 215, 265} /* UA,AT,A,U/T,C */
08334 , { 285, 255, 260, 210, 285} /* UA,AT,A,U/T,G */
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08337 }
08338 , { { { 280, 245, 280, 245, 260} /* UA,AT,C,E,E */
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08343 }
08344 , { { 280, 245, 280, 245, 260} /* UA,AT,C,A,E */
08345 , { 245, 210, 245, 210, 225} /* UA,AT,C,A,A */
08346 , { 240, 210, 240, 210, 220} /* UA,AT,C,A,C */
08347 , { 215, 155, 215, 155, 195} /* UA,AT,C,A,G */
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08349 }
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08351 , { 245, 215, 245, 215, 225} /* UA,AT,C,C,A */
08352 , { 255, 220, 255, 220, 235} /* UA,AT,C,C,C */
08353 , { 260, 230, 260, 230, 240} /* UA,AT,C,C,G */
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08355 }
08356 , { { 280, 235, 280, 235, 260} /* UA,AT,C,G,E */
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08359 , { 160, 130, 160, 130, 140} /* UA,AT,C,G,G */
08360 , { 265, 235, 265, 235, 245} /* UA,AT,C,G,U/T */
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08362 , { { 270, 240, 270, 240, 250} /* UA,AT,C,U/T,E */
08363 , { 270, 240, 270, 240, 250} /* UA,AT,C,U/T,A */
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08365 , { 270, 240, 270, 240, 250} /* UA,AT,C,U/T,G */
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08368 }
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08370 , { 295, 210, 295, 225, 295} /* UA,AT,G,E,A */
08371 , { 270, 215, 270, 160, 270} /* UA,AT,G,E,C */
08372 , { 285, 205, 285, 230, 285} /* UA,AT,G,E,G */
08373 , { 285, 230, 285, 195, 285} /* UA,AT,G,E,U/T */
08374 }
08375 , { { 295, 210, 295, 190, 295} /* UA,AT,G,A,E */
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08377 , { 255, 175, 255, 150, 255} /* UA,AT,G,A,C */
08378 , { 200, 120, 200, 160, 200} /* UA,AT,G,A,G */
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08381 , { { 275, 220, 275, 170, 275} /* UA,AT,G,C,E */
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08383 , { 270, 215, 270, 160, 270} /* UA,AT,G,C,C */
08384 , { 275, 195, 275, 170, 275} /* UA,AT,G,C,G */
08385 , { 265, 210, 265, 155, 265} /* UA,AT,G,C,U/T */
08386 }
08387 , { { 280, 200, 280, 230, 280} /* UA,AT,G,G,E */
08388 , { 235, 155, 235, 195, 235} /* UA,AT,G,G,A */
08389 , { 260, 180, 260, 155, 260} /* UA,AT,G,G,C */
08390 , { 230, 160, 175, 200, 175} /* UA,AT,G,G,G */
08391 , { 280, 200, 280, 175, 280} /* UA,AT,G,G,U/T */
08392 }
08393 , { { 285, 230, 285, 195, 285} /* UA,AT,G,U/T,E */
08394 , { 285, 205, 285, 180, 285} /* UA,AT,G,U/T,A */
08395 , { 265, 210, 265, 155, 265} /* UA,AT,G,U/T,C */
08396 , { 285, 205, 285, 180, 285} /* UA,AT,G,U/T,G */
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08399 }
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08402 , { 270, 245, 250, 240, 195} /* UA,AT,U/T,E,C */
08403 , { 285, 265, 265, 260, 215} /* UA,AT,U/T,E,G */
08404 , { 285, 260, 265, 255, 210} /* UA,AT,U/T,E,U/T */
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08406 , { { 295, 270, 275, 265, 250} /* UA,AT,U/T,A,E */
08407 , { 260, 235, 240, 230, 215} /* UA,AT,U/T,A,A */
08408 , { 255, 235, 235, 230, 185} /* UA,AT,U/T,A,C */
08409 , { 230, 180, 210, 175, 130} /* UA,AT,U/T,A,G */
08410 , { 280, 260, 260, 255, 210} /* UA,AT,U/T,A,U/T */
08411 }
08412 , { { 275, 255, 255, 250, 205} /* UA,AT,U/T,C,E */
08413 , { 260, 240, 240, 235, 190} /* UA,AT,U/T,C,A */
08414 , { 270, 245, 250, 240, 195} /* UA,AT,U/T,C,C */
08415 , { 275, 255, 255, 250, 205} /* UA,AT,U/T,C,G */
08416 , { 265, 240, 245, 235, 190} /* UA,AT,U/T,C,U/T */
08417 }
08418 , { { 295, 260, 275, 255, 210} /* UA,AT,U/T,G,E */
08419 , { 265, 215, 245, 210, 165} /* UA,AT,U/T,G,A */
08420 , { 260, 240, 240, 235, 190} /* UA,AT,U/T,G,C */
08421 , { 200, 155, 155, 150, 170} /* UA,AT,U/T,G,G */
08422 , { 280, 260, 260, 255, 210} /* UA,AT,U/T,G,U/T */
08423 }
08424 , { { 285, 265, 265, 260, 215} /* UA,AT,U/T,U/T,E */
08425 , { 285, 265, 265, 260, 215} /* UA,AT,U/T,U/T,A */

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08426 , { 265, 240, 245, 235, 190} /* UA,AT,U/T,U/T,C */
08427 , { 285, 265, 265, 260, 215} /* UA,AT,U/T,U/T,G */
08428 , { 210, 185, 190, 180, 135} /* UA,AT,U/T,U/T,U/T */
08429 }
08430 }
08431 }
08432 , {{{ 295, 295, 295, 270, 295} /* UA,UA,E,E,E */
08433 , { 295, 295, 295, 265, 295} /* UA,UA,E,E,A */
08434 , { 280, 280, 280, 255, 280} /* UA,UA,E,E,C */
08435 , { 295, 295, 295, 265, 295} /* UA,UA,E,E,G */
08436 , { 295, 295, 295, 270, 295} /* UA,UA,E,E,U/T */
08437 }
08438 , {{ 295, 295, 295, 265, 295} /* UA,UA,E,A,E */
08439 , { 265, 265, 265, 235, 265} /* UA,UA,E,A,A */
08440 , { 245, 245, 245, 220, 245} /* UA,UA,E,A,C */
08441 , { 240, 210, 240, 195, 225} /* UA,UA,E,A,G */
08442 , { 270, 270, 270, 245, 270} /* UA,UA,E,A,U/T */
08443 }
08444 , {{ 295, 295, 295, 270, 295} /* UA,UA,E,C,E */
08445 , { 270, 270, 270, 240, 270} /* UA,UA,E,C,A */
08446 , { 280, 280, 280, 255, 280} /* UA,UA,E,C,C */
08447 , { 295, 295, 295, 265, 295} /* UA,UA,E,C,G */
08448 , { 275, 275, 275, 250, 275} /* UA,UA,E,C,U/T */
08449 }
08450 , {{ 270, 265, 270, 260, 265} /* UA,UA,E,G,E */
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08452 , { 245, 245, 245, 220, 245} /* UA,UA,E,G,C */
08453 , { 240, 200, 185, 235, 210} /* UA,UA,E,G,G */
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08455 }
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08462 }
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08468 }
08469 , {{ 295, 265, 270, 215, 295} /* UA,UA,A,A,E */
08470 , { 265, 235, 240, 185, 265} /* UA,UA,A,A,A */
08471 , { 245, 215, 220, 170, 245} /* UA,UA,A,A,C */
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08473 , { 270, 240, 245, 195, 270} /* UA,UA,A,A,U/T */
08474 }
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08476 , { 270, 240, 245, 190, 270} /* UA,UA,A,C,A */
08477 , { 280, 250, 255, 230, 280} /* UA,UA,A,C,C */
08478 , { 295, 265, 270, 215, 295} /* UA,UA,A,C,G */
08479 , { 275, 245, 250, 225, 275} /* UA,UA,A,C,U/T */
08480 }
08481 , {{ 265, 235, 240, 200, 265} /* UA,UA,A,G,E */
08482 , { 215, 185, 190, 140, 215} /* UA,UA,A,G,A */
08483 , { 245, 215, 220, 170, 245} /* UA,UA,A,G,C */
08484 , { 205, 155, 160, 175, 185} /* UA,UA,A,G,G */
08485 , { 265, 235, 240, 190, 265} /* UA,UA,A,G,U/T */
08486 }
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08489 , { 260, 230, 235, 210, 260} /* UA,UA,A,U/T,C */
08490 , { 295, 265, 270, 215, 295} /* UA,UA,A,U/T,G */
08491 , { 250, 220, 195, 145, 220} /* UA,UA,A,U/T,U/T */
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08493 }
08494 , {{{ 280, 245, 280, 245, 260} /* UA,UA,C,E,E */
08495 , { 280, 245, 280, 245, 260} /* UA,UA,C,E,A */
08496 , { 265, 230, 265, 230, 245} /* UA,UA,C,E,C */
08497 , { 280, 245, 280, 245, 260} /* UA,UA,C,E,G */
08498 , { 280, 245, 280, 245, 260} /* UA,UA,C,E,U/T */
08499 }
08500 , {{ 280, 245, 280, 245, 260} /* UA,UA,C,A,E */
08501 , { 250, 215, 250, 215, 230} /* UA,UA,C,A,A */
08502 , { 230, 200, 230, 200, 210} /* UA,UA,C,A,C */
08503 , { 225, 165, 225, 165, 205} /* UA,UA,C,A,G */
08504 , { 255, 225, 255, 225, 235} /* UA,UA,C,A,U/T */
08505 }
08506 , {{ 280, 245, 280, 245, 260} /* UA,UA,C,C,E */
08507 , { 255, 220, 255, 220, 235} /* UA,UA,C,C,A */
08508 , { 265, 230, 265, 230, 245} /* UA,UA,C,C,C */
08509 , { 280, 245, 280, 245, 260} /* UA,UA,C,C,G */
08510 , { 260, 225, 260, 225, 240} /* UA,UA,C,C,U/T */
08511 }
08512 , {{ 255, 220, 255, 220, 235} /* UA,UA,C,G,E */
```

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08513      , {      230,      170,      230,      170,      210} /* UA,UA,C,G,A */
08514      , {      230,      200,      230,      200,      210} /* UA,UA,C,G,C */
08515      , {      170,      140,      170,      140,      150} /* UA,UA,C,G,G */
08516      , {      250,      220,      250,      220,      230} /* UA,UA,C,G,U/T */
08517      }
08518      , { {      280,      245,      280,      245,      260} /* UA,UA,C,U/T,E */
08519      , {      280,      245,      280,      245,      260} /* UA,UA,C,U/T,A */
08520      , {      245,      210,      245,      210,      225} /* UA,UA,C,U/T,C */
08521      , {      280,      245,      280,      245,      260} /* UA,UA,C,U/T,G */
08522      , {      205,      175,      205,      175,      185} /* UA,UA,C,U/T,U/T */
08523      }
08524      }
08525      , { { {      295,      240,      295,      240,      295} /* UA,UA,G,E,E */
08526      , {      295,      210,      295,      205,      295} /* UA,UA,G,E,A */
08527      , {      280,      225,      280,      170,      280} /* UA,UA,G,E,C */
08528      , {      295,      210,      295,      240,      295} /* UA,UA,G,E,G */
08529      , {      295,      240,      295,      210,      295} /* UA,UA,G,E,U/T */
08530      }
08531      , { {      295,      210,      295,      200,      295} /* UA,UA,G,A,E */
08532      , {      265,      180,      265,      155,      265} /* UA,UA,G,A,A */
08533      , {      245,      165,      245,      140,      245} /* UA,UA,G,A,C */
08534      , {      210,      130,      210,      170,      210} /* UA,UA,G,A,G */
08535      , {      270,      190,      270,      165,      270} /* UA,UA,G,A,U/T */
08536      }
08537      , { {      295,      240,      295,      185,      295} /* UA,UA,G,C,E */
08538      , {      270,      185,      270,      160,      270} /* UA,UA,G,C,A */
08539      , {      280,      225,      280,      170,      280} /* UA,UA,G,C,C */
08540      , {      295,      210,      295,      185,      295} /* UA,UA,G,C,G */
08541      , {      275,      220,      275,      165,      275} /* UA,UA,G,C,U/T */
08542      }
08543      , { {      265,      195,      265,      235,      265} /* UA,UA,G,G,E */
08544      , {      215,      135,      215,      175,      215} /* UA,UA,G,G,A */
08545      , {      245,      165,      245,      140,      245} /* UA,UA,G,G,C */
08546      , {      240,      170,      185,      210,      185} /* UA,UA,G,G,G */
08547      , {      265,      185,      265,      160,      265} /* UA,UA,G,G,U/T */
08548      }
08549      , { {      295,      225,      295,      210,      295} /* UA,UA,G,U/T,E */
08550      , {      295,      210,      295,      185,      295} /* UA,UA,G,U/T,A */
08551      , {      260,      205,      260,      150,      260} /* UA,UA,G,U/T,C */
08552      , {      295,      210,      295,      185,      295} /* UA,UA,G,U/T,G */
08553      , {      220,      140,      220,      180,      220} /* UA,UA,G,U/T,U/T */
08554      }
08555      }
08556      , { { {      295,      270,      275,      265,      250} /* UA,UA,U/T,E,E */
08557      , {      295,      270,      275,      265,      250} /* UA,UA,U/T,E,A */
08558      , {      280,      255,      260,      250,      205} /* UA,UA,U/T,E,C */
08559      , {      295,      270,      275,      265,      220} /* UA,UA,U/T,E,G */
08560      , {      295,      270,      275,      265,      220} /* UA,UA,U/T,E,U/T */
08561      }
08562      , { {      295,      270,      275,      265,      250} /* UA,UA,U/T,A,E */
08563      , {      265,      240,      245,      235,      220} /* UA,UA,U/T,A,A */
08564      , {      245,      225,      225,      220,      175} /* UA,UA,U/T,A,C */
08565      , {      240,      190,      220,      185,      140} /* UA,UA,U/T,A,G */
08566      , {      270,      250,      250,      245,      200} /* UA,UA,U/T,A,U/T */
08567      }
08568      , { {      295,      270,      275,      265,      220} /* UA,UA,U/T,C,E */
08569      , {      270,      245,      250,      240,      195} /* UA,UA,U/T,C,A */
08570      , {      280,      255,      260,      250,      205} /* UA,UA,U/T,C,C */
08571      , {      295,      270,      275,      265,      220} /* UA,UA,U/T,C,G */
08572      , {      275,      250,      255,      245,      200} /* UA,UA,U/T,C,U/T */
08573      }
08574      , { {      270,      245,      250,      240,      205} /* UA,UA,U/T,G,E */
08575      , {      245,      195,      225,      190,      145} /* UA,UA,U/T,G,A */
08576      , {      245,      225,      225,      220,      175} /* UA,UA,U/T,G,C */
08577      , {      210,      165,      165,      160,      180} /* UA,UA,U/T,G,G */
08578      , {      265,      245,      245,      240,      195} /* UA,UA,U/T,G,U/T */
08579      }
08580      , { {      295,      270,      275,      265,      220} /* UA,UA,U/T,U/T,E */
08581      , {      295,      270,      275,      265,      220} /* UA,UA,U/T,U/T,A */
08582      , {      260,      235,      240,      230,      185} /* UA,UA,U/T,U/T,C */
08583      , {      295,      270,      275,      265,      220} /* UA,UA,U/T,U/T,G */
08584      , {      220,      200,      200,      195,      150} /* UA,UA,U/T,U/T,U/T */
08585      }
08586      }
08587      }
08588      , { { { {      340,      340,      340,      300,      325} /* UA,NN,E,E,E */
08589      , {      340,      325,      340,      300,      325} /* UA,NN,E,E,A */
08590      , {      300,      300,      300,      275,      300} /* UA,NN,E,E,C */
08591      , {      310,      310,      310,      290,      310} /* UA,NN,E,E,G */
08592      , {      340,      340,      310,      290,      310} /* UA,NN,E,E,U/T */
08593      }
08594      , { {      325,      325,      325,      300,      325} /* UA,NN,E,A,E */
08595      , {      300,      300,      300,      275,      300} /* UA,NN,E,A,A */
08596      , {      300,      300,      300,      270,      300} /* UA,NN,E,A,C */
08597      , {      275,      245,      275,      225,      260} /* UA,NN,E,A,G */
08598      , {      310,      310,      310,      280,      310} /* UA,NN,E,A,U/T */
08599      }

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08600 ,{{ 310, 310, 310, 285, 310} /* UA,NN,E,C,E */
08601 ,{ 300, 300, 300, 270, 300} /* UA,NN,E,C,A */
08602 ,{ 300, 300, 300, 275, 300} /* UA,NN,E,C,C */
08603 ,{ 310, 310, 310, 280, 310} /* UA,NN,E,C,G */
08604 ,{ 300, 300, 300, 275, 300} /* UA,NN,E,C,U/T */
08605 }
08606 ,{{ 340, 310, 340, 290, 325} /* UA,NN,E,G,E */
08607 ,{ 315, 285, 315, 265, 300} /* UA,NN,E,G,A */
08608 ,{ 295, 295, 295, 265, 295} /* UA,NN,E,G,C */
08609 ,{ 270, 230, 220, 265, 240} /* UA,NN,E,G,G */
08610 ,{ 310, 310, 310, 280, 310} /* UA,NN,E,G,U/T */
08611 }
08612 ,{{ 340, 340, 310, 290, 310} /* UA,NN,E,U/T,E */
08613 ,{ 310, 310, 310, 280, 310} /* UA,NN,E,U/T,A */
08614 ,{ 300, 300, 300, 275, 300} /* UA,NN,E,U/T,C */
08615 ,{ 310, 310, 310, 280, 310} /* UA,NN,E,U/T,G */
08616 ,{ 330, 330, 300, 280, 300} /* UA,NN,E,U/T,U/T */
08617 }
08618 }
08619 ,{{{ 340, 310, 300, 260, 325} /* UA,NN,A,E,E */
08620 ,{ 325, 295, 300, 250, 325} /* UA,NN,A,E,A */
08621 ,{ 300, 270, 275, 250, 300} /* UA,NN,A,E,C */
08622 ,{ 310, 280, 285, 230, 310} /* UA,NN,A,E,G */
08623 ,{ 340, 310, 285, 260, 310} /* UA,NN,A,E,U/T */
08624 }
08625 ,{{ 325, 295, 300, 250, 325} /* UA,NN,A,A,E */
08626 ,{ 300, 270, 275, 225, 300} /* UA,NN,A,A,A */
08627 ,{ 300, 270, 275, 220, 300} /* UA,NN,A,A,C */
08628 ,{ 245, 215, 220, 165, 245} /* UA,NN,A,A,G */
08629 ,{ 310, 280, 285, 230, 310} /* UA,NN,A,A,U/T */
08630 }
08631 ,{{ 310, 280, 285, 260, 310} /* UA,NN,A,C,E */
08632 ,{ 300, 270, 275, 220, 300} /* UA,NN,A,C,A */
08633 ,{ 300, 270, 275, 250, 300} /* UA,NN,A,C,C */
08634 ,{ 310, 280, 285, 230, 310} /* UA,NN,A,C,G */
08635 ,{ 300, 270, 275, 250, 300} /* UA,NN,A,C,U/T */
08636 }
08637 ,{{ 310, 280, 285, 230, 310} /* UA,NN,A,G,E */
08638 ,{ 285, 255, 260, 205, 285} /* UA,NN,A,G,A */
08639 ,{ 295, 265, 270, 215, 295} /* UA,NN,A,G,C */
08640 ,{ 235, 190, 195, 205, 220} /* UA,NN,A,G,G */
08641 ,{ 310, 280, 285, 230, 310} /* UA,NN,A,G,U/T */
08642 }
08643 ,{{ 340, 310, 285, 260, 310} /* UA,NN,A,U/T,E */
08644 ,{ 310, 280, 285, 230, 310} /* UA,NN,A,U/T,A */
08645 ,{ 300, 270, 275, 250, 300} /* UA,NN,A,U/T,C */
08646 ,{ 310, 280, 285, 230, 310} /* UA,NN,A,U/T,G */
08647 ,{ 330, 300, 275, 220, 300} /* UA,NN,A,U/T,U/T */
08648 }
08649 }
08650 ,{{{ 325, 280, 325, 280, 305} /* UA,NN,C,E,E */
08651 ,{ 325, 280, 325, 280, 305} /* UA,NN,C,E,A */
08652 ,{ 285, 250, 285, 250, 265} /* UA,NN,C,E,C */
08653 ,{ 295, 260, 295, 260, 275} /* UA,NN,C,E,G */
08654 ,{ 295, 260, 295, 260, 275} /* UA,NN,C,E,U/T */
08655 }
08656 ,{{ 310, 280, 310, 280, 290} /* UA,NN,C,A,E */
08657 ,{ 285, 255, 285, 255, 265} /* UA,NN,C,A,A */
08658 ,{ 285, 250, 285, 250, 265} /* UA,NN,C,A,C */
08659 ,{ 260, 195, 260, 195, 240} /* UA,NN,C,A,G */
08660 ,{ 295, 260, 295, 260, 275} /* UA,NN,C,A,U/T */
08661 }
08662 ,{{ 295, 260, 295, 260, 275} /* UA,NN,C,C,E */
08663 ,{ 285, 250, 285, 250, 265} /* UA,NN,C,C,A */
08664 ,{ 285, 250, 285, 250, 265} /* UA,NN,C,C,C */
08665 ,{ 295, 260, 295, 260, 275} /* UA,NN,C,C,G */
08666 ,{ 285, 250, 285, 250, 265} /* UA,NN,C,C,U/T */
08667 }
08668 ,{{ 325, 260, 325, 260, 305} /* UA,NN,C,G,E */
08669 ,{ 300, 235, 300, 235, 280} /* UA,NN,C,G,A */
08670 ,{ 280, 245, 280, 245, 260} /* UA,NN,C,G,C */
08671 ,{ 205, 170, 205, 170, 185} /* UA,NN,C,G,G */
08672 ,{ 295, 260, 295, 260, 275} /* UA,NN,C,G,U/T */
08673 }
08674 ,{{ 295, 260, 295, 260, 275} /* UA,NN,C,U/T,E */
08675 ,{ 295, 260, 295, 260, 275} /* UA,NN,C,U/T,A */
08676 ,{ 285, 250, 285, 250, 265} /* UA,NN,C,U/T,C */
08677 ,{ 295, 260, 295, 260, 275} /* UA,NN,C,U/T,G */
08678 ,{ 285, 250, 285, 250, 265} /* UA,NN,C,U/T,U/T */
08679 }
08680 }
08681 ,{{{ 325, 255, 325, 265, 325} /* UA,NN,G,E,E */
08682 ,{ 325, 245, 325, 265, 325} /* UA,NN,G,E,A */
08683 ,{ 300, 245, 300, 190, 300} /* UA,NN,G,E,C */
08684 ,{ 310, 225, 310, 265, 310} /* UA,NN,G,E,G */
08685 ,{ 310, 255, 310, 265, 310} /* UA,NN,G,E,U/T */
08686 }

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08687 ,{{ 325, 245, 325, 225, 325} /* UA,NN,G,A,E */
08688 ,{ 300, 220, 300, 195, 300} /* UA,NN,G,A,A */
08689 ,{ 300, 215, 300, 190, 300} /* UA,NN,G,A,C */
08690 ,{ 245, 160, 245, 200, 245} /* UA,NN,G,A,G */
08691 ,{ 310, 225, 310, 200, 310} /* UA,NN,G,A,U/T */
08692 }
08693 ,{{ 310, 255, 310, 200, 310} /* UA,NN,G,C,E */
08694 ,{ 300, 215, 300, 190, 300} /* UA,NN,G,C,A */
08695 ,{ 300, 245, 300, 190, 300} /* UA,NN,G,C,C */
08696 ,{ 310, 225, 310, 200, 310} /* UA,NN,G,C,G */
08697 ,{ 300, 245, 300, 190, 300} /* UA,NN,G,C,U/T */
08698 }
08699 ,{{ 310, 225, 310, 265, 310} /* UA,NN,G,G,E */
08700 ,{ 285, 200, 285, 240, 285} /* UA,NN,G,G,A */
08701 ,{ 295, 210, 295, 185, 295} /* UA,NN,G,G,C */
08702 ,{ 270, 200, 220, 240, 220} /* UA,NN,G,G,G */
08703 ,{ 310, 225, 310, 200, 310} /* UA,NN,G,G,U/T */
08704 }
08705 ,{{ 310, 255, 310, 265, 310} /* UA,NN,G,U/T,E */
08706 ,{ 310, 225, 310, 200, 310} /* UA,NN,G,U/T,A */
08707 ,{ 300, 245, 300, 190, 300} /* UA,NN,G,U/T,C */
08708 ,{ 310, 225, 310, 200, 310} /* UA,NN,G,U/T,G */
08709 ,{ 300, 215, 300, 255, 300} /* UA,NN,G,U/T,U/T */
08710 }
08711 }
08712 ,{{{ 340, 305, 320, 300, 285} /* UA,NN,U/T,E,E */
08713 ,{ 340, 305, 320, 300, 285} /* UA,NN,U/T,E,A */
08714 ,{ 300, 275, 280, 270, 225} /* UA,NN,U/T,E,C */
08715 ,{ 310, 285, 290, 280, 235} /* UA,NN,U/T,E,G */
08716 ,{ 310, 285, 290, 280, 235} /* UA,NN,U/T,E,U/T */
08717 }
08718 ,{{ 325, 305, 305, 300, 285} /* UA,NN,U/T,A,E */
08719 ,{ 300, 280, 280, 275, 260} /* UA,NN,U/T,A,A */
08720 ,{ 300, 275, 280, 270, 225} /* UA,NN,U/T,A,C */
08721 ,{ 275, 220, 255, 215, 170} /* UA,NN,U/T,A,G */
08722 ,{ 310, 285, 290, 280, 235} /* UA,NN,U/T,A,U/T */
08723 }
08724 ,{{ 310, 285, 290, 280, 235} /* UA,NN,U/T,C,E */
08725 ,{ 300, 275, 280, 270, 225} /* UA,NN,U/T,C,A */
08726 ,{ 300, 275, 280, 270, 225} /* UA,NN,U/T,C,C */
08727 ,{ 310, 285, 290, 280, 235} /* UA,NN,U/T,C,G */
08728 ,{ 300, 275, 280, 270, 225} /* UA,NN,U/T,C,U/T */
08729 }
08730 ,{{ 340, 285, 320, 280, 235} /* UA,NN,U/T,G,E */
08731 ,{ 315, 260, 295, 255, 210} /* UA,NN,U/T,G,A */
08732 ,{ 295, 270, 275, 265, 220} /* UA,NN,U/T,G,C */
08733 ,{ 240, 195, 200, 190, 210} /* UA,NN,U/T,G,G */
08734 ,{ 310, 285, 290, 280, 235} /* UA,NN,U/T,G,U/T */
08735 }
08736 ,{{ 310, 285, 290, 280, 235} /* UA,NN,U/T,U/T,E */
08737 ,{ 310, 285, 290, 280, 235} /* UA,NN,U/T,U/T,A */
08738 ,{ 300, 275, 280, 270, 225} /* UA,NN,U/T,U/T,C */
08739 ,{ 310, 285, 290, 280, 235} /* UA,NN,U/T,U/T,G */
08740 ,{ 300, 275, 280, 270, 225} /* UA,NN,U/T,U/T,U/T */
08741 }
08742 }
08743 }
08744 }
08745 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E,E,E */
08746 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,E,A */
08747 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,E,C */
08748 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,E,G */
08749 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,E,U/T */
08750 }
08751 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,A,E */
08752 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A,A */
08753 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A,C */
08754 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A,G */
08755 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A,U/T */
08756 }
08757 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,C,E */
08758 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C,A */
08759 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C,C */
08760 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C,G */
08761 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C,U/T */
08762 }
08763 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,G,E */
08764 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G,A */
08765 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G,C */
08766 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G,G */
08767 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G,U/T */
08768 }
08769 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,U/T,E */
08770 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,U/T,A */
08771 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,U/T,C */
08772 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,U/T,G */
08773 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,U/T,U/T */

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08774     }
08775     }
08776     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,A,E,E */
08777     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,E,A */
08778     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,E,C */
08779     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,E,G */
08780     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,E,U/T */
08781     }
08782     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,A,A,E */
08783     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,A,A */
08784     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,A,C */
08785     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,A,G */
08786     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,A,U/T */
08787     }
08788     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,A,C,E */
08789     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,C,A */
08790     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,C,C */
08791     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,C,G */
08792     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,C,U/T */
08793     }
08794     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,A,G,E */
08795     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,G,A */
08796     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,G,C */
08797     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,G,G */
08798     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,G,U/T */
08799     }
08800     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,A,U/T,E */
08801     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,U/T,A */
08802     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,U/T,C */
08803     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,U/T,G */
08804     ,{ INF, INF, INF, INF, INF } /* NN,NP,A,U/T,U/T */
08805     }
08806     }
08807     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,C,E,E */
08808     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,E,A */
08809     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,E,C */
08810     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,E,G */
08811     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,E,U/T */
08812     }
08813     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,C,A,E */
08814     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,A,A */
08815     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,A,C */
08816     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,A,G */
08817     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,A,U/T */
08818     }
08819     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,C,C,E */
08820     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,C,A */
08821     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,C,C */
08822     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,C,G */
08823     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,C,U/T */
08824     }
08825     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,C,G,E */
08826     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,G,A */
08827     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,G,C */
08828     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,G,G */
08829     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,G,U/T */
08830     }
08831     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,C,U/T,E */
08832     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,U/T,A */
08833     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,U/T,C */
08834     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,U/T,G */
08835     ,{ INF, INF, INF, INF, INF } /* NN,NP,C,U/T,U/T */
08836     }
08837     }
08838     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,G,E,E */
08839     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,E,A */
08840     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,E,C */
08841     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,E,G */
08842     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,E,U/T */
08843     }
08844     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,G,A,E */
08845     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,A,A */
08846     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,A,C */
08847     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,A,G */
08848     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,A,U/T */
08849     }
08850     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,G,C,E */
08851     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,C,A */
08852     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,C,C */
08853     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,C,G */
08854     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,C,U/T */
08855     }
08856     ,{{ { INF, INF, INF, INF, INF } /* NN,NP,G,G,E */
08857     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,G,A */
08858     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,G,C */
08859     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,G,G */
08860     ,{ INF, INF, INF, INF, INF } /* NN,NP,G,G,U/T */
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08861      }
08862      ,{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,E */
08863      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,A */
08864      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,C */
08865      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,G */
08866      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,U/T */
08867      }
08868      }
08869      ,{{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,E */
08870      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,A */
08871      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,C */
08872      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,G */
08873      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,U/T */
08874      }
08875      ,{{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,A,E */
08876      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,A,A */
08877      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,A,C */
08878      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,A,G */
08879      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,A,U/T */
08880      }
08881      ,{{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,C,E */
08882      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,C,A */
08883      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,C,C */
08884      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,C,G */
08885      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,C,U/T */
08886      }
08887      ,{{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,G,E */
08888      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,G,A */
08889      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,G,C */
08890      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,G,G */
08891      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,G,U/T */
08892      }
08893      ,{{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,U/T,E */
08894      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,U/T,A */
08895      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,U/T,C */
08896      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,U/T,G */
08897      ,{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,U/T,U/T */
08898      }
08899      }
08900      }
08901      ,{{{      300,      295,      280,      300,      290} /* NN,CG,E,E,E */
08902      ,{      285,      285,      270,      270,      280} /* NN,CG,E,E,A */
08903      ,{      285,      275,      255,      285,      255} /* NN,CG,E,E,C */
08904      ,{      280,      280,      265,      265,      265} /* NN,CG,E,E,G */
08905      ,{      295,      280,      265,      295,      265} /* NN,CG,E,E,U/T */
08906      }
08907      ,{{{      290,      280,      260,      260,      290} /* NN,CG,E,A,E */
08908      ,{      250,      240,      220,      220,      250} /* NN,CG,E,A,A */
08909      ,{      250,      250,      230,      230,      230} /* NN,CG,E,A,C */
08910      ,{      205,      195,      205,      175,      205} /* NN,CG,E,A,G */
08911      ,{      275,      275,      255,      255,      255} /* NN,CG,E,A,U/T */
08912      }
08913      ,{{{      285,      280,      265,      285,      265} /* NN,CG,E,C,E */
08914      ,{      270,      270,      255,      255,      255} /* NN,CG,E,C,A */
08915      ,{      285,      275,      255,      285,      255} /* NN,CG,E,C,C */
08916      ,{      250,      250,      235,      235,      235} /* NN,CG,E,C,G */
08917      ,{      270,      255,      240,      270,      240} /* NN,CG,E,C,U/T */
08918      }
08919      ,{{{      265,      265,      245,      245,      245} /* NN,CG,E,G,E */
08920      ,{      205,      195,      205,      175,      205} /* NN,CG,E,G,A */
08921      ,{      245,      245,      225,      225,      225} /* NN,CG,E,G,C */
08922      ,{      215,      175,      150,      215,      215} /* NN,CG,E,G,G */
08923      ,{      265,      265,      245,      245,      245} /* NN,CG,E,G,U/T */
08924      }
08925      ,{{{      285,      285,      270,      285,      270} /* NN,CG,E,U/T,E */
08926      ,{      285,      285,      270,      270,      270} /* NN,CG,E,U/T,A */
08927      ,{      270,      255,      240,      270,      240} /* NN,CG,E,U/T,C */
08928      ,{      280,      280,      265,      265,      265} /* NN,CG,E,U/T,G */
08929      ,{      230,      230,      185,      185,      185} /* NN,CG,E,U/T,U/T */
08930      }
08931      }
08932      ,{{{      300,      270,      270,      275,      280} /* NN,CG,A,E,E */
08933      ,{      285,      260,      260,      245,      270} /* NN,CG,A,E,A */
08934      ,{      285,      250,      245,      260,      255} /* NN,CG,A,E,C */
08935      ,{      280,      255,      255,      240,      265} /* NN,CG,A,E,G */
08936      ,{      295,      255,      255,      270,      265} /* NN,CG,A,E,U/T */
08937      }
08938      ,{{{      280,      255,      250,      235,      260} /* NN,CG,A,A,E */
08939      ,{      240,      215,      210,      195,      220} /* NN,CG,A,A,A */
08940      ,{      250,      225,      220,      205,      230} /* NN,CG,A,A,C */
08941      ,{      195,      170,      165,      150,      175} /* NN,CG,A,A,G */
08942      ,{      275,      250,      245,      230,      255} /* NN,CG,A,A,U/T */
08943      }
08944      ,{{{      285,      255,      255,      260,      265} /* NN,CG,A,C,E */
08945      ,{      270,      245,      245,      230,      255} /* NN,CG,A,C,A */
08946      ,{      285,      250,      245,      260,      255} /* NN,CG,A,C,C */
08947      ,{      250,      225,      225,      210,      235} /* NN,CG,A,C,G */

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08948 , { 270, 230, 230, 245, 240} /* NN,CG,A,C,U/T */
08949 }
08950 , { { 265, 240, 235, 220, 245} /* NN,CG,A,G,E */
08951 , { 195, 170, 165, 150, 175} /* NN,CG,A,G,A */
08952 , { 245, 220, 215, 200, 225} /* NN,CG,A,G,C */
08953 , { 215, 140, 140, 190, 150} /* NN,CG,A,G,G */
08954 , { 265, 240, 235, 220, 245} /* NN,CG,A,G,U/T */
08955 }
08956 , { { 285, 260, 260, 260, 270} /* NN,CG,A,U/T,E */
08957 , { 285, 260, 260, 245, 270} /* NN,CG,A,U/T,A */
08958 , { 270, 230, 230, 245, 240} /* NN,CG,A,U/T,C */
08959 , { 280, 255, 255, 240, 265} /* NN,CG,A,U/T,G */
08960 , { 230, 205, 175, 160, 185} /* NN,CG,A,U/T,U/T */
08961 }
08962 }
08963 , { { { 270, 270, 270, 265, 270} /* NN,CG,C,E,E */
08964 , { 260, 260, 260, 255, 260} /* NN,CG,C,E,A */
08965 , { 245, 245, 245, 240, 245} /* NN,CG,C,E,C */
08966 , { 255, 255, 255, 250, 255} /* NN,CG,C,E,G */
08967 , { 255, 255, 255, 250, 255} /* NN,CG,C,E,U/T */
08968 }
08969 , { { 250, 250, 250, 245, 250} /* NN,CG,C,A,E */
08970 , { 210, 210, 210, 205, 210} /* NN,CG,C,A,A */
08971 , { 220, 220, 220, 215, 220} /* NN,CG,C,A,C */
08972 , { 195, 165, 195, 160, 195} /* NN,CG,C,A,G */
08973 , { 245, 245, 245, 240, 245} /* NN,CG,C,A,U/T */
08974 }
08975 , { { 255, 255, 255, 250, 255} /* NN,CG,C,C,E */
08976 , { 245, 245, 245, 240, 245} /* NN,CG,C,C,A */
08977 , { 245, 245, 245, 240, 245} /* NN,CG,C,C,C */
08978 , { 225, 225, 225, 220, 225} /* NN,CG,C,C,G */
08979 , { 230, 230, 230, 225, 230} /* NN,CG,C,C,U/T */
08980 }
08981 , { { 235, 235, 235, 230, 235} /* NN,CG,C,G,E */
08982 , { 195, 165, 195, 160, 195} /* NN,CG,C,G,A */
08983 , { 215, 215, 215, 210, 215} /* NN,CG,C,G,C */
08984 , { 140, 140, 140, 135, 140} /* NN,CG,C,G,G */
08985 , { 235, 235, 235, 230, 235} /* NN,CG,C,G,U/T */
08986 }
08987 , { { 260, 260, 260, 255, 260} /* NN,CG,C,U/T,E */
08988 , { 260, 260, 260, 255, 260} /* NN,CG,C,U/T,A */
08989 , { 230, 230, 230, 225, 230} /* NN,CG,C,U/T,C */
08990 , { 255, 255, 255, 250, 255} /* NN,CG,C,U/T,G */
08991 , { 175, 175, 175, 170, 175} /* NN,CG,C,U/T,U/T */
08992 }
08993 }
08994 , { { { 280, 235, 280, 225, 280} /* NN,CG,G,E,E */
08995 , { 270, 205, 270, 180, 270} /* NN,CG,G,E,A */
08996 , { 255, 220, 255, 165, 255} /* NN,CG,G,E,C */
08997 , { 265, 200, 265, 210, 265} /* NN,CG,G,E,G */
08998 , { 265, 230, 265, 195, 265} /* NN,CG,G,E,U/T */
08999 }
09000 , { { 260, 195, 260, 185, 260} /* NN,CG,G,A,E */
09001 , { 220, 155, 220, 130, 220} /* NN,CG,G,A,A */
09002 , { 230, 165, 230, 140, 230} /* NN,CG,G,A,C */
09003 , { 175, 110, 175, 150, 175} /* NN,CG,G,A,G */
09004 , { 255, 190, 255, 165, 255} /* NN,CG,G,A,U/T */
09005 }
09006 , { { 265, 220, 265, 175, 265} /* NN,CG,G,C,E */
09007 , { 255, 190, 255, 165, 255} /* NN,CG,G,C,A */
09008 , { 255, 220, 255, 165, 255} /* NN,CG,G,C,C */
09009 , { 235, 170, 235, 145, 235} /* NN,CG,G,C,G */
09010 , { 240, 205, 240, 150, 240} /* NN,CG,G,C,U/T */
09011 }
09012 , { { 245, 180, 245, 215, 245} /* NN,CG,G,G,E */
09013 , { 175, 110, 175, 150, 175} /* NN,CG,G,G,A */
09014 , { 225, 160, 225, 135, 225} /* NN,CG,G,G,C */
09015 , { 215, 150, 150, 190, 150} /* NN,CG,G,G,G */
09016 , { 245, 180, 245, 155, 245} /* NN,CG,G,G,U/T */
09017 }
09018 , { { 270, 220, 270, 185, 270} /* NN,CG,G,U/T,E */
09019 , { 270, 205, 270, 180, 270} /* NN,CG,G,U/T,A */
09020 , { 240, 205, 240, 150, 240} /* NN,CG,G,U/T,C */
09021 , { 265, 200, 265, 175, 265} /* NN,CG,G,U/T,G */
09022 , { 185, 120, 185, 160, 185} /* NN,CG,G,U/T,U/T */
09023 }
09024 }
09025 , { { { 290, 280, 270, 280, 280} /* NN,CG,U/T,E,E */
09026 , { 280, 270, 260, 270, 270} /* NN,CG,U/T,E,A */
09027 , { 255, 255, 245, 255, 245} /* NN,CG,U/T,E,C */
09028 , { 265, 265, 255, 265, 255} /* NN,CG,U/T,E,G */
09029 , { 265, 265, 255, 265, 255} /* NN,CG,U/T,E,U/T */
09030 }
09031 , { { 290, 260, 250, 260, 280} /* NN,CG,U/T,A,E */
09032 , { 250, 220, 210, 220, 240} /* NN,CG,U/T,A,A */
09033 , { 230, 230, 220, 230, 220} /* NN,CG,U/T,A,C */
09034 , { 205, 175, 195, 175, 165} /* NN,CG,U/T,A,G */

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09035      , {      255,      255,      245,      255,      245} /* NN,CG,U/T,A,U/T */
09036      }
09037      , {{      265,      265,      255,      265,      255} /* NN,CG,U/T,C,E */
09038      , {      255,      255,      245,      255,      245} /* NN,CG,U/T,C,A */
09039      , {      255,      255,      245,      255,      245} /* NN,CG,U/T,C,C */
09040      , {      235,      235,      225,      235,      225} /* NN,CG,U/T,C,G */
09041      , {      240,      240,      230,      240,      230} /* NN,CG,U/T,C,U/T */
09042      }
09043      , {{      245,      245,      235,      245,      235} /* NN,CG,U/T,G,E */
09044      , {      205,      175,      195,      175,      165} /* NN,CG,U/T,G,A */
09045      , {      225,      225,      215,      225,      215} /* NN,CG,U/T,G,C */
09046      , {      215,      150,      140,      150,      205} /* NN,CG,U/T,G,G */
09047      , {      245,      245,      235,      245,      235} /* NN,CG,U/T,G,U/T */
09048      }
09049      , {{      270,      270,      260,      270,      260} /* NN,CG,U/T,U/T,E */
09050      , {      270,      270,      260,      270,      260} /* NN,CG,U/T,U/T,A */
09051      , {      240,      240,      230,      240,      230} /* NN,CG,U/T,U/T,C */
09052      , {      265,      265,      255,      265,      255} /* NN,CG,U/T,U/T,G */
09053      , {      185,      185,      175,      185,      175} /* NN,CG,U/T,U/T,U/T */
09054      }
09055      }
09056      }
09057      , {{{      290,      280,      260,      280,      290} /* NN,GC,E,E,E */
09058      , {      280,      270,      250,      250,      280} /* NN,GC,E,E,A */
09059      , {      265,      255,      235,      265,      235} /* NN,GC,E,E,C */
09060      , {      265,      265,      245,      245,      245} /* NN,GC,E,E,G */
09061      , {      275,      260,      245,      275,      245} /* NN,GC,E,E,U/T */
09062      }
09063      , {{      285,      275,      255,      255,      285} /* NN,GC,E,A,E */
09064      , {      250,      240,      220,      220,      250} /* NN,GC,E,A,A */
09065      , {      240,      240,      225,      225,      225} /* NN,GC,E,A,C */
09066      , {      155,      140,      155,      125,      155} /* NN,GC,E,A,G */
09067      , {      260,      260,      245,      245,      245} /* NN,GC,E,A,U/T */
09068      }
09069      , {{      265,      250,      235,      265,      235} /* NN,GC,E,C,E */
09070      , {      240,      240,      220,      220,      220} /* NN,GC,E,C,A */
09071      , {      265,      250,      235,      265,      235} /* NN,GC,E,C,C */
09072      , {      240,      240,      220,      220,      220} /* NN,GC,E,C,G */
09073      , {      260,      245,      230,      260,      230} /* NN,GC,E,C,U/T */
09074      }
09075      , {{      260,      260,      245,      245,      245} /* NN,GC,E,G,E */
09076      , {      185,      175,      185,      155,      185} /* NN,GC,E,G,A */
09077      , {      215,      215,      200,      200,      200} /* NN,GC,E,G,C */
09078      , {      210,      170,      145,      210,      210} /* NN,GC,E,G,G */
09079      , {      260,      260,      245,      245,      245} /* NN,GC,E,G,U/T */
09080      }
09081      , {{      280,      270,      250,      280,      250} /* NN,GC,E,U/T,E */
09082      , {      255,      255,      235,      235,      235} /* NN,GC,E,U/T,A */
09083      , {      260,      250,      230,      260,      230} /* NN,GC,E,U/T,C */
09084      , {      265,      265,      245,      245,      245} /* NN,GC,E,U/T,G */
09085      , {      230,      230,      180,      180,      180} /* NN,GC,E,U/T,U/T */
09086      }
09087      }
09088      , {{{      280,      255,      250,      255,      260} /* NN,GC,A,E,E */
09089      , {      270,      245,      240,      225,      250} /* NN,GC,A,E,A */
09090      , {      265,      230,      225,      240,      235} /* NN,GC,A,E,C */
09091      , {      265,      240,      235,      220,      245} /* NN,GC,A,E,G */
09092      , {      275,      235,      235,      250,      245} /* NN,GC,A,E,U/T */
09093      }
09094      , {{      275,      250,      245,      230,      255} /* NN,GC,A,A,E */
09095      , {      240,      215,      210,      195,      220} /* NN,GC,A,A,A */
09096      , {      240,      215,      215,      200,      225} /* NN,GC,A,A,C */
09097      , {      140,      115,      115,      100,      125} /* NN,GC,A,A,G */
09098      , {      260,      235,      235,      220,      245} /* NN,GC,A,A,U/T */
09099      }
09100      , {{      265,      225,      225,      240,      235} /* NN,GC,A,C,E */
09101      , {      240,      215,      210,      195,      220} /* NN,GC,A,C,A */
09102      , {      265,      225,      225,      240,      235} /* NN,GC,A,C,C */
09103      , {      240,      215,      210,      195,      220} /* NN,GC,A,C,G */
09104      , {      260,      220,      220,      235,      230} /* NN,GC,A,C,U/T */
09105      }
09106      , {{      260,      235,      235,      220,      245} /* NN,GC,A,G,E */
09107      , {      175,      150,      145,      130,      155} /* NN,GC,A,G,A */
09108      , {      215,      190,      190,      175,      200} /* NN,GC,A,G,C */
09109      , {      210,      135,      135,      185,      145} /* NN,GC,A,G,G */
09110      , {      260,      235,      235,      220,      245} /* NN,GC,A,G,U/T */
09111      }
09112      , {{      280,      245,      240,      255,      250} /* NN,GC,A,U/T,E */
09113      , {      255,      230,      225,      210,      235} /* NN,GC,A,U/T,A */
09114      , {      260,      225,      220,      235,      230} /* NN,GC,A,U/T,C */
09115      , {      265,      240,      235,      220,      245} /* NN,GC,A,U/T,G */
09116      , {      230,      205,      170,      155,      180} /* NN,GC,A,U/T,U/T */
09117      }
09118      }
09119      , {{{      250,      250,      250,      245,      250} /* NN,GC,C,E,E */
09120      , {      240,      240,      240,      235,      240} /* NN,GC,C,E,A */
09121      , {      225,      225,      225,      220,      225} /* NN,GC,C,E,C */

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09122 , { 235, 235, 235, 230, 235} /* NN,GC,C,E,G */
09123 , { 235, 235, 235, 230, 235} /* NN,GC,C,E,U/T */
09124 }
09125 , { { 245, 245, 245, 240, 245} /* NN,GC,C,A,E */
09126 , { 210, 210, 210, 205, 210} /* NN,GC,C,A,A */
09127 , { 215, 215, 215, 210, 215} /* NN,GC,C,A,C */
09128 , { 145, 115, 145, 110, 145} /* NN,GC,C,A,G */
09129 , { 235, 235, 235, 230, 235} /* NN,GC,C,A,U/T */
09130 }
09131 , { { 225, 225, 225, 220, 225} /* NN,GC,C,C,E */
09132 , { 210, 210, 210, 205, 210} /* NN,GC,C,C,A */
09133 , { 225, 225, 225, 220, 225} /* NN,GC,C,C,C */
09134 , { 210, 210, 210, 205, 210} /* NN,GC,C,C,G */
09135 , { 220, 220, 220, 215, 220} /* NN,GC,C,C,U/T */
09136 }
09137 , { { 235, 235, 235, 230, 235} /* NN,GC,C,G,E */
09138 , { 175, 145, 175, 140, 175} /* NN,GC,C,G,A */
09139 , { 190, 190, 190, 185, 190} /* NN,GC,C,G,C */
09140 , { 135, 135, 135, 130, 135} /* NN,GC,C,G,G */
09141 , { 235, 235, 235, 230, 235} /* NN,GC,C,G,U/T */
09142 }
09143 , { { 240, 240, 240, 235, 240} /* NN,GC,C,U/T,E */
09144 , { 225, 225, 225, 220, 225} /* NN,GC,C,U/T,A */
09145 , { 220, 220, 220, 215, 220} /* NN,GC,C,U/T,C */
09146 , { 235, 235, 235, 230, 235} /* NN,GC,C,U/T,G */
09147 , { 170, 170, 170, 165, 170} /* NN,GC,C,U/T,U/T */
09148 }
09149 }
09150 , { { { 260, 215, 260, 220, 260} /* NN,GC,G,E,E */
09151 , { 250, 185, 250, 160, 250} /* NN,GC,G,E,A */
09152 , { 235, 200, 235, 145, 235} /* NN,GC,G,E,C */
09153 , { 245, 180, 245, 220, 245} /* NN,GC,G,E,G */
09154 , { 245, 210, 245, 180, 245} /* NN,GC,G,E,U/T */
09155 }
09156 , { { 255, 190, 255, 165, 255} /* NN,GC,G,A,E */
09157 , { 220, 155, 220, 130, 220} /* NN,GC,G,A,A */
09158 , { 225, 160, 225, 135, 225} /* NN,GC,G,A,C */
09159 , { 125, 60, 125, 100, 125} /* NN,GC,G,A,G */
09160 , { 245, 180, 245, 155, 245} /* NN,GC,G,A,U/T */
09161 }
09162 , { { 235, 200, 235, 145, 235} /* NN,GC,G,C,E */
09163 , { 220, 155, 220, 130, 220} /* NN,GC,G,C,A */
09164 , { 235, 200, 235, 145, 235} /* NN,GC,G,C,C */
09165 , { 220, 155, 220, 130, 220} /* NN,GC,G,C,G */
09166 , { 230, 195, 230, 140, 230} /* NN,GC,G,C,U/T */
09167 }
09168 , { { 245, 180, 245, 215, 245} /* NN,GC,G,G,E */
09169 , { 155, 90, 155, 130, 155} /* NN,GC,G,G,A */
09170 , { 200, 135, 200, 110, 200} /* NN,GC,G,G,C */
09171 , { 210, 145, 145, 185, 145} /* NN,GC,G,G,G */
09172 , { 245, 180, 245, 155, 245} /* NN,GC,G,G,U/T */
09173 }
09174 , { { 250, 215, 250, 185, 250} /* NN,GC,G,U/T,E */
09175 , { 235, 170, 235, 145, 235} /* NN,GC,G,U/T,A */
09176 , { 230, 195, 230, 140, 230} /* NN,GC,G,U/T,C */
09177 , { 245, 180, 245, 155, 245} /* NN,GC,G,U/T,G */
09178 , { 180, 130, 180, 155, 180} /* NN,GC,G,U/T,U/T */
09179 }
09180 }
09181 , { { { 290, 260, 250, 260, 280} /* NN,GC,U/T,E,E */
09182 , { 280, 250, 240, 250, 270} /* NN,GC,U/T,E,A */
09183 , { 235, 235, 225, 235, 225} /* NN,GC,U/T,E,C */
09184 , { 245, 245, 235, 245, 235} /* NN,GC,U/T,E,G */
09185 , { 245, 245, 235, 245, 235} /* NN,GC,U/T,E,U/T */
09186 }
09187 , { { 285, 255, 245, 255, 275} /* NN,GC,U/T,A,E */
09188 , { 250, 220, 210, 220, 240} /* NN,GC,U/T,A,A */
09189 , { 225, 225, 215, 225, 215} /* NN,GC,U/T,A,C */
09190 , { 155, 125, 145, 125, 120} /* NN,GC,U/T,A,G */
09191 , { 245, 245, 235, 245, 235} /* NN,GC,U/T,A,U/T */
09192 }
09193 , { { 235, 235, 225, 235, 225} /* NN,GC,U/T,C,E */
09194 , { 220, 220, 210, 220, 210} /* NN,GC,U/T,C,A */
09195 , { 235, 235, 225, 235, 225} /* NN,GC,U/T,C,C */
09196 , { 220, 220, 210, 220, 210} /* NN,GC,U/T,C,G */
09197 , { 230, 230, 220, 230, 220} /* NN,GC,U/T,C,U/T */
09198 }
09199 , { { 245, 245, 235, 245, 235} /* NN,GC,U/T,G,E */
09200 , { 185, 155, 175, 155, 165} /* NN,GC,U/T,G,A */
09201 , { 200, 200, 190, 200, 190} /* NN,GC,U/T,G,C */
09202 , { 210, 145, 135, 145, 200} /* NN,GC,U/T,G,G */
09203 , { 245, 245, 235, 245, 235} /* NN,GC,U/T,G,U/T */
09204 }
09205 , { { 250, 250, 240, 250, 240} /* NN,GC,U/T,U/T,E */
09206 , { 235, 235, 225, 235, 225} /* NN,GC,U/T,U/T,A */
09207 , { 230, 230, 220, 230, 220} /* NN,GC,U/T,U/T,C */
09208 , { 245, 245, 235, 245, 235} /* NN,GC,U/T,U/T,G */
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09209      , {      180,      180,      170,      180,      170} /* NN,GC,U/T,U/T,U/T */
09210      }
09211      }
09212      }
09213      ,{{{      370,      370,      340,      355,      370} /* NN,GT,E,E,E */
09214      , {      360,      350,      330,      330,      360} /* NN,GT,E,E,A */
09215      , {      345,      330,      315,      345,      315} /* NN,GT,E,E,C */
09216      , {      340,      340,      325,      325,      325} /* NN,GT,E,E,G */
09217      , {      370,      370,      325,      355,      325} /* NN,GT,E,E,U/T */
09218      }
09219      , { {      370,      360,      340,      340,      370} /* NN,GT,E,A,E */
09220      , {      345,      335,      315,      315,      345} /* NN,GT,E,A,A */
09221      , {      330,      330,      315,      315,      315} /* NN,GT,E,A,C */
09222      , {      290,      275,      290,      260,      290} /* NN,GT,E,A,G */
09223      , {      340,      340,      325,      325,      325} /* NN,GT,E,A,U/T */
09224      }
09225      , { {      345,      330,      315,      345,      315} /* NN,GT,E,C,E */
09226      , {      330,      330,      315,      315,      315} /* NN,GT,E,C,A */
09227      , {      345,      330,      315,      345,      315} /* NN,GT,E,C,C */
09228      , {      320,      320,      305,      305,      305} /* NN,GT,E,C,G */
09229      , {      345,      330,      315,      345,      315} /* NN,GT,E,C,U/T */
09230      }
09231      , { {      340,      340,      335,      325,      335} /* NN,GT,E,G,E */
09232      , {      310,      310,      310,      280,      310} /* NN,GT,E,G,A */
09233      , {      320,      320,      305,      305,      305} /* NN,GT,E,G,C */
09234      , {      300,      260,      235,      300,      300} /* NN,GT,E,G,G */
09235      , {      340,      340,      325,      325,      325} /* NN,GT,E,G,U/T */
09236      }
09237      , { {      370,      370,      325,      355,      325} /* NN,GT,E,U/T,E */
09238      , {      330,      330,      315,      315,      315} /* NN,GT,E,U/T,A */
09239      , {      345,      330,      315,      345,      315} /* NN,GT,E,U/T,C */
09240      , {      340,      340,      325,      325,      325} /* NN,GT,E,U/T,G */
09241      , {      360,      360,      315,      315,      315} /* NN,GT,E,U/T,U/T */
09242      }
09243      }
09244      ,{{{      370,      345,      330,      330,      340} /* NN,GT,A,E,E */
09245      , {      350,      325,      320,      305,      330} /* NN,GT,A,E,A */
09246      , {      345,      305,      305,      320,      315} /* NN,GT,A,E,C */
09247      , {      340,      315,      315,      300,      325} /* NN,GT,A,E,G */
09248      , {      370,      345,      315,      330,      325} /* NN,GT,A,E,U/T */
09249      }
09250      , { {      360,      335,      330,      315,      340} /* NN,GT,A,A,E */
09251      , {      335,      310,      305,      290,      315} /* NN,GT,A,A,A */
09252      , {      330,      305,      305,      290,      315} /* NN,GT,A,A,C */
09253      , {      275,      250,      250,      235,      260} /* NN,GT,A,A,G */
09254      , {      340,      315,      315,      300,      325} /* NN,GT,A,A,U/T */
09255      }
09256      , { {      345,      305,      305,      320,      315} /* NN,GT,A,C,E */
09257      , {      330,      305,      305,      290,      315} /* NN,GT,A,C,A */
09258      , {      345,      305,      305,      320,      315} /* NN,GT,A,C,C */
09259      , {      320,      295,      295,      280,      305} /* NN,GT,A,C,G */
09260      , {      345,      305,      305,      320,      315} /* NN,GT,A,C,U/T */
09261      }
09262      , { {      340,      315,      315,      300,      325} /* NN,GT,A,G,E */
09263      , {      310,      285,      270,      255,      280} /* NN,GT,A,G,A */
09264      , {      320,      295,      295,      280,      305} /* NN,GT,A,G,C */
09265      , {      300,      225,      225,      275,      235} /* NN,GT,A,G,G */
09266      , {      340,      315,      315,      300,      325} /* NN,GT,A,G,U/T */
09267      }
09268      , { {      370,      345,      315,      330,      325} /* NN,GT,A,U/T,E */
09269      , {      330,      305,      305,      290,      315} /* NN,GT,A,U/T,A */
09270      , {      345,      305,      305,      320,      315} /* NN,GT,A,U/T,C */
09271      , {      340,      315,      315,      300,      325} /* NN,GT,A,U/T,G */
09272      , {      360,      335,      305,      290,      315} /* NN,GT,A,U/T,U/T */
09273      }
09274      }
09275      ,{{{      330,      330,      330,      325,      330} /* NN,GT,C,E,E */
09276      , {      320,      320,      320,      315,      320} /* NN,GT,C,E,A */
09277      , {      305,      305,      305,      300,      305} /* NN,GT,C,E,C */
09278      , {      315,      315,      315,      310,      315} /* NN,GT,C,E,G */
09279      , {      315,      315,      315,      310,      315} /* NN,GT,C,E,U/T */
09280      }
09281      , { {      330,      330,      330,      325,      330} /* NN,GT,C,A,E */
09282      , {      305,      305,      305,      300,      305} /* NN,GT,C,A,A */
09283      , {      305,      305,      305,      300,      305} /* NN,GT,C,A,C */
09284      , {      280,      250,      280,      245,      280} /* NN,GT,C,A,G */
09285      , {      315,      315,      315,      310,      315} /* NN,GT,C,A,U/T */
09286      }
09287      , { {      305,      305,      305,      300,      305} /* NN,GT,C,C,E */
09288      , {      305,      305,      305,      300,      305} /* NN,GT,C,C,A */
09289      , {      305,      305,      305,      300,      305} /* NN,GT,C,C,C */
09290      , {      295,      295,      295,      290,      295} /* NN,GT,C,C,G */
09291      , {      305,      305,      305,      300,      305} /* NN,GT,C,C,U/T */
09292      }
09293      , { {      325,      315,      325,      310,      325} /* NN,GT,C,G,E */
09294      , {      300,      270,      300,      265,      300} /* NN,GT,C,G,A */
09295      , {      295,      295,      295,      290,      295} /* NN,GT,C,G,C */

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09296 , { 225, 225, 225, 220, 225} /* NN,GT,C,G,G */
09297 , { 315, 315, 315, 310, 315} /* NN,GT,C,G,U/T */
09298 }
09299 , { { 315, 315, 315, 310, 315} /* NN,GT,C,U/T,E */
09300 , { 305, 305, 305, 300, 305} /* NN,GT,C,U/T,A */
09301 , { 305, 305, 305, 300, 305} /* NN,GT,C,U/T,C */
09302 , { 315, 315, 315, 310, 315} /* NN,GT,C,U/T,G */
09303 , { 305, 305, 305, 300, 305} /* NN,GT,C,U/T,U/T */
09304 }
09305 }
09306 , { { { 340, 290, 340, 300, 340} /* NN,GT,G,E,E */
09307 , { 330, 265, 330, 270, 330} /* NN,GT,G,E,A */
09308 , { 315, 280, 315, 225, 315} /* NN,GT,G,E,C */
09309 , { 325, 260, 325, 300, 325} /* NN,GT,G,E,G */
09310 , { 325, 290, 325, 300, 325} /* NN,GT,G,E,U/T */
09311 }
09312 , { { 340, 275, 340, 260, 340} /* NN,GT,G,A,E */
09313 , { 315, 250, 315, 225, 315} /* NN,GT,G,A,A */
09314 , { 315, 250, 315, 225, 315} /* NN,GT,G,A,C */
09315 , { 260, 195, 260, 235, 260} /* NN,GT,G,A,G */
09316 , { 325, 260, 325, 235, 325} /* NN,GT,G,A,U/T */
09317 }
09318 , { { 315, 280, 315, 225, 315} /* NN,GT,G,C,E */
09319 , { 315, 250, 315, 225, 315} /* NN,GT,G,C,A */
09320 , { 315, 280, 315, 225, 315} /* NN,GT,G,C,C */
09321 , { 305, 240, 305, 215, 305} /* NN,GT,G,C,G */
09322 , { 315, 280, 315, 225, 315} /* NN,GT,G,C,U/T */
09323 }
09324 , { { 325, 260, 325, 300, 325} /* NN,GT,G,G,E */
09325 , { 280, 215, 280, 255, 280} /* NN,GT,G,G,A */
09326 , { 305, 240, 305, 215, 305} /* NN,GT,G,G,C */
09327 , { 300, 235, 235, 275, 235} /* NN,GT,G,G,G */
09328 , { 325, 260, 325, 235, 325} /* NN,GT,G,G,U/T */
09329 }
09330 , { { 325, 290, 325, 300, 325} /* NN,GT,G,U/T,E */
09331 , { 315, 250, 315, 225, 315} /* NN,GT,G,U/T,A */
09332 , { 315, 280, 315, 225, 315} /* NN,GT,G,U/T,C */
09333 , { 325, 260, 325, 235, 325} /* NN,GT,G,U/T,G */
09334 , { 315, 250, 315, 290, 315} /* NN,GT,G,U/T,U/T */
09335 }
09336 }
09337 , { { { 370, 340, 330, 340, 360} /* NN,GT,U/T,E,E */
09338 , { 360, 330, 320, 330, 350} /* NN,GT,U/T,E,A */
09339 , { 315, 315, 305, 315, 305} /* NN,GT,U/T,E,C */
09340 , { 325, 325, 315, 325, 315} /* NN,GT,U/T,E,G */
09341 , { 325, 325, 315, 325, 315} /* NN,GT,U/T,E,U/T */
09342 }
09343 , { { 370, 340, 330, 340, 360} /* NN,GT,U/T,A,E */
09344 , { 345, 315, 305, 315, 335} /* NN,GT,U/T,A,A */
09345 , { 315, 315, 305, 315, 305} /* NN,GT,U/T,A,C */
09346 , { 290, 260, 280, 260, 250} /* NN,GT,U/T,A,G */
09347 , { 325, 325, 315, 325, 315} /* NN,GT,U/T,A,U/T */
09348 }
09349 , { { 315, 315, 305, 315, 305} /* NN,GT,U/T,C,E */
09350 , { 315, 315, 305, 315, 305} /* NN,GT,U/T,C,A */
09351 , { 315, 315, 305, 315, 305} /* NN,GT,U/T,C,C */
09352 , { 305, 305, 295, 305, 295} /* NN,GT,U/T,C,G */
09353 , { 315, 315, 305, 315, 305} /* NN,GT,U/T,C,U/T */
09354 }
09355 , { { 335, 325, 325, 325, 315} /* NN,GT,U/T,G,E */
09356 , { 310, 280, 300, 280, 270} /* NN,GT,U/T,G,A */
09357 , { 305, 305, 295, 305, 295} /* NN,GT,U/T,G,C */
09358 , { 300, 235, 225, 235, 290} /* NN,GT,U/T,G,G */
09359 , { 325, 325, 315, 325, 315} /* NN,GT,U/T,G,U/T */
09360 }
09361 , { { 325, 325, 315, 325, 315} /* NN,GT,U/T,U/T,E */
09362 , { 315, 315, 305, 315, 305} /* NN,GT,U/T,U/T,A */
09363 , { 315, 315, 305, 315, 305} /* NN,GT,U/T,U/T,C */
09364 , { 325, 325, 315, 325, 315} /* NN,GT,U/T,U/T,G */
09365 , { 315, 315, 305, 315, 305} /* NN,GT,U/T,U/T,U/T */
09366 }
09367 }
09368 }
09369 , { { { { 355, 355, 355, 340, 355} /* NN,UG,E,E,E */
09370 , { 355, 340, 355, 335, 355} /* NN,UG,E,E,A */
09371 , { 330, 315, 300, 330, 300} /* NN,UG,E,E,C */
09372 , { 325, 325, 310, 310, 310} /* NN,UG,E,E,G */
09373 , { 355, 355, 310, 340, 310} /* NN,UG,E,E,U/T */
09374 }
09375 , { { 335, 335, 310, 335, 320} /* NN,UG,E,A,E */
09376 , { 310, 310, 265, 310, 295} /* NN,UG,E,A,A */
09377 , { 315, 315, 300, 300, 300} /* NN,UG,E,A,C */
09378 , { 245, 240, 245, 215, 245} /* NN,UG,E,A,G */
09379 , { 325, 325, 310, 310, 310} /* NN,UG,E,A,U/T */
09380 }
09381 , { { 330, 315, 300, 330, 300} /* NN,UG,E,C,E */
09382 , { 315, 315, 300, 300, 300} /* NN,UG,E,C,A */

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09383 , { 330, 315, 300, 330, 300} /* NN,UG,E,C,C */
09384 , { 300, 300, 285, 285, 285} /* NN,UG,E,C,G */
09385 , { 330, 315, 300, 330, 300} /* NN,UG,E,C,U/T */
09386 }
09387 , { { 355, 340, 355, 325, 355} /* NN,UG,E,G,E */
09388 , { 330, 315, 330, 300, 330} /* NN,UG,E,G,A */
09389 , { 310, 310, 295, 295, 295} /* NN,UG,E,G,C */
09390 , { 285, 245, 220, 285, 285} /* NN,UG,E,G,G */
09391 , { 325, 325, 310, 310, 310} /* NN,UG,E,G,U/T */
09392 }
09393 , { { 355, 355, 310, 340, 310} /* NN,UG,E,U/T,E */
09394 , { 325, 325, 310, 310, 310} /* NN,UG,E,U/T,A */
09395 , { 330, 315, 300, 330, 300} /* NN,UG,E,U/T,C */
09396 , { 325, 325, 310, 310, 310} /* NN,UG,E,U/T,G */
09397 , { 345, 345, 300, 300, 300} /* NN,UG,E,U/T,U/T */
09398 }
09399 }
09400 , { { { 355, 330, 315, 315, 325} /* NN,UG,A,E,E */
09401 , { 340, 315, 315, 310, 325} /* NN,UG,A,E,A */
09402 , { 330, 290, 290, 305, 300} /* NN,UG,A,E,C */
09403 , { 325, 300, 300, 285, 310} /* NN,UG,A,E,G */
09404 , { 355, 330, 300, 315, 310} /* NN,UG,A,E,U/T */
09405 }
09406 , { { 335, 310, 300, 310, 310} /* NN,UG,A,A,E */
09407 , { 310, 285, 255, 285, 265} /* NN,UG,A,A,A */
09408 , { 315, 290, 290, 275, 300} /* NN,UG,A,A,C */
09409 , { 240, 215, 205, 190, 215} /* NN,UG,A,A,G */
09410 , { 325, 300, 300, 285, 310} /* NN,UG,A,A,U/T */
09411 }
09412 , { { 330, 290, 290, 305, 300} /* NN,UG,A,C,E */
09413 , { 315, 290, 290, 275, 300} /* NN,UG,A,C,A */
09414 , { 330, 290, 290, 305, 300} /* NN,UG,A,C,C */
09415 , { 300, 275, 275, 260, 285} /* NN,UG,A,C,G */
09416 , { 330, 290, 290, 305, 300} /* NN,UG,A,C,U/T */
09417 }
09418 , { { 340, 315, 315, 300, 325} /* NN,UG,A,G,E */
09419 , { 315, 290, 290, 275, 300} /* NN,UG,A,G,A */
09420 , { 310, 285, 285, 270, 295} /* NN,UG,A,G,C */
09421 , { 285, 210, 210, 260, 220} /* NN,UG,A,G,G */
09422 , { 325, 300, 300, 285, 310} /* NN,UG,A,G,U/T */
09423 }
09424 , { { 355, 330, 300, 315, 310} /* NN,UG,A,U/T,E */
09425 , { 325, 300, 300, 285, 310} /* NN,UG,A,U/T,A */
09426 , { 330, 290, 290, 305, 300} /* NN,UG,A,U/T,C */
09427 , { 325, 300, 300, 285, 310} /* NN,UG,A,U/T,G */
09428 , { 345, 320, 290, 275, 300} /* NN,UG,A,U/T,U/T */
09429 }
09430 }
09431 , { { { 345, 315, 345, 310, 345} /* NN,UG,C,E,E */
09432 , { 345, 315, 345, 310, 345} /* NN,UG,C,E,A */
09433 , { 290, 290, 285, 290, 290} /* NN,UG,C,E,C */
09434 , { 300, 300, 300, 295, 300} /* NN,UG,C,E,G */
09435 , { 300, 300, 300, 295, 300} /* NN,UG,C,E,U/T */
09436 }
09437 , { { 300, 300, 300, 295, 300} /* NN,UG,C,A,E */
09438 , { 255, 255, 255, 250, 255} /* NN,UG,C,A,A */
09439 , { 290, 290, 290, 285, 290} /* NN,UG,C,A,C */
09440 , { 235, 205, 235, 200, 235} /* NN,UG,C,A,G */
09441 , { 300, 300, 300, 295, 300} /* NN,UG,C,A,U/T */
09442 }
09443 , { { 290, 290, 290, 285, 290} /* NN,UG,C,C,E */
09444 , { 290, 290, 290, 285, 290} /* NN,UG,C,C,A */
09445 , { 290, 290, 290, 285, 290} /* NN,UG,C,C,C */
09446 , { 275, 275, 275, 270, 275} /* NN,UG,C,C,G */
09447 , { 290, 290, 290, 285, 290} /* NN,UG,C,C,U/T */
09448 }
09449 , { { 345, 315, 345, 310, 345} /* NN,UG,C,G,E */
09450 , { 320, 290, 320, 285, 320} /* NN,UG,C,G,A */
09451 , { 285, 285, 285, 280, 285} /* NN,UG,C,G,C */
09452 , { 210, 210, 210, 205, 210} /* NN,UG,C,G,G */
09453 , { 300, 300, 300, 295, 300} /* NN,UG,C,G,U/T */
09454 }
09455 , { { 300, 300, 300, 295, 300} /* NN,UG,C,U/T,E */
09456 , { 300, 300, 300, 295, 300} /* NN,UG,C,U/T,A */
09457 , { 290, 290, 290, 285, 290} /* NN,UG,C,U/T,C */
09458 , { 300, 300, 300, 295, 300} /* NN,UG,C,U/T,G */
09459 , { 290, 290, 290, 285, 290} /* NN,UG,C,U/T,U/T */
09460 }
09461 }
09462 , { { { 325, 275, 325, 300, 325} /* NN,UG,G,E,E */
09463 , { 325, 260, 325, 300, 325} /* NN,UG,G,E,A */
09464 , { 300, 265, 300, 210, 300} /* NN,UG,G,E,C */
09465 , { 310, 245, 310, 285, 310} /* NN,UG,G,E,G */
09466 , { 310, 275, 310, 285, 310} /* NN,UG,G,E,U/T */
09467 }
09468 , { { 310, 245, 310, 220, 310} /* NN,UG,G,A,E */
09469 , { 265, 200, 265, 175, 265} /* NN,UG,G,A,A */

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09470 , { 300, 235, 300, 210, 300} /* NN,UG,G,A,C */
09471 , { 215, 125, 215, 190, 215} /* NN,UG,G,A,G */
09472 , { 310, 245, 310, 220, 310} /* NN,UG,G,A,U/T */
09473 }
09474 , { { 300, 265, 300, 210, 300} /* NN,UG,G,C,E */
09475 , { 300, 235, 300, 210, 300} /* NN,UG,G,C,A */
09476 , { 300, 265, 300, 210, 300} /* NN,UG,G,C,C */
09477 , { 285, 220, 285, 195, 285} /* NN,UG,G,C,G */
09478 , { 300, 265, 300, 210, 300} /* NN,UG,G,C,U/T */
09479 }
09480 , { { 325, 260, 325, 300, 325} /* NN,UG,G,G,E */
09481 , { 300, 235, 300, 275, 300} /* NN,UG,G,G,A */
09482 , { 295, 230, 295, 205, 295} /* NN,UG,G,G,C */
09483 , { 285, 220, 220, 260, 220} /* NN,UG,G,G,G */
09484 , { 310, 245, 310, 220, 310} /* NN,UG,G,G,U/T */
09485 }
09486 , { { 310, 275, 310, 285, 310} /* NN,UG,G,U/T,E */
09487 , { 310, 245, 310, 220, 310} /* NN,UG,G,U/T,A */
09488 , { 300, 265, 300, 210, 300} /* NN,UG,G,U/T,C */
09489 , { 310, 245, 310, 220, 310} /* NN,UG,G,U/T,G */
09490 , { 300, 235, 300, 275, 300} /* NN,UG,G,U/T,U/T */
09491 }
09492 }
09493 , { { { 355, 325, 345, 325, 315} /* NN,UG,U/T,E,E */
09494 , { 355, 325, 345, 325, 315} /* NN,UG,U/T,E,A */
09495 , { 300, 300, 290, 300, 290} /* NN,UG,U/T,E,C */
09496 , { 310, 310, 300, 310, 300} /* NN,UG,U/T,E,G */
09497 , { 310, 310, 300, 310, 300} /* NN,UG,U/T,E,U/T */
09498 }
09499 , { { 320, 310, 300, 310, 310} /* NN,UG,U/T,A,E */
09500 , { 295, 265, 255, 265, 285} /* NN,UG,U/T,A,A */
09501 , { 300, 300, 290, 300, 290} /* NN,UG,U/T,A,C */
09502 , { 245, 215, 235, 205, 205} /* NN,UG,U/T,A,G */
09503 , { 310, 310, 300, 310, 300} /* NN,UG,U/T,A,U/T */
09504 }
09505 , { { 300, 300, 290, 300, 290} /* NN,UG,U/T,C,E */
09506 , { 300, 300, 290, 300, 290} /* NN,UG,U/T,C,A */
09507 , { 300, 300, 290, 300, 290} /* NN,UG,U/T,C,C */
09508 , { 285, 285, 275, 285, 275} /* NN,UG,U/T,C,G */
09509 , { 300, 300, 290, 300, 290} /* NN,UG,U/T,C,U/T */
09510 }
09511 , { { 355, 325, 345, 325, 315} /* NN,UG,U/T,G,E */
09512 , { 330, 300, 320, 300, 290} /* NN,UG,U/T,G,A */
09513 , { 295, 295, 285, 295, 285} /* NN,UG,U/T,G,C */
09514 , { 285, 220, 210, 220, 275} /* NN,UG,U/T,G,G */
09515 , { 310, 310, 300, 310, 300} /* NN,UG,U/T,G,U/T */
09516 }
09517 , { { 310, 310, 300, 310, 300} /* NN,UG,U/T,U/T,E */
09518 , { 310, 310, 300, 310, 300} /* NN,UG,U/T,U/T,A */
09519 , { 300, 300, 290, 300, 290} /* NN,UG,U/T,U/T,C */
09520 , { 310, 310, 300, 310, 300} /* NN,UG,U/T,U/T,G */
09521 , { 300, 300, 290, 300, 290} /* NN,UG,U/T,U/T,U/T */
09522 }
09523 }
09524 }
09525 , { { { { 340, 325, 310, 330, 340} /* NN,AT,E,E,E */
09526 , { 340, 325, 310, 310, 340} /* NN,AT,E,E,A */
09527 , { 315, 300, 285, 315, 285} /* NN,AT,E,E,C */
09528 , { 320, 320, 300, 300, 300} /* NN,AT,E,E,G */
09529 , { 330, 315, 300, 330, 300} /* NN,AT,E,E,U/T */
09530 }
09531 , { { 340, 325, 310, 310, 340} /* NN,AT,E,A,E */
09532 , { 305, 290, 275, 275, 305} /* NN,AT,E,A,A */
09533 , { 290, 290, 270, 270, 270} /* NN,AT,E,A,C */
09534 , { 245, 235, 245, 215, 245} /* NN,AT,E,A,G */
09535 , { 315, 315, 295, 295, 295} /* NN,AT,E,A,U/T */
09536 }
09537 , { { 320, 310, 290, 320, 290} /* NN,AT,E,C,E */
09538 , { 295, 295, 275, 275, 275} /* NN,AT,E,C,A */
09539 , { 315, 300, 285, 315, 285} /* NN,AT,E,C,C */
09540 , { 310, 310, 290, 290, 290} /* NN,AT,E,C,G */
09541 , { 310, 295, 280, 310, 280} /* NN,AT,E,C,U/T */
09542 }
09543 , { { 315, 315, 310, 295, 310} /* NN,AT,E,G,E */
09544 , { 280, 270, 280, 250, 280} /* NN,AT,E,G,A */
09545 , { 295, 295, 275, 275, 275} /* NN,AT,E,G,C */
09546 , { 255, 215, 190, 255, 255} /* NN,AT,E,G,G */
09547 , { 315, 315, 295, 295, 295} /* NN,AT,E,G,U/T */
09548 }
09549 , { { 330, 320, 300, 330, 300} /* NN,AT,E,U/T,E */
09550 , { 320, 320, 300, 300, 300} /* NN,AT,E,U/T,A */
09551 , { 310, 295, 280, 310, 280} /* NN,AT,E,U/T,C */
09552 , { 320, 320, 300, 300, 300} /* NN,AT,E,U/T,G */
09553 , { 270, 270, 225, 225, 225} /* NN,AT,E,U/T,U/T */
09554 }
09555 }
09556 , { { { 330, 300, 300, 305, 310} /* NN,AT,A,E,E */
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09557 , { 325, 300, 300, 285, 310} /* NN,AT,A,E,A */
09558 , { 315, 275, 275, 290, 285} /* NN,AT,A,E,C */
09559 , { 320, 295, 290, 275, 300} /* NN,AT,A,E,G */
09560 , { 330, 290, 290, 305, 300} /* NN,AT,A,E,U/T */
09561 }
09562 , { { 325, 300, 300, 285, 310} /* NN,AT,A,A,E */
09563 , { 290, 265, 265, 250, 275} /* NN,AT,A,A,A */
09564 , { 290, 265, 260, 245, 270} /* NN,AT,A,A,C */
09565 , { 235, 210, 205, 190, 215} /* NN,AT,A,A,G */
09566 , { 315, 290, 285, 270, 295} /* NN,AT,A,A,U/T */
09567 }
09568 , { { 320, 285, 280, 295, 290} /* NN,AT,A,C,E */
09569 , { 295, 270, 265, 250, 275} /* NN,AT,A,C,A */
09570 , { 315, 275, 275, 290, 285} /* NN,AT,A,C,C */
09571 , { 310, 285, 280, 265, 290} /* NN,AT,A,C,G */
09572 , { 310, 270, 270, 285, 280} /* NN,AT,A,C,U/T */
09573 }
09574 , { { 315, 290, 285, 270, 295} /* NN,AT,A,G,E */
09575 , { 270, 245, 240, 225, 250} /* NN,AT,A,G,A */
09576 , { 295, 270, 265, 250, 275} /* NN,AT,A,G,C */
09577 , { 255, 185, 180, 230, 190} /* NN,AT,A,G,G */
09578 , { 315, 290, 285, 270, 295} /* NN,AT,A,G,U/T */
09579 }
09580 , { { 330, 295, 290, 305, 300} /* NN,AT,A,U/T,E */
09581 , { 320, 295, 290, 275, 300} /* NN,AT,A,U/T,A */
09582 , { 310, 270, 270, 285, 280} /* NN,AT,A,U/T,C */
09583 , { 320, 295, 290, 275, 300} /* NN,AT,A,U/T,G */
09584 , { 270, 245, 215, 200, 225} /* NN,AT,A,U/T,U/T */
09585 }
09586 }
09587 , { { { 300, 300, 300, 295, 300} /* NN,AT,C,E,E */
09588 , { 300, 300, 300, 295, 300} /* NN,AT,C,E,A */
09589 , { 275, 275, 275, 270, 275} /* NN,AT,C,E,C */
09590 , { 290, 290, 290, 285, 290} /* NN,AT,C,E,G */
09591 , { 290, 290, 290, 285, 290} /* NN,AT,C,E,U/T */
09592 }
09593 , { { 300, 300, 300, 295, 300} /* NN,AT,C,A,E */
09594 , { 265, 265, 265, 260, 265} /* NN,AT,C,A,A */
09595 , { 260, 260, 260, 255, 260} /* NN,AT,C,A,C */
09596 , { 235, 205, 235, 200, 235} /* NN,AT,C,A,G */
09597 , { 285, 285, 285, 280, 285} /* NN,AT,C,A,U/T */
09598 }
09599 , { { 280, 280, 280, 275, 280} /* NN,AT,C,C,E */
09600 , { 265, 265, 265, 260, 265} /* NN,AT,C,C,A */
09601 , { 275, 275, 275, 270, 275} /* NN,AT,C,C,C */
09602 , { 280, 280, 280, 275, 280} /* NN,AT,C,C,G */
09603 , { 270, 270, 270, 265, 270} /* NN,AT,C,C,U/T */
09604 }
09605 , { { 300, 285, 300, 280, 300} /* NN,AT,C,G,E */
09606 , { 270, 240, 270, 235, 270} /* NN,AT,C,G,A */
09607 , { 265, 265, 265, 260, 265} /* NN,AT,C,G,C */
09608 , { 180, 180, 180, 175, 180} /* NN,AT,C,G,G */
09609 , { 285, 285, 285, 280, 285} /* NN,AT,C,G,U/T */
09610 }
09611 , { { 290, 290, 290, 285, 290} /* NN,AT,C,U/T,E */
09612 , { 290, 290, 290, 285, 290} /* NN,AT,C,U/T,A */
09613 , { 270, 270, 270, 265, 270} /* NN,AT,C,U/T,C */
09614 , { 290, 290, 290, 285, 290} /* NN,AT,C,U/T,G */
09615 , { 215, 215, 215, 210, 215} /* NN,AT,C,U/T,U/T */
09616 }
09617 }
09618 , { { { 310, 265, 310, 260, 310} /* NN,AT,G,E,E */
09619 , { 310, 245, 310, 255, 310} /* NN,AT,G,E,A */
09620 , { 285, 250, 285, 195, 285} /* NN,AT,G,E,C */
09621 , { 300, 235, 300, 260, 300} /* NN,AT,G,E,G */
09622 , { 300, 265, 300, 230, 300} /* NN,AT,G,E,U/T */
09623 }
09624 , { { 310, 245, 310, 220, 310} /* NN,AT,G,A,E */
09625 , { 275, 210, 275, 185, 275} /* NN,AT,G,A,A */
09626 , { 270, 205, 270, 180, 270} /* NN,AT,G,A,C */
09627 , { 215, 150, 215, 190, 215} /* NN,AT,G,A,G */
09628 , { 295, 230, 295, 205, 295} /* NN,AT,G,A,U/T */
09629 }
09630 , { { 290, 255, 290, 200, 290} /* NN,AT,G,C,E */
09631 , { 275, 210, 275, 185, 275} /* NN,AT,G,C,A */
09632 , { 285, 250, 285, 195, 285} /* NN,AT,G,C,C */
09633 , { 290, 225, 290, 200, 290} /* NN,AT,G,C,G */
09634 , { 280, 245, 280, 190, 280} /* NN,AT,G,C,U/T */
09635 }
09636 , { { 295, 230, 295, 260, 295} /* NN,AT,G,G,E */
09637 , { 250, 185, 250, 225, 250} /* NN,AT,G,G,A */
09638 , { 275, 210, 275, 185, 275} /* NN,AT,G,G,C */
09639 , { 255, 190, 190, 230, 190} /* NN,AT,G,G,G */
09640 , { 295, 230, 295, 205, 295} /* NN,AT,G,G,U/T */
09641 }
09642 , { { 300, 265, 300, 230, 300} /* NN,AT,G,U/T,E */
09643 , { 300, 235, 300, 210, 300} /* NN,AT,G,U/T,A */

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09644      , {      280,      245,      280,      190,      280} /* NN,AT,G,U/T,C */
09645      , {      300,      235,      300,      210,      300} /* NN,AT,G,U/T,G */
09646      , {      225,      160,      225,      200,      225} /* NN,AT,G,U/T,U/T */
09647      }
09648      }
09649      , {{{      340,      310,      300,      310,      330} /* NN,AT,U/T,E,E */
09650      , {      340,      310,      300,      310,      330} /* NN,AT,U/T,E,A */
09651      , {      285,      285,      275,      285,      275} /* NN,AT,U/T,E,C */
09652      , {      300,      300,      290,      300,      290} /* NN,AT,U/T,E,G */
09653      , {      300,      300,      290,      300,      290} /* NN,AT,U/T,E,U/T */
09654      }
09655      , {{{      340,      310,      300,      310,      330} /* NN,AT,U/T,A,E */
09656      , {      305,      275,      265,      275,      295} /* NN,AT,U/T,A,A */
09657      , {      270,      270,      260,      270,      260} /* NN,AT,U/T,A,C */
09658      , {      245,      215,      235,      215,      205} /* NN,AT,U/T,A,G */
09659      , {      295,      295,      285,      295,      285} /* NN,AT,U/T,A,U/T */
09660      }
09661      , {{{      290,      290,      280,      290,      280} /* NN,AT,U/T,C,E */
09662      , {      275,      275,      265,      275,      265} /* NN,AT,U/T,C,A */
09663      , {      285,      285,      275,      285,      275} /* NN,AT,U/T,C,C */
09664      , {      290,      290,      280,      290,      280} /* NN,AT,U/T,C,G */
09665      , {      280,      280,      270,      280,      270} /* NN,AT,U/T,C,U/T */
09666      }
09667      , {{{      310,      295,      300,      295,      285} /* NN,AT,U/T,G,E */
09668      , {      280,      250,      270,      250,      240} /* NN,AT,U/T,G,A */
09669      , {      275,      275,      265,      275,      265} /* NN,AT,U/T,G,C */
09670      , {      255,      190,      180,      190,      245} /* NN,AT,U/T,G,G */
09671      , {      295,      295,      285,      295,      285} /* NN,AT,U/T,G,U/T */
09672      }
09673      , {{{      300,      300,      290,      300,      290} /* NN,AT,U/T,U/T,E */
09674      , {      300,      300,      290,      300,      290} /* NN,AT,U/T,U/T,A */
09675      , {      280,      280,      270,      280,      270} /* NN,AT,U/T,U/T,C */
09676      , {      300,      300,      290,      300,      290} /* NN,AT,U/T,U/T,G */
09677      , {      225,      225,      215,      225,      215} /* NN,AT,U/T,U/T,U/T */
09678      }
09679      }
09680      }
09681      , {{{      340,      325,      310,      340,      340} /* NN,UA,E,E,E */
09682      , {      340,      325,      310,      310,      340} /* NN,UA,E,E,A */
09683      , {      325,      310,      295,      325,      295} /* NN,UA,E,E,C */
09684      , {      325,      325,      310,      310,      310} /* NN,UA,E,E,G */
09685      , {      340,      325,      310,      340,      310} /* NN,UA,E,E,U/T */
09686      }
09687      , {{{      340,      325,      310,      310,      340} /* NN,UA,E,A,E */
09688      , {      310,      295,      280,      280,      310} /* NN,UA,E,A,A */
09689      , {      280,      280,      260,      260,      260} /* NN,UA,E,A,C */
09690      , {      255,      245,      255,      225,      255} /* NN,UA,E,A,G */
09691      , {      305,      305,      285,      285,      285} /* NN,UA,E,A,U/T */
09692      }
09693      , {{{      340,      325,      310,      340,      310} /* NN,UA,E,C,E */
09694      , {      300,      300,      285,      285,      285} /* NN,UA,E,C,A */
09695      , {      325,      310,      295,      325,      295} /* NN,UA,E,C,C */
09696      , {      325,      325,      310,      310,      310} /* NN,UA,E,C,G */
09697      , {      320,      305,      290,      320,      290} /* NN,UA,E,C,U/T */
09698      }
09699      , {{{      300,      300,      285,      290,      290} /* NN,UA,E,G,E */
09700      , {      260,      250,      260,      230,      260} /* NN,UA,E,G,A */
09701      , {      280,      280,      260,      260,      260} /* NN,UA,E,G,C */
09702      , {      265,      225,      200,      265,      265} /* NN,UA,E,G,G */
09703      , {      300,      300,      280,      280,      280} /* NN,UA,E,G,U/T */
09704      }
09705      , {{{      325,      325,      310,      325,      310} /* NN,UA,E,U/T,E */
09706      , {      325,      325,      310,      310,      310} /* NN,UA,E,U/T,A */
09707      , {      305,      290,      275,      305,      275} /* NN,UA,E,U/T,C */
09708      , {      325,      325,      310,      310,      310} /* NN,UA,E,U/T,G */
09709      , {      285,      285,      235,      235,      235} /* NN,UA,E,U/T,U/T */
09710      }
09711      }
09712      , {{{      340,      300,      300,      315,      310} /* NN,UA,A,E,E */
09713      , {      325,      300,      300,      285,      310} /* NN,UA,A,E,A */
09714      , {      325,      285,      285,      300,      295} /* NN,UA,A,E,C */
09715      , {      325,      300,      300,      285,      310} /* NN,UA,A,E,G */
09716      , {      340,      300,      300,      315,      310} /* NN,UA,A,E,U/T */
09717      }
09718      , {{{      325,      300,      300,      285,      310} /* NN,UA,A,A,E */
09719      , {      295,      270,      270,      255,      280} /* NN,UA,A,A,A */
09720      , {      280,      255,      250,      235,      260} /* NN,UA,A,A,C */
09721      , {      245,      220,      215,      200,      225} /* NN,UA,A,A,G */
09722      , {      305,      280,      275,      260,      285} /* NN,UA,A,A,U/T */
09723      }
09724      , {{{      340,      300,      300,      315,      310} /* NN,UA,A,C,E */
09725      , {      300,      275,      275,      260,      285} /* NN,UA,A,C,A */
09726      , {      325,      285,      285,      300,      295} /* NN,UA,A,C,C */
09727      , {      325,      300,      300,      285,      310} /* NN,UA,A,C,G */
09728      , {      320,      280,      280,      295,      290} /* NN,UA,A,C,U/T */
09729      }
09730      , {{{      300,      275,      270,      265,      280} /* NN,UA,A,G,E */

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09731      , {      250,      225,      220,      205,      230} /* NN,UA,A,G,A */
09732      , {      280,      255,      250,      235,      260} /* NN,UA,A,G,C */
09733      , {      265,      195,      190,      240,      200} /* NN,UA,A,G,G */
09734      , {      300,      275,      270,      255,      280} /* NN,UA,A,G,U/T */
09735      }
09736      , {{      325,      300,      300,      300,      310} /* NN,UA,A,U/T,E */
09737      , {      325,      300,      300,      285,      310} /* NN,UA,A,U/T,A */
09738      , {      305,      265,      265,      280,      275} /* NN,UA,A,U/T,C */
09739      , {      325,      300,      300,      285,      310} /* NN,UA,A,U/T,G */
09740      , {      285,      260,      225,      210,      235} /* NN,UA,A,U/T,U/T */
09741      }
09742      }
09743      , {{{      300,      300,      300,      295,      300} /* NN,UA,C,E,E */
09744      , {      300,      300,      300,      295,      300} /* NN,UA,C,E,A */
09745      , {      285,      285,      285,      280,      285} /* NN,UA,C,E,C */
09746      , {      300,      300,      300,      295,      300} /* NN,UA,C,E,G */
09747      , {      300,      300,      300,      295,      300} /* NN,UA,C,E,U/T */
09748      }
09749      , {{      300,      300,      300,      295,      300} /* NN,UA,C,A,E */
09750      , {      270,      270,      270,      265,      270} /* NN,UA,C,A,A */
09751      , {      250,      250,      250,      245,      250} /* NN,UA,C,A,C */
09752      , {      245,      215,      245,      210,      245} /* NN,UA,C,A,G */
09753      , {      275,      275,      275,      270,      275} /* NN,UA,C,A,U/T */
09754      }
09755      , {{      300,      300,      300,      295,      300} /* NN,UA,C,C,E */
09756      , {      275,      275,      275,      270,      275} /* NN,UA,C,C,A */
09757      , {      285,      285,      285,      280,      285} /* NN,UA,C,C,C */
09758      , {      300,      300,      300,      295,      300} /* NN,UA,C,C,G */
09759      , {      280,      280,      280,      275,      280} /* NN,UA,C,C,U/T */
09760      }
09761      , {{      275,      270,      275,      265,      275} /* NN,UA,C,G,E */
09762      , {      250,      220,      250,      215,      250} /* NN,UA,C,G,A */
09763      , {      250,      250,      250,      245,      250} /* NN,UA,C,G,C */
09764      , {      190,      190,      190,      185,      190} /* NN,UA,C,G,G */
09765      , {      270,      270,      270,      265,      270} /* NN,UA,C,G,U/T */
09766      }
09767      , {{      300,      300,      300,      295,      300} /* NN,UA,C,U/T,E */
09768      , {      300,      300,      300,      295,      300} /* NN,UA,C,U/T,A */
09769      , {      265,      265,      265,      260,      265} /* NN,UA,C,U/T,C */
09770      , {      300,      300,      300,      295,      300} /* NN,UA,C,U/T,G */
09771      , {      225,      225,      225,      220,      225} /* NN,UA,C,U/T,U/T */
09772      }
09773      }
09774      , {{{      310,      275,      310,      270,      310} /* NN,UA,G,E,E */
09775      , {      310,      245,      310,      235,      310} /* NN,UA,G,E,A */
09776      , {      295,      260,      295,      205,      295} /* NN,UA,G,E,C */
09777      , {      310,      245,      310,      270,      310} /* NN,UA,G,E,G */
09778      , {      310,      275,      310,      240,      310} /* NN,UA,G,E,U/T */
09779      }
09780      , {{      310,      245,      310,      230,      310} /* NN,UA,G,A,E */
09781      , {      280,      215,      280,      190,      280} /* NN,UA,G,A,A */
09782      , {      260,      195,      260,      170,      260} /* NN,UA,G,A,C */
09783      , {      225,      160,      225,      200,      225} /* NN,UA,G,A,G */
09784      , {      285,      220,      285,      195,      285} /* NN,UA,G,A,U/T */
09785      }
09786      , {{      310,      275,      310,      220,      310} /* NN,UA,G,C,E */
09787      , {      285,      220,      285,      195,      285} /* NN,UA,G,C,A */
09788      , {      295,      260,      295,      205,      295} /* NN,UA,G,C,C */
09789      , {      310,      245,      310,      220,      310} /* NN,UA,G,C,G */
09790      , {      290,      255,      290,      200,      290} /* NN,UA,G,C,U/T */
09791      }
09792      , {{      290,      225,      280,      265,      280} /* NN,UA,G,G,E */
09793      , {      230,      165,      230,      205,      230} /* NN,UA,G,G,A */
09794      , {      260,      195,      260,      170,      260} /* NN,UA,G,G,C */
09795      , {      265,      200,      200,      240,      200} /* NN,UA,G,G,G */
09796      , {      280,      215,      280,      190,      280} /* NN,UA,G,G,U/T */
09797      }
09798      , {{      310,      260,      310,      240,      310} /* NN,UA,G,U/T,E */
09799      , {      310,      245,      310,      220,      310} /* NN,UA,G,U/T,A */
09800      , {      275,      240,      275,      185,      275} /* NN,UA,G,U/T,C */
09801      , {      310,      245,      310,      220,      310} /* NN,UA,G,U/T,G */
09802      , {      235,      170,      235,      210,      235} /* NN,UA,G,U/T,U/T */
09803      }
09804      }
09805      , {{{      340,      310,      300,      310,      330} /* NN,UA,U/T,E,E */
09806      , {      340,      310,      300,      310,      330} /* NN,UA,U/T,E,A */
09807      , {      295,      295,      285,      295,      285} /* NN,UA,U/T,E,C */
09808      , {      310,      310,      300,      310,      300} /* NN,UA,U/T,E,G */
09809      , {      310,      310,      300,      310,      300} /* NN,UA,U/T,E,U/T */
09810      }
09811      , {{      340,      310,      300,      310,      330} /* NN,UA,U/T,A,E */
09812      , {      310,      280,      270,      280,      300} /* NN,UA,U/T,A,A */
09813      , {      260,      260,      250,      260,      250} /* NN,UA,U/T,A,C */
09814      , {      255,      225,      245,      225,      215} /* NN,UA,U/T,A,G */
09815      , {      285,      285,      275,      285,      275} /* NN,UA,U/T,A,U/T */
09816      }
09817      , {{      310,      310,      300,      310,      300} /* NN,UA,U/T,C,E */

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09818      , {      285,      285,      275,      285,      275} /* NN,UA,U/T,C,A */
09819      , {      295,      295,      285,      295,      285} /* NN,UA,U/T,C,C */
09820      , {      310,      310,      300,      310,      300} /* NN,UA,U/T,C,G */
09821      , {      290,      290,      280,      290,      280} /* NN,UA,U/T,C,U/T */
09822      }
09823      , { {      290,      280,      275,      280,      280} /* NN,UA,U/T,G,E */
09824      , {      260,      230,      250,      230,      220} /* NN,UA,U/T,G,A */
09825      , {      260,      260,      250,      260,      250} /* NN,UA,U/T,G,C */
09826      , {      265,      200,      190,      200,      255} /* NN,UA,U/T,G,G */
09827      , {      280,      280,      270,      280,      270} /* NN,UA,U/T,G,U/T */
09828      }
09829      , { {      310,      310,      300,      310,      300} /* NN,UA,U/T,U/T,E */
09830      , {      310,      310,      300,      310,      300} /* NN,UA,U/T,U/T,A */
09831      , {      275,      275,      265,      275,      265} /* NN,UA,U/T,U/T,C */
09832      , {      310,      310,      300,      310,      300} /* NN,UA,U/T,U/T,G */
09833      , {      235,      235,      225,      235,      225} /* NN,UA,U/T,U/T,U/T */
09834      }
09835      }
09836      }
09837      , { { {      370,      370,      355,      355,      370} /* NN,NN,E,E,E */
09838      , {      370,      360,      355,      340,      370} /* NN,NN,E,E,A */
09839      , {      345,      330,      315,      345,      315} /* NN,NN,E,E,C */
09840      , {      340,      340,      325,      325,      325} /* NN,NN,E,E,G */
09841      , {      370,      370,      325,      355,      325} /* NN,NN,E,E,U/T */
09842      }
09843      , { {      370,      360,      340,      340,      370} /* NN,NN,E,A,E */
09844      , {      345,      335,      315,      315,      345} /* NN,NN,E,A,A */
09845      , {      330,      330,      315,      315,      315} /* NN,NN,E,A,C */
09846      , {      290,      275,      290,      260,      290} /* NN,NN,E,A,G */
09847      , {      340,      340,      325,      325,      325} /* NN,NN,E,A,U/T */
09848      }
09849      , { {      355,      340,      325,      355,      325} /* NN,NN,E,C,E */
09850      , {      330,      330,      315,      315,      315} /* NN,NN,E,C,A */
09851      , {      345,      330,      315,      345,      315} /* NN,NN,E,C,C */
09852      , {      340,      340,      325,      325,      325} /* NN,NN,E,C,G */
09853      , {      345,      330,      315,      345,      315} /* NN,NN,E,C,U/T */
09854      }
09855      , { {      355,      340,      355,      325,      355} /* NN,NN,E,G,E */
09856      , {      330,      315,      330,      300,      330} /* NN,NN,E,G,A */
09857      , {      325,      325,      310,      310,      310} /* NN,NN,E,G,C */
09858      , {      300,      260,      235,      300,      300} /* NN,NN,E,G,G */
09859      , {      340,      340,      325,      325,      325} /* NN,NN,E,G,U/T */
09860      }
09861      , { {      370,      370,      325,      355,      325} /* NN,NN,E,U/T,E */
09862      , {      340,      340,      325,      325,      325} /* NN,NN,E,U/T,A */
09863      , {      345,      330,      315,      345,      315} /* NN,NN,E,U/T,C */
09864      , {      340,      340,      325,      325,      325} /* NN,NN,E,U/T,G */
09865      , {      360,      360,      315,      315,      315} /* NN,NN,E,U/T,U/T */
09866      }
09867      }
09868      , { { {      370,      345,      330,      330,      340} /* NN,NN,A,E,E */
09869      , {      360,      335,      330,      315,      340} /* NN,NN,A,E,A */
09870      , {      345,      305,      305,      320,      315} /* NN,NN,A,E,C */
09871      , {      340,      315,      315,      300,      325} /* NN,NN,A,E,G */
09872      , {      370,      345,      315,      330,      325} /* NN,NN,A,E,U/T */
09873      }
09874      , { {      360,      335,      330,      315,      340} /* NN,NN,A,A,E */
09875      , {      335,      310,      305,      290,      315} /* NN,NN,A,A,A */
09876      , {      330,      305,      305,      290,      315} /* NN,NN,A,A,C */
09877      , {      275,      250,      250,      235,      260} /* NN,NN,A,A,G */
09878      , {      340,      315,      315,      300,      325} /* NN,NN,A,A,U/T */
09879      }
09880      , { {      355,      315,      315,      330,      325} /* NN,NN,A,C,E */
09881      , {      330,      305,      305,      290,      315} /* NN,NN,A,C,A */
09882      , {      345,      305,      305,      320,      315} /* NN,NN,A,C,C */
09883      , {      340,      315,      315,      300,      325} /* NN,NN,A,C,G */
09884      , {      345,      305,      305,      320,      315} /* NN,NN,A,C,U/T */
09885      }
09886      , { {      340,      315,      315,      300,      325} /* NN,NN,A,G,E */
09887      , {      315,      290,      290,      275,      300} /* NN,NN,A,G,A */
09888      , {      325,      300,      300,      285,      310} /* NN,NN,A,G,C */
09889      , {      300,      225,      225,      275,      235} /* NN,NN,A,G,G */
09890      , {      340,      315,      315,      300,      325} /* NN,NN,A,G,U/T */
09891      }
09892      , { {      370,      345,      315,      330,      325} /* NN,NN,A,U/T,E */
09893      , {      340,      315,      315,      300,      325} /* NN,NN,A,U/T,A */
09894      , {      345,      305,      305,      320,      315} /* NN,NN,A,U/T,C */
09895      , {      340,      315,      315,      300,      325} /* NN,NN,A,U/T,G */
09896      , {      360,      335,      305,      290,      315} /* NN,NN,A,U/T,U/T */
09897      }
09898      }
09899      , { { {      345,      330,      345,      325,      345} /* NN,NN,C,E,E */
09900      , {      345,      330,      345,      325,      345} /* NN,NN,C,E,A */
09901      , {      305,      305,      305,      300,      305} /* NN,NN,C,E,C */
09902      , {      315,      315,      315,      310,      315} /* NN,NN,C,E,G */
09903      , {      315,      315,      315,      310,      315} /* NN,NN,C,E,U/T */
09904      }

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09905 ,{{ 330, 330, 330, 325, 330} /* NN,NN,C,A,E */
09906 ,{ 305, 305, 305, 300, 305} /* NN,NN,C,A,A */
09907 ,{ 305, 305, 305, 300, 305} /* NN,NN,C,A,C */
09908 ,{ 280, 250, 280, 245, 280} /* NN,NN,C,A,G */
09909 ,{ 315, 315, 315, 310, 315} /* NN,NN,C,A,U/T */
09910 }
09911 ,{{ 315, 315, 315, 310, 315} /* NN,NN,C,C,E */
09912 ,{ 305, 305, 305, 300, 305} /* NN,NN,C,C,A */
09913 ,{ 305, 305, 305, 300, 305} /* NN,NN,C,C,C */
09914 ,{ 315, 315, 315, 310, 315} /* NN,NN,C,C,G */
09915 ,{ 305, 305, 305, 300, 305} /* NN,NN,C,C,U/T */
09916 }
09917 ,{{ 345, 315, 345, 310, 345} /* NN,NN,C,G,E */
09918 ,{ 320, 290, 320, 285, 320} /* NN,NN,C,G,A */
09919 ,{ 300, 300, 300, 295, 300} /* NN,NN,C,G,C */
09920 ,{ 225, 225, 225, 220, 225} /* NN,NN,C,G,G */
09921 ,{ 315, 315, 315, 310, 315} /* NN,NN,C,G,U/T */
09922 }
09923 ,{{ 315, 315, 315, 310, 315} /* NN,NN,C,U/T,E */
09924 ,{ 315, 315, 315, 310, 315} /* NN,NN,C,U/T,A */
09925 ,{ 305, 305, 305, 300, 305} /* NN,NN,C,U/T,C */
09926 ,{ 315, 315, 315, 310, 315} /* NN,NN,C,U/T,G */
09927 ,{ 305, 305, 305, 300, 305} /* NN,NN,C,U/T,U/T */
09928 }
09929 }
09930 ,{{{ 340, 290, 340, 300, 340} /* NN,NN,G,E,E */
09931 ,{ 340, 275, 340, 300, 340} /* NN,NN,G,E,A */
09932 ,{ 315, 280, 315, 225, 315} /* NN,NN,G,E,C */
09933 ,{ 325, 260, 325, 300, 325} /* NN,NN,G,E,G */
09934 ,{ 325, 290, 325, 300, 325} /* NN,NN,G,E,U/T */
09935 }
09936 ,{{ 340, 275, 340, 260, 340} /* NN,NN,G,A,E */
09937 ,{ 315, 250, 315, 225, 315} /* NN,NN,G,A,A */
09938 ,{ 315, 250, 315, 225, 315} /* NN,NN,G,A,C */
09939 ,{ 260, 195, 260, 235, 260} /* NN,NN,G,A,G */
09940 ,{ 325, 260, 325, 235, 325} /* NN,NN,G,A,U/T */
09941 }
09942 ,{{ 325, 290, 325, 235, 325} /* NN,NN,G,C,E */
09943 ,{ 315, 250, 315, 225, 315} /* NN,NN,G,C,A */
09944 ,{ 315, 280, 315, 225, 315} /* NN,NN,G,C,C */
09945 ,{ 325, 260, 325, 235, 325} /* NN,NN,G,C,G */
09946 ,{ 315, 280, 315, 225, 315} /* NN,NN,G,C,U/T */
09947 }
09948 ,{{ 325, 260, 325, 300, 325} /* NN,NN,G,G,E */
09949 ,{ 300, 235, 300, 275, 300} /* NN,NN,G,G,A */
09950 ,{ 310, 245, 310, 220, 310} /* NN,NN,G,G,C */
09951 ,{ 300, 235, 325, 275, 325} /* NN,NN,G,G,G */
09952 ,{ 325, 260, 325, 235, 325} /* NN,NN,G,G,U/T */
09953 }
09954 ,{{ 325, 290, 325, 300, 325} /* NN,NN,G,U/T,E */
09955 ,{ 325, 260, 325, 235, 325} /* NN,NN,G,U/T,A */
09956 ,{ 315, 280, 315, 225, 315} /* NN,NN,G,U/T,C */
09957 ,{ 325, 260, 325, 235, 325} /* NN,NN,G,U/T,G */
09958 ,{ 315, 250, 315, 290, 315} /* NN,NN,G,U/T,U/T */
09959 }
09960 }
09961 ,{{{ 370, 340, 345, 340, 360} /* NN,NN,U/T,E,E */
09962 ,{ 370, 340, 345, 340, 360} /* NN,NN,U/T,E,A */
09963 ,{ 315, 315, 305, 315, 305} /* NN,NN,U/T,E,C */
09964 ,{ 325, 325, 315, 325, 315} /* NN,NN,U/T,E,G */
09965 ,{ 325, 325, 315, 325, 315} /* NN,NN,U/T,E,U/T */
09966 }
09967 ,{{ 370, 340, 330, 340, 360} /* NN,NN,U/T,A,E */
09968 ,{ 345, 315, 305, 315, 335} /* NN,NN,U/T,A,A */
09969 ,{ 315, 315, 305, 315, 305} /* NN,NN,U/T,A,C */
09970 ,{ 290, 260, 280, 260, 250} /* NN,NN,U/T,A,G */
09971 ,{ 325, 325, 315, 325, 315} /* NN,NN,U/T,A,U/T */
09972 }
09973 ,{{ 325, 325, 315, 325, 315} /* NN,NN,U/T,C,E */
09974 ,{ 315, 315, 305, 315, 305} /* NN,NN,U/T,C,A */
09975 ,{ 315, 315, 305, 315, 305} /* NN,NN,U/T,C,C */
09976 ,{ 325, 325, 315, 325, 315} /* NN,NN,U/T,C,G */
09977 ,{ 315, 315, 305, 315, 305} /* NN,NN,U/T,C,U/T */
09978 }
09979 ,{{ 355, 325, 345, 325, 315} /* NN,NN,U/T,G,E */
09980 ,{ 330, 300, 320, 300, 290} /* NN,NN,U/T,G,A */
09981 ,{ 310, 310, 300, 310, 300} /* NN,NN,U/T,G,C */
09982 ,{ 300, 235, 225, 235, 290} /* NN,NN,U/T,G,G */
09983 ,{ 325, 325, 315, 325, 315} /* NN,NN,U/T,G,U/T */
09984 }
09985 ,{{ 325, 325, 315, 325, 315} /* NN,NN,U/T,U/T,E */
09986 ,{ 325, 325, 315, 325, 315} /* NN,NN,U/T,U/T,A */
09987 ,{ 315, 315, 305, 315, 305} /* NN,NN,U/T,U/T,C */
09988 ,{ 325, 325, 315, 325, 315} /* NN,NN,U/T,U/T,G */
09989 ,{ 315, 315, 305, 315, 305} /* NN,NN,U/T,U/T,U/T */
09990 }
09991 }

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09992   }
09993   }
09994   };
09995

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11.103 intl22dH.h

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00001 PUBLIC int intl22_dH[NBPAIRS+1][NBPAIRS+1][5][5][5][5] =
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00003   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,E,A */
00004   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,E,C */
00005   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,E,G */
00006   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,E,U */
00007   }
00008   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,E,A,E */
00009   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,A,A */
00010   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,A,C */
00011   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,A,G */
00012   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,A,U */
00013   }
00014   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,E,C,E */
00015   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,C,A */
00016   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,C,C */
00017   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,C,G */
00018   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,C,U */
00019   }
00020   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,E,G,E */
00021   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,G,A */
00022   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,G,C */
00023   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,G,G */
00024   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,G,U */
00025   }
00026   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,E,U,E */
00027   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,U,A */
00028   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,U,C */
00029   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,U,G */
00030   ,{ INF, INF, INF, INF, INF} /* NP,NP,E,U,U */
00031   }
00032   }
00033   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,E,E */
00034   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,E,A */
00035   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,E,C */
00036   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,E,G */
00037   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,E,U */
00038   }
00039   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,A,E */
00040   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,A,A */
00041   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,A,C */
00042   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,A,G */
00043   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,A,U */
00044   }
00045   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,C,E */
00046   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,C,A */
00047   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,C,C */
00048   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,C,G */
00049   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,C,U */
00050   }
00051   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,G,E */
00052   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,G,A */
00053   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,G,C */
00054   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,G,G */
00055   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,G,U */
00056   }
00057   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,U,E */
00058   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,U,A */
00059   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,U,C */
00060   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,U,G */
00061   ,{ INF, INF, INF, INF, INF} /* NP,NP,A,U,U */
00062   }
00063   }
00064   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,C,E,E */
00065   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,E,A */
00066   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,E,C */
00067   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,E,G */
00068   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,E,U */
00069   }
00070   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,C,A,E */
00071   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,A,A */
00072   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,A,C */
00073   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,A,G */
00074   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,A,U */
00075   }
00076   ,{{{ INF, INF, INF, INF, INF} /* NP,NP,C,C,E */
00077   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,C,A */
00078   ,{ INF, INF, INF, INF, INF} /* NP,NP,C,C,C */

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00080      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,C,U */
00081      }
00082      , {{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,G,E */
00083      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,G,A */
00084      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,G,C */
00085      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,G,G */
00086      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,G,U */
00087      }
00088      , {{      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,U,E */
00089      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,U,A */
00090      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,U,C */
00091      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,U,G */
00092      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,U,U */
00093      }
00094      }
00095      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,E */
00096      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,A */
00097      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,C */
00098      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,G */
00099      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,U */
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00103      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,C */
00104      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,G */
00105      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,U */
00106      }
00107      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,E */
00108      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,A */
00109      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,C */
00110      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,G */
00111      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,U */
00112      }
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00119      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U,E */
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00122      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U,G */
00123      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U,U */
00124      }
00125      }
00126      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,E,E */
00127      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,E,A */
00128      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,E,C */
00129      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,E,G */
00130      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,E,U */
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00151      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U,U,A */
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00157      }
00158      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,E */
00159      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,A */
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00161      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,G */
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00163      }
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00165      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,A,A */

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00173 , { INF, INF, INF, INF, INF} /* NP,CG,E,C,G */
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00283 , { INF, INF, INF, INF, INF} /* NP,CG,U,E,A */
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00297 , { INF, INF, INF, INF, INF} /* NP,CG,U,C,G */
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00307 , { INF, INF, INF, INF, INF} /* NP,CG,U,U,A */
00308 , { INF, INF, INF, INF, INF} /* NP,CG,U,U,C */
00309 , { INF, INF, INF, INF, INF} /* NP,CG,U,U,G */
00310 , { INF, INF, INF, INF, INF} /* NP,CG,U,U,U */
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00312 }
00313 }
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00324 , { INF, INF, INF, INF, INF} /* NP,GC,E,A,U */
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00335 , { INF, INF, INF, INF, INF} /* NP,GC,E,G,G */
00336 , { INF, INF, INF, INF, INF} /* NP,GC,E,G,U */
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00339 , { INF, INF, INF, INF, INF} /* NP,GC,E,U,A */

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00342      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,E,U,U */
00343      }
00344      }
00345      , {{      INF,      INF,      INF,      INF,      INF} /* NP,GC,A,E,E */
00346      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,A,E,A */
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00349      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,A,E,U */
00350      }
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00352      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,A,A,A */
00353      , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,A,A,C */
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00692 ,{ INF, INF, INF, INF, INF} /* NP,UG,C,E,U */
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00767 }
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00769 ,{ INF, INF, INF, INF, INF} /* NP,UG,U,G,A */
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00771 ,{ INF, INF, INF, INF, INF} /* NP,UG,U,G,G */
00772 ,{ INF, INF, INF, INF, INF} /* NP,UG,U,G,U */
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00774 ,{{{ INF, INF, INF, INF, INF} /* NP,UG,U,U,E */
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00781  }
00782  ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,AU,E,E,E */
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00955      }
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00959      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,E,G,G */
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00961      }
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00963      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,E,U,A */
00964      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,E,U,C */
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00967      }
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00970      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,E,A */
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00975      ,{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,A,E */
00976      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,A,A */
00977      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,A,C */
00978      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,A,G */
00979      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,A,U */
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00981      ,{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,C,E */
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00993      ,{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,U,E */
00994      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,U,A */
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00996      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,A,U,G */
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01001      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,C,E,A */
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01015      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,C,C,G */
01016      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,C,C,U */
01017      }
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01019      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,C,G,A */
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01029      }
01030      }
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01120 ,{{     INF,     INF,     INF,     INF,     INF} /* NP,NN,E,U,C */
01121 ,{{     INF,     INF,     INF,     INF,     INF} /* NP,NN,E,U,G */
01122 ,{{     INF,     INF,     INF,     INF,     INF} /* NP,NN,E,U,U */

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01126     ,{     INF,   INF,   INF,   INF,   INF} /* NP,NN,A,E,A */
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01128     ,{     INF,   INF,   INF,   INF,   INF} /* NP,NN,A,E,G */
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01254     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,E,G */
01255     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,E,U */
01256     }
01257     ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,A,E */
01258     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,A,A */
01259     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,A,C */
01260     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,A,G */
01261     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,A,U */
01262     }
01263     ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,C,E */
01264     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,C,A */
01265     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,C,C */
01266     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,C,G */
01267     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,C,U */
01268     }
01269     ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,G,E */
01270     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,G,A */
01271     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,G,C */
01272     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,G,G */
01273     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,G,U */
01274     }
01275     ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,U,E */
01276     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,U,A */
01277     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,U,C */
01278     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,U,G */
01279     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,E,U,U */
01280     }
01281     }
01282     ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,E,E */
01283     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,E,A */
01284     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,E,C */
01285     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,E,G */
01286     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,E,U */
01287     }
01288     ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,A,E */
01289     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,A,A */
01290     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,A,C */
01291     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,A,G */
01292     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,A,U */
01293     }
01294     ,{{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,C,E */
01295     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,C,A */
01296     ,{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,A,C,C */

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01299 }
01300 , { { INF, INF, INF, INF, INF} /* CG,NP,A,G,E */
01301 , { INF, INF, INF, INF, INF} /* CG,NP,A,G,A */
01302 , { INF, INF, INF, INF, INF} /* CG,NP,A,G,C */
01303 , { INF, INF, INF, INF, INF} /* CG,NP,A,G,G */
01304 , { INF, INF, INF, INF, INF} /* CG,NP,A,G,U */
01305 }
01306 , { { INF, INF, INF, INF, INF} /* CG,NP,A,U,E */
01307 , { INF, INF, INF, INF, INF} /* CG,NP,A,U,A */
01308 , { INF, INF, INF, INF, INF} /* CG,NP,A,U,C */
01309 , { INF, INF, INF, INF, INF} /* CG,NP,A,U,G */
01310 , { INF, INF, INF, INF, INF} /* CG,NP,A,U,U */
01311 }
01312 }
01313 , { { { INF, INF, INF, INF, INF} /* CG,NP,C,E,E */
01314 , { INF, INF, INF, INF, INF} /* CG,NP,C,E,A */
01315 , { INF, INF, INF, INF, INF} /* CG,NP,C,E,C */
01316 , { INF, INF, INF, INF, INF} /* CG,NP,C,E,G */
01317 , { INF, INF, INF, INF, INF} /* CG,NP,C,E,U */
01318 }
01319 , { { INF, INF, INF, INF, INF} /* CG,NP,C,A,E */
01320 , { INF, INF, INF, INF, INF} /* CG,NP,C,A,A */
01321 , { INF, INF, INF, INF, INF} /* CG,NP,C,A,C */
01322 , { INF, INF, INF, INF, INF} /* CG,NP,C,A,G */
01323 , { INF, INF, INF, INF, INF} /* CG,NP,C,A,U */
01324 }
01325 , { { INF, INF, INF, INF, INF} /* CG,NP,C,C,E */
01326 , { INF, INF, INF, INF, INF} /* CG,NP,C,C,A */
01327 , { INF, INF, INF, INF, INF} /* CG,NP,C,C,C */
01328 , { INF, INF, INF, INF, INF} /* CG,NP,C,C,G */
01329 , { INF, INF, INF, INF, INF} /* CG,NP,C,C,U */
01330 }
01331 , { { INF, INF, INF, INF, INF} /* CG,NP,C,G,E */
01332 , { INF, INF, INF, INF, INF} /* CG,NP,C,G,A */
01333 , { INF, INF, INF, INF, INF} /* CG,NP,C,G,C */
01334 , { INF, INF, INF, INF, INF} /* CG,NP,C,G,G */
01335 , { INF, INF, INF, INF, INF} /* CG,NP,C,G,U */
01336 }
01337 , { { INF, INF, INF, INF, INF} /* CG,NP,C,U,E */
01338 , { INF, INF, INF, INF, INF} /* CG,NP,C,U,A */
01339 , { INF, INF, INF, INF, INF} /* CG,NP,C,U,C */
01340 , { INF, INF, INF, INF, INF} /* CG,NP,C,U,G */
01341 , { INF, INF, INF, INF, INF} /* CG,NP,C,U,U */
01342 }
01343 }
01344 , { { { INF, INF, INF, INF, INF} /* CG,NP,G,E,E */
01345 , { INF, INF, INF, INF, INF} /* CG,NP,G,E,A */
01346 , { INF, INF, INF, INF, INF} /* CG,NP,G,E,C */
01347 , { INF, INF, INF, INF, INF} /* CG,NP,G,E,G */
01348 , { INF, INF, INF, INF, INF} /* CG,NP,G,E,U */
01349 }
01350 , { { INF, INF, INF, INF, INF} /* CG,NP,G,A,E */
01351 , { INF, INF, INF, INF, INF} /* CG,NP,G,A,A */
01352 , { INF, INF, INF, INF, INF} /* CG,NP,G,A,C */
01353 , { INF, INF, INF, INF, INF} /* CG,NP,G,A,G */
01354 , { INF, INF, INF, INF, INF} /* CG,NP,G,A,U */
01355 }
01356 , { { INF, INF, INF, INF, INF} /* CG,NP,G,C,E */
01357 , { INF, INF, INF, INF, INF} /* CG,NP,G,C,A */
01358 , { INF, INF, INF, INF, INF} /* CG,NP,G,C,C */
01359 , { INF, INF, INF, INF, INF} /* CG,NP,G,C,G */
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01364 , { INF, INF, INF, INF, INF} /* CG,NP,G,G,C */
01365 , { INF, INF, INF, INF, INF} /* CG,NP,G,G,G */
01366 , { INF, INF, INF, INF, INF} /* CG,NP,G,G,U */
01367 }
01368 , { { INF, INF, INF, INF, INF} /* CG,NP,G,U,E */
01369 , { INF, INF, INF, INF, INF} /* CG,NP,G,U,A */
01370 , { INF, INF, INF, INF, INF} /* CG,NP,G,U,C */
01371 , { INF, INF, INF, INF, INF} /* CG,NP,G,U,G */
01372 , { INF, INF, INF, INF, INF} /* CG,NP,G,U,U */
01373 }
01374 }
01375 , { { { INF, INF, INF, INF, INF} /* CG,NP,U,E,E */
01376 , { INF, INF, INF, INF, INF} /* CG,NP,U,E,A */
01377 , { INF, INF, INF, INF, INF} /* CG,NP,U,E,C */
01378 , { INF, INF, INF, INF, INF} /* CG,NP,U,E,G */
01379 , { INF, INF, INF, INF, INF} /* CG,NP,U,E,U */
01380 }
01381 , { { INF, INF, INF, INF, INF} /* CG,NP,U,A,E */
01382 , { INF, INF, INF, INF, INF} /* CG,NP,U,A,A */
01383 , { INF, INF, INF, INF, INF} /* CG,NP,U,A,C */

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01384 , { INF, INF, INF, INF, INF} /* CG,NP,U,A,G */
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01386 }
01387 , {{ INF, INF, INF, INF, INF} /* CG,NP,U,C,E */
01388 , { INF, INF, INF, INF, INF} /* CG,NP,U,C,A */
01389 , { INF, INF, INF, INF, INF} /* CG,NP,U,C,C */
01390 , { INF, INF, INF, INF, INF} /* CG,NP,U,C,G */
01391 , { INF, INF, INF, INF, INF} /* CG,NP,U,C,U */
01392 }
01393 , {{ INF, INF, INF, INF, INF} /* CG,NP,U,G,E */
01394 , { INF, INF, INF, INF, INF} /* CG,NP,U,G,A */
01395 , { INF, INF, INF, INF, INF} /* CG,NP,U,G,C */
01396 , { INF, INF, INF, INF, INF} /* CG,NP,U,G,G */
01397 , { INF, INF, INF, INF, INF} /* CG,NP,U,G,U */
01398 }
01399 , {{ INF, INF, INF, INF, INF} /* CG,NP,U,U,E */
01400 , { INF, INF, INF, INF, INF} /* CG,NP,U,U,A */
01401 , { INF, INF, INF, INF, INF} /* CG,NP,U,U,C */
01402 , { INF, INF, INF, INF, INF} /* CG,NP,U,U,G */
01403 , { INF, INF, INF, INF, INF} /* CG,NP,U,U,U */
01404 }
01405 }
01406 }
01407 , {{{ 80, -120, 30, 80, 80} /* CG,CG,E,E,E */
01408 , { 30, -310, -170, 30, -110} /* CG,CG,E,E,A */
01409 , { 80, -230, -110, 80, -60} /* CG,CG,E,E,C */
01410 , { 80, -120, 30, 30, 80} /* CG,CG,E,E,G */
01411 , { -30, -340, -220, -30, -170} /* CG,CG,E,E,U */
01412 }
01413 , {{ -120, -460, -290, -120, -230} /* CG,CG,E,A,E */
01414 , { -120, -460, -310, -120, -260} /* CG,CG,E,A,A */
01415 , { -430, -770, -620, -430, -570} /* CG,CG,E,A,C */
01416 , { -230, -670, -290, -980, -230} /* CG,CG,E,A,G */
01417 , { -430, -770, -620, -430, -570} /* CG,CG,E,A,U */
01418 }
01419 , {{ 30, -290, -170, 30, -110} /* CG,CG,E,C,E */
01420 , { 30, -310, -170, 30, -110} /* CG,CG,E,C,A */
01421 , { 20, -290, -170, 20, -120} /* CG,CG,E,C,C */
01422 , { 30, -310, -170, 30, -110} /* CG,CG,E,C,G */
01423 , { -30, -340, -220, -30, -170} /* CG,CG,E,C,U */
01424 }
01425 , {{ 80, -120, 30, -430, 80} /* CG,CG,E,G,E */
01426 , { -520, -960, -580, -1270, -520} /* CG,CG,E,G,A */
01427 , { -430, -770, -620, -430, -570} /* CG,CG,E,G,C */
01428 , { 80, -120, 30, -430, 80} /* CG,CG,E,G,G */
01429 , { -430, -770, -620, -430, -570} /* CG,CG,E,G,U */
01430 }
01431 , {{ 80, -230, -110, 80, -60} /* CG,CG,E,U,E */
01432 , { 30, -310, -170, 30, -110} /* CG,CG,E,U,A */
01433 , { 80, -230, -110, 80, -60} /* CG,CG,E,U,C */
01434 , { 30, -310, -170, 30, -110} /* CG,CG,E,U,G */
01435 , { -860, -860, -960, -1410, -900} /* CG,CG,E,U,U */
01436 }
01437 }
01438 , {{{ 30, -120, 30, -520, 30} /* CG,CG,A,E,E */
01439 , { -170, -310, -170, -810, -170} /* CG,CG,A,E,A */
01440 , { -110, -260, -110, -520, -110} /* CG,CG,A,E,C */
01441 , { 30, -120, 30, -810, 30} /* CG,CG,A,E,G */
01442 , { -220, -370, -220, -630, -220} /* CG,CG,A,E,U */
01443 }
01444 , {{ -310, -460, -310, -960, -310} /* CG,CG,A,A,E */
01445 , { -310, -460, -310, -960, -310} /* CG,CG,A,A,A */
01446 , { -620, -770, -620, -1270, -620} /* CG,CG,A,A,C */
01447 , { -530, -670, -530, -1170, -530} /* CG,CG,A,A,G */
01448 , { -620, -770, -620, -1270, -620} /* CG,CG,A,A,U */
01449 }
01450 , {{ -170, -310, -170, -580, -170} /* CG,CG,A,C,E */
01451 , { -170, -310, -170, -810, -170} /* CG,CG,A,C,A */
01452 , { -170, -320, -170, -580, -170} /* CG,CG,A,C,C */
01453 , { -170, -310, -170, -810, -170} /* CG,CG,A,C,G */
01454 , { -220, -370, -220, -630, -220} /* CG,CG,A,C,U */
01455 }
01456 , {{ 30, -120, 30, -1270, 30} /* CG,CG,A,G,E */
01457 , { -810, -960, -810, -1460, -810} /* CG,CG,A,G,A */
01458 , { -620, -770, -620, -1270, -620} /* CG,CG,A,G,C */
01459 , { 30, -120, 30, -1870, 30} /* CG,CG,A,G,G */
01460 , { -620, -770, -620, -1270, -620} /* CG,CG,A,G,U */
01461 }
01462 , {{ -110, -260, -110, -520, -110} /* CG,CG,A,U,E */
01463 , { -170, -310, -170, -810, -170} /* CG,CG,A,U,A */
01464 , { -110, -260, -110, -520, -110} /* CG,CG,A,U,C */
01465 , { -170, -310, -170, -810, -170} /* CG,CG,A,U,G */
01466 , { -860, -860, -960, -1600, -960} /* CG,CG,A,U,U */
01467 }
01468 }
01469 , {{{ 80, -430, 20, -430, 80} /* CG,CG,C,E,E */
01470 , { -110, -620, -170, -620, -110} /* CG,CG,C,E,A */
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01471 , { -60, -570, -120, -570, -60} /* CG,CG,C,E,C */
01472 , { 80, -430, 20, -430, 80} /* CG,CG,C,E,G */
01473 , { -170, -680, -230, -680, -170} /* CG,CG,C,E,U */
01474 }
01475 , {{ -230, -770, -290, -770, -230} /* CG,CG,C,A,E */
01476 , { -260, -770, -320, -770, -260} /* CG,CG,C,A,A */
01477 , { -570, -1080, -630, -1080, -570} /* CG,CG,C,A,C */
01478 , { -230, -980, -290, -980, -230} /* CG,CG,C,A,G */
01479 , { -570, -1080, -630, -1080, -570} /* CG,CG,C,A,U */
01480 }
01481 , {{ -110, -620, -170, -620, -110} /* CG,CG,C,C,E */
01482 , { -110, -620, -170, -620, -110} /* CG,CG,C,C,A */
01483 , { -120, -630, -180, -630, -120} /* CG,CG,C,C,C */
01484 , { -110, -620, -170, -620, -110} /* CG,CG,C,C,G */
01485 , { -170, -680, -230, -680, -170} /* CG,CG,C,C,U */
01486 }
01487 , {{ 80, -430, 20, -430, 80} /* CG,CG,C,G,E */
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01489 , { -570, -1080, -630, -1080, -570} /* CG,CG,C,G,C */
01490 , { 80, -430, 20, -430, 80} /* CG,CG,C,G,G */
01491 , { -570, -1080, -630, -1080, -570} /* CG,CG,C,G,U */
01492 }
01493 , {{ -60, -570, -120, -570, -60} /* CG,CG,C,U,E */
01494 , { -110, -620, -170, -620, -110} /* CG,CG,C,U,A */
01495 , { -60, -570, -120, -570, -60} /* CG,CG,C,U,C */
01496 , { -110, -620, -170, -620, -110} /* CG,CG,C,U,G */
01497 , { -900, -1410, -960, -1410, -900} /* CG,CG,C,U,U */
01498 }
01499 }
01500 , {{{ 80, -230, 30, 80, 30} /* CG,CG,G,E,E */
01501 , { 30, -530, -170, 30, -170} /* CG,CG,G,E,A */
01502 , { 80, -230, -110, 80, -110} /* CG,CG,G,E,C */
01503 , { 30, -530, 30, 30, 30} /* CG,CG,G,E,G */
01504 , { -30, -340, -220, -30, -220} /* CG,CG,G,E,U */
01505 }
01506 , {{ -120, -670, -310, -120, -310} /* CG,CG,G,A,E */
01507 , { -120, -670, -310, -120, -310} /* CG,CG,G,A,A */
01508 , { -430, -980, -620, -430, -620} /* CG,CG,G,A,C */
01509 , { -530, -890, -530, -1580, -530} /* CG,CG,G,A,G */
01510 , { -430, -980, -620, -430, -620} /* CG,CG,G,A,U */
01511 }
01512 , {{ 30, -290, -170, 30, -170} /* CG,CG,G,C,E */
01513 , { 30, -530, -170, 30, -170} /* CG,CG,G,C,A */
01514 , { 20, -290, -170, 20, -170} /* CG,CG,G,C,C */
01515 , { 30, -530, -170, 30, -170} /* CG,CG,G,C,G */
01516 , { -30, -340, -220, -30, -220} /* CG,CG,G,C,U */
01517 }
01518 , {{ 30, -980, 30, -430, 30} /* CG,CG,G,G,E */
01519 , { -810, -1170, -810, -1870, -810} /* CG,CG,G,G,A */
01520 , { -430, -980, -620, -430, -620} /* CG,CG,G,G,C */
01521 , { 30, -1580, 30, -2280, 30} /* CG,CG,G,G,G */
01522 , { -430, -980, -620, -430, -620} /* CG,CG,G,G,U */
01523 }
01524 , {{{ 80, -230, -110, 80, -110} /* CG,CG,G,U,E */
01525 , { 30, -530, -170, 30, -170} /* CG,CG,G,U,A */
01526 , { 80, -230, -110, 80, -110} /* CG,CG,G,U,C */
01527 , { 30, -530, -170, 30, -170} /* CG,CG,G,U,G */
01528 , { -960, -1320, -960, -2010, -960} /* CG,CG,G,U,U */
01529 }
01530 }
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01532 , { -220, -620, -220, -620, -860} /* CG,CG,U,E,A */
01533 , { -170, -570, -170, -570, -900} /* CG,CG,U,E,C */
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01535 , { -280, -680, -280, -680, -1010} /* CG,CG,U,E,U */
01536 }
01537 , {{ -340, -770, -340, -770, -860} /* CG,CG,U,A,E */
01538 , { -370, -770, -370, -770, -860} /* CG,CG,U,A,A */
01539 , { -680, -1080, -680, -1080, -1410} /* CG,CG,U,A,C */
01540 , { -340, -980, -340, -980, -1320} /* CG,CG,U,A,G */
01541 , { -680, -1080, -680, -1080, -1410} /* CG,CG,U,A,U */
01542 }
01543 , {{ -220, -620, -220, -620, -960} /* CG,CG,U,C,E */
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01545 , { -230, -630, -230, -630, -960} /* CG,CG,U,C,C */
01546 , { -220, -620, -220, -620, -960} /* CG,CG,U,C,G */
01547 , { -280, -680, -280, -680, -1010} /* CG,CG,U,C,U */
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01552 , { -30, -430, -30, -430, -2010} /* CG,CG,U,G,G */
01553 , { -680, -1080, -680, -1080, -1410} /* CG,CG,U,G,U */
01554 }
01555 , {{ -170, -570, -170, -570, -900} /* CG,CG,U,U,E */
01556 , { -220, -620, -220, -620, -960} /* CG,CG,U,U,A */
01557 , { -170, -570, -170, -570, -900} /* CG,CG,U,U,C */

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```
01558 , { -220, -620, -220, -620, -960} /* CG,CG,U,U,G */
01559 , { -1010, -1410, -1010, -1410, -1750} /* CG,CG,U,U,U */
01560 }
01561 }
01562 }
01563 ,{{{ 540, 180, 30, 540, 180} /* CG,GC,E,E,E */
01564 , { 10, -580, -150, 10, -90} /* CG,GC,E,E,A */
01565 , { 540, -350, -600, 540, -540} /* CG,GC,E,E,C */
01566 , { 180, 180, 30, -320, 180} /* CG,GC,E,E,G */
01567 , { -90, -740, -90, -260, -540} /* CG,GC,E,E,U */
01568 }
01569 , { { -90, -350, -150, -100, -90} /* CG,GC,E,A,E */
01570 , { -90, -580, -150, -200, -90} /* CG,GC,E,A,A */
01571 , { -100, -350, -600, -100, -540} /* CG,GC,E,A,C */
01572 , { -630, -1790, -630, -1790, -1040} /* CG,GC,E,A,G */
01573 , { -400, -740, -600, -400, -540} /* CG,GC,E,A,U */
01574 }
01575 , { { 540, -660, -510, 540, -400} /* CG,GC,E,C,E */
01576 , { 10, -660, -510, 10, -400} /* CG,GC,E,C,A */
01577 , { 540, -940, -820, 540, -760} /* CG,GC,E,C,C */
01578 , { -320, -660, -510, -320, -460} /* CG,GC,E,C,G */
01579 , { -260, -940, -820, -260, -550} /* CG,GC,E,C,U */
01580 }
01581 , { { 180, 180, 30, -400, 180} /* CG,GC,E,G,E */
01582 , { -500, -1070, -500, -1080, -570} /* CG,GC,E,G,A */
01583 , { -400, -740, -600, -400, -540} /* CG,GC,E,G,C */
01584 , { 180, 180, 30, -430, 180} /* CG,GC,E,G,G */
01585 , { -400, -740, -600, -400, -540} /* CG,GC,E,G,U */
01586 }
01587 , { { -90, -660, -90, -210, -460} /* CG,GC,E,U,E */
01588 , { -320, -660, -510, -320, -460} /* CG,GC,E,U,A */
01589 , { -210, -1250, -1130, -210, -1070} /* CG,GC,E,U,C */
01590 , { -320, -660, -510, -320, -460} /* CG,GC,E,U,G */
01591 , { -90, -830, -90, -810, -800} /* CG,GC,E,U,U */
01592 }
01593 }
01594 ,{{{ 540, 180, -90, 540, 30} /* CG,GC,A,E,E */
01595 , { 10, -580, -220, 10, -150} /* CG,GC,A,E,A */
01596 , { 540, -740, -600, 540, -600} /* CG,GC,A,E,C */
01597 , { 180, 180, -390, -1160, 30} /* CG,GC,A,E,G */
01598 , { -90, -740, -90, -810, -600} /* CG,GC,A,E,U */
01599 }
01600 , { { -100, -580, -220, -100, -150} /* CG,GC,A,A,E */
01601 , { -150, -580, -220, -970, -150} /* CG,GC,A,A,A */
01602 , { -100, -740, -600, -100, -600} /* CG,GC,A,A,C */
01603 , { -1340, -2010, -1650, -1980, -1340} /* CG,GC,A,A,G */
01604 , { -600, -740, -600, -1240, -600} /* CG,GC,A,A,U */
01605 }
01606 , { { 540, -660, -510, 540, -510} /* CG,GC,A,C,E */
01607 , { 10, -660, -1150, 10, -510} /* CG,GC,A,C,A */
01608 , { 540, -960, -820, 540, -820} /* CG,GC,A,C,C */
01609 , { -510, -660, -510, -1160, -510} /* CG,GC,A,C,G */
01610 , { -820, -960, -820, -1220, -820} /* CG,GC,A,C,U */
01611 }
01612 , { { 180, 180, -390, -1240, 30} /* CG,GC,A,G,E */
01613 , { -860, -1340, -860, -2450, -860} /* CG,GC,A,G,A */
01614 , { -600, -740, -600, -1240, -600} /* CG,GC,A,G,C */
01615 , { 180, 180, -390, -1870, 30} /* CG,GC,A,G,G */
01616 , { -600, -740, -600, -1240, -600} /* CG,GC,A,G,U */
01617 }
01618 , { { -90, -660, -90, -810, -510} /* CG,GC,A,U,E */
01619 , { -510, -660, -510, -1160, -510} /* CG,GC,A,U,A */
01620 , { -1130, -1270, -1130, -1530, -1130} /* CG,GC,A,U,C */
01621 , { -510, -660, -510, -1160, -510} /* CG,GC,A,U,G */
01622 , { -90, -1240, -90, -810, -800} /* CG,GC,A,U,U */
01623 }
01624 }
01625 ,{{{ 180, -430, 20, -430, 180} /* CG,GC,C,E,E */
01626 , { -90, -600, -500, -600, -90} /* CG,GC,C,E,A */
01627 , { -540, -1050, -600, -1050, -540} /* CG,GC,C,E,C */
01628 , { 180, -430, 20, -430, 180} /* CG,GC,C,E,G */
01629 , { -540, -830, -600, -1050, -540} /* CG,GC,C,E,U */
01630 }
01631 , { { -90, -600, -600, -600, -90} /* CG,GC,C,A,E */
01632 , { -90, -600, -1070, -600, -90} /* CG,GC,C,A,A */
01633 , { -540, -1050, -600, -1050, -540} /* CG,GC,C,A,C */
01634 , { -630, -1790, -630, -1790, -1040} /* CG,GC,C,A,G */
01635 , { -540, -1050, -600, -1050, -540} /* CG,GC,C,A,U */
01636 }
01637 , { { -460, -970, -520, -970, -460} /* CG,GC,C,C,E */
01638 , { -460, -970, -750, -970, -460} /* CG,GC,C,C,A */
01639 , { -760, -1270, -820, -1270, -760} /* CG,GC,C,C,C */
01640 , { -460, -970, -520, -970, -460} /* CG,GC,C,C,G */
01641 , { -550, -1270, -820, -1270, -550} /* CG,GC,C,C,U */
01642 }
01643 ,{{{ 180, -430, 20, -430, 180} /* CG,GC,C,G,E */
01644 , { -500, -1070, -500, -1320, -570} /* CG,GC,C,G,A */
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01645 , { -540, -1050, -600, -1050, -540} /* CG,GC,C,G,C */
01646 , { 180, -430, 20, -430, 180} /* CG,GC,C,G,G */
01647 , { -540, -1050, -600, -1050, -540} /* CG,GC,C,G,U */
01648 }
01649 , {{ -460, -830, -520, -970, -460} /* CG,GC,C,U,E */
01650 , { -460, -970, -520, -970, -460} /* CG,GC,C,U,A */
01651 , { -1070, -1580, -1130, -1580, -1070} /* CG,GC,C,U,C */
01652 , { -460, -970, -520, -970, -460} /* CG,GC,C,U,G */
01653 , { -830, -830, -1710, -1260, -1460} /* CG,GC,C,U,U */
01654 }
01655 }
01656 , {{{ 30, -350, 30, -200, 30} /* CG,GC,G,E,E */
01657 , { -150, -870, -150, -200, -150} /* CG,GC,G,E,A */
01658 , { -210, -350, -600, -210, -600} /* CG,GC,G,E,C */
01659 , { 30, -870, 30, -320, 30} /* CG,GC,G,E,G */
01660 , { -260, -940, -600, -260, -600} /* CG,GC,G,E,U */
01661 }
01662 , {{ -150, -350, -150, -200, -150} /* CG,GC,G,A,E */
01663 , { -150, -1600, -150, -200, -150} /* CG,GC,G,A,A */
01664 , { -350, -350, -600, -440, -600} /* CG,GC,G,A,C */
01665 , { -1340, -3070, -1340, -2390, -1340} /* CG,GC,G,A,G */
01666 , { -400, -960, -600, -400, -600} /* CG,GC,G,A,U */
01667 }
01668 , {{ -260, -870, -510, -260, -510} /* CG,GC,G,C,E */
01669 , { -320, -1110, -510, -320, -510} /* CG,GC,G,C,A */
01670 , { -620, -940, -820, -620, -820} /* CG,GC,G,C,C */
01671 , { -320, -870, -510, -320, -510} /* CG,GC,G,C,G */
01672 , { -260, -940, -820, -260, -820} /* CG,GC,G,C,U */
01673 }
01674 , {{ 30, -960, 30, -400, 30} /* CG,GC,G,G,E */
01675 , { -860, -1880, -860, -1080, -860} /* CG,GC,G,G,A */
01676 , { -400, -960, -600, -400, -600} /* CG,GC,G,G,C */
01677 , { 30, -1370, 30, -2280, 30} /* CG,GC,G,G,G */
01678 , { -400, -960, -600, -400, -600} /* CG,GC,G,G,U */
01679 }
01680 , {{{ -210, -870, -510, -210, -510} /* CG,GC,G,U,E */
01681 , { -320, -870, -510, -320, -510} /* CG,GC,G,U,A */
01682 , { -210, -1250, -1130, -210, -1130} /* CG,GC,G,U,C */
01683 , { -320, -870, -510, -320, -510} /* CG,GC,G,U,G */
01684 , { -800, -1360, -800, -1550, -800} /* CG,GC,G,U,U */
01685 }
01686 }
01687 , {{{ -200, -430, -200, -430, -230} /* CG,GC,U,E,E */
01688 , { -200, -600, -200, -600, -400} /* CG,GC,U,E,A */
01689 , { -650, -1050, -650, -1050, -1390} /* CG,GC,U,E,C */
01690 , { -230, -430, -570, -430, -230} /* CG,GC,U,E,G */
01691 , { -650, -1050, -650, -1050, -1390} /* CG,GC,U,E,U */
01692 }
01693 , {{{ -200, -600, -200, -600, -1390} /* CG,GC,U,A,E */
01694 , { -200, -600, -200, -600, -1490} /* CG,GC,U,A,A */
01695 , { -650, -1050, -650, -1050, -1390} /* CG,GC,U,A,C */
01696 , { -1150, -1790, -1150, -1790, -1520} /* CG,GC,U,A,G */
01697 , { -650, -1050, -650, -1050, -1390} /* CG,GC,U,A,U */
01698 }
01699 , {{{ -400, -970, -570, -970, -400} /* CG,GC,U,C,E */
01700 , { -400, -970, -570, -970, -400} /* CG,GC,U,C,A */
01701 , { -870, -1270, -870, -1270, -1610} /* CG,GC,U,C,C */
01702 , { -570, -970, -570, -970, -1300} /* CG,GC,U,C,G */
01703 , { -870, -1270, -870, -1270, -1610} /* CG,GC,U,C,U */
01704 }
01705 , {{{ -230, -430, -650, -430, -230} /* CG,GC,U,G,E */
01706 , { -1300, -1320, -1750, -1320, -1300} /* CG,GC,U,G,A */
01707 , { -650, -1050, -650, -1050, -1390} /* CG,GC,U,G,C */
01708 , { -230, -430, -880, -430, -230} /* CG,GC,U,G,G */
01709 , { -650, -1050, -650, -1050, -1390} /* CG,GC,U,G,U */
01710 }
01711 , {{{ -570, -970, -570, -970, -1300} /* CG,GC,U,U,E */
01712 , { -570, -970, -570, -970, -1300} /* CG,GC,U,U,A */
01713 , { -1180, -1580, -1180, -1580, -1920} /* CG,GC,U,U,C */
01714 , { -570, -970, -570, -970, -1300} /* CG,GC,U,U,G */
01715 , { -860, -1260, -860, -1260, -2350} /* CG,GC,U,U,U */
01716 }
01717 }
01718 }
01719 , {{{ 240, 40, 190, -270, 240} /* CG,GU,E,E,E */
01720 , { -590, -1030, -650, -870, -590} /* CG,GU,E,E,A */
01721 , { -870, -1180, -1060, -870, -1010} /* CG,GU,E,E,C */
01722 , { 240, 40, 190, -270, 240} /* CG,GU,E,E,G */
01723 , { -870, -970, -1060, -870, -1010} /* CG,GU,E,E,U */
01724 }
01725 , {{{ -780, -1210, -840, -870, -780} /* CG,GU,E,A,E */
01726 , { -1050, -1370, -1240, -1050, -1190} /* CG,GU,E,A,A */
01727 , { -870, -1210, -1060, -870, -1010} /* CG,GU,E,A,C */
01728 , { -780, -1220, -840, -1530, -780} /* CG,GU,E,A,G */
01729 , { -870, -1210, -1060, -870, -1010} /* CG,GU,E,A,U */
01730 }
01731 , {{{ -870, -1180, -1060, -870, -1010} /* CG,GU,E,C,E */

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01732 , { -870, -1210, -1060, -870, -1010} /* CG, GU, E, C, A */
01733 , { -870, -1180, -1060, -870, -1010} /* CG, GU, E, C, C */
01734 , { -870, -1210, -1060, -870, -1010} /* CG, GU, E, C, G */
01735 , { -870, -1180, -1060, -870, -1010} /* CG, GU, E, C, U */
01736 }
01737 , { { 240, 40, 190, -270, 240} /* CG, GU, E, G, E */
01738 , { -590, -1030, -650, -1340, -590} /* CG, GU, E, G, A */
01739 , { -870, -1210, -1060, -870, -1010} /* CG, GU, E, G, C */
01740 , { 240, 40, 190, -270, 240} /* CG, GU, E, G, G */
01741 , { -870, -1210, -1060, -870, -1010} /* CG, GU, E, G, U */
01742 }
01743 , { { -870, -970, -1060, -870, -1010} /* CG, GU, E, U, E */
01744 , { -870, -1210, -1060, -870, -1010} /* CG, GU, E, U, A */
01745 , { -870, -1180, -1060, -870, -1010} /* CG, GU, E, U, C */
01746 , { -870, -1210, -1060, -870, -1010} /* CG, GU, E, U, G */
01747 , { -970, -970, -1060, -1520, -1010} /* CG, GU, E, U, U */
01748 }
01749 }
01750 , { { { 190, 40, 190, -1470, 190} /* CG, GU, A, E, E */
01751 , { -890, -1030, -890, -1530, -890} /* CG, GU, A, E, A */
01752 , { -1060, -1210, -1060, -1470, -1060} /* CG, GU, A, E, C */
01753 , { 190, 40, 190, -1710, 190} /* CG, GU, A, E, G */
01754 , { -970, -970, -1060, -1470, -1060} /* CG, GU, A, E, U */
01755 }
01756 , { { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, A, E */
01757 , { -1240, -1370, -1240, -1890, -1240} /* CG, GU, A, A, A */
01758 , { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, A, C */
01759 , { -1080, -1220, -1080, -1720, -1080} /* CG, GU, A, A, G */
01760 , { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, A, U */
01761 }
01762 , { { -1060, -1210, -1060, -1470, -1060} /* CG, GU, A, C, E */
01763 , { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, C, A */
01764 , { -1060, -1210, -1060, -1470, -1060} /* CG, GU, A, C, C */
01765 , { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, C, G */
01766 , { -1060, -1210, -1060, -1470, -1060} /* CG, GU, A, C, U */
01767 }
01768 , { { 190, 40, 190, -1530, 190} /* CG, GU, A, G, E */
01769 , { -890, -1030, -890, -1530, -890} /* CG, GU, A, G, A */
01770 , { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, G, C */
01771 , { 190, 40, 190, -1710, 190} /* CG, GU, A, G, G */
01772 , { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, G, U */
01773 }
01774 , { { -970, -970, -1060, -1470, -1060} /* CG, GU, A, U, E */
01775 , { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, U, A */
01776 , { -1060, -1210, -1060, -1470, -1060} /* CG, GU, A, U, C */
01777 , { -1060, -1210, -1060, -1710, -1060} /* CG, GU, A, U, G */
01778 , { -970, -970, -1060, -1710, -1060} /* CG, GU, A, U, U */
01779 }
01780 }
01781 , { { { 240, -270, 180, -270, 240} /* CG, GU, C, E, E */
01782 , { -590, -1340, -650, -1340, -590} /* CG, GU, C, E, A */
01783 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, E, C */
01784 , { 240, -270, 180, -270, 240} /* CG, GU, C, E, G */
01785 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, E, U */
01786 }
01787 , { { -780, -1520, -840, -1520, -780} /* CG, GU, C, A, E */
01788 , { -1190, -1700, -1250, -1700, -1190} /* CG, GU, C, A, A */
01789 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, A, C */
01790 , { -780, -1530, -840, -1530, -780} /* CG, GU, C, A, G */
01791 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, A, U */
01792 }
01793 , { { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, C, E */
01794 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, C, A */
01795 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, C, C */
01796 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, C, G */
01797 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, C, U */
01798 }
01799 , { { 240, -270, 180, -270, 240} /* CG, GU, C, G, E */
01800 , { -590, -1340, -650, -1340, -590} /* CG, GU, C, G, A */
01801 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, G, C */
01802 , { 240, -270, 180, -270, 240} /* CG, GU, C, G, G */
01803 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, G, U */
01804 }
01805 , { { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, U, E */
01806 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, U, A */
01807 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, U, C */
01808 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, U, G */
01809 , { -1010, -1520, -1070, -1520, -1010} /* CG, GU, C, U, U */
01810 }
01811 }
01812 , { { { 190, -1180, 190, -870, 190} /* CG, GU, G, E, E */
01813 , { -870, -1250, -890, -870, -890} /* CG, GU, G, E, A */
01814 , { -870, -1180, -1060, -870, -1060} /* CG, GU, G, E, C */
01815 , { 190, -1420, 190, -870, 190} /* CG, GU, G, E, G */
01816 , { -870, -1180, -1060, -870, -1060} /* CG, GU, G, E, U */
01817 }
01818 , { { -870, -1420, -1060, -870, -1060} /* CG, GU, G, A, E */
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01819 , { -1050, -1600, -1240, -1050, -1240} /* CG, GU, G, A, A */
01820 , { -870, -1420, -1060, -870, -1060} /* CG, GU, G, A, C */
01821 , { -1080, -1440, -1080, -2130, -1080} /* CG, GU, G, A, G */
01822 , { -870, -1420, -1060, -870, -1060} /* CG, GU, G, A, U */
01823 }
01824 , { { -870, -1180, -1060, -870, -1060} /* CG, GU, G, C, E */
01825 , { -870, -1420, -1060, -870, -1060} /* CG, GU, G, C, A */
01826 , { -870, -1180, -1060, -870, -1060} /* CG, GU, G, C, C */
01827 , { -870, -1420, -1060, -870, -1060} /* CG, GU, G, C, G */
01828 , { -870, -1180, -1060, -870, -1060} /* CG, GU, G, C, U */
01829 }
01830 , { { 190, -1250, 190, -870, 190} /* CG, GU, G, G, E */
01831 , { -890, -1250, -890, -1940, -890} /* CG, GU, G, G, A */
01832 , { -870, -1420, -1060, -870, -1060} /* CG, GU, G, G, C */
01833 , { 190, -1420, 190, -2120, 190} /* CG, GU, G, G, G */
01834 , { -870, -1420, -1060, -870, -1060} /* CG, GU, G, G, U */
01835 }
01836 , { { -870, -1180, -1060, -870, -1060} /* CG, GU, G, U, E */
01837 , { -870, -1420, -1060, -870, -1060} /* CG, GU, G, U, A */
01838 , { -870, -1180, -1060, -870, -1060} /* CG, GU, G, U, C */
01839 , { -870, -1420, -1060, -870, -1060} /* CG, GU, G, U, G */
01840 , { -1060, -1420, -1060, -2120, -1060} /* CG, GU, G, U, U */
01841 }
01842 }
01843 , { { { 130, -270, 130, -270, -1680} /* CG, GU, U, E, E */
01844 , { -700, -1340, -700, -1340, -1680} /* CG, GU, U, E, A */
01845 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, E, C */
01846 , { 130, -270, 130, -270, -1850} /* CG, GU, U, E, G */
01847 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, E, U */
01848 }
01849 , { { -890, -1520, -890, -1520, -1790} /* CG, GU, U, A, E */
01850 , { -1300, -1700, -1300, -1700, -1790} /* CG, GU, U, A, A */
01851 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, A, C */
01852 , { -890, -1530, -890, -1530, -1870} /* CG, GU, U, A, G */
01853 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, A, U */
01854 }
01855 , { { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, C, E */
01856 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, C, A */
01857 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, C, C */
01858 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, C, G */
01859 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, C, U */
01860 }
01861 , { { 130, -270, 130, -270, -1680} /* CG, GU, U, G, E */
01862 , { -700, -1340, -700, -1340, -1680} /* CG, GU, U, G, A */
01863 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, G, C */
01864 , { 130, -270, 130, -270, -1850} /* CG, GU, U, G, G */
01865 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, G, U */
01866 }
01867 , { { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, U, E */
01868 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, U, A */
01869 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, U, C */
01870 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, U, G */
01871 , { -1120, -1520, -1120, -1520, -1850} /* CG, GU, U, U, U */
01872 }
01873 }
01874 }
01875 , { { { 800, 600, 740, 290, 800} /* CG, UG, E, E, E */
01876 , { 200, -140, 0, 200, 50} /* CG, UG, E, E, A */
01877 , { -310, -630, -510, -310, -450} /* CG, UG, E, E, C */
01878 , { 800, 600, 740, 290, 800} /* CG, UG, E, E, G */
01879 , { -310, -410, -510, -310, -450} /* CG, UG, E, E, U */
01880 }
01881 , { { 200, -140, 0, 200, 50} /* CG, UG, E, A, E */
01882 , { 200, -140, 0, 200, 50} /* CG, UG, E, A, A */
01883 , { -310, -650, -510, -310, -450} /* CG, UG, E, A, C */
01884 , { -550, -990, -610, -1300, -550} /* CG, UG, E, A, G */
01885 , { -310, -650, -510, -310, -450} /* CG, UG, E, A, U */
01886 }
01887 , { { -310, -630, -510, -310, -450} /* CG, UG, E, C, E */
01888 , { -310, -650, -510, -310, -450} /* CG, UG, E, C, A */
01889 , { -310, -630, -510, -310, -450} /* CG, UG, E, C, C */
01890 , { -310, -650, -510, -310, -450} /* CG, UG, E, C, G */
01891 , { -310, -630, -510, -310, -450} /* CG, UG, E, C, U */
01892 }
01893 , { { 800, 600, 740, 290, 800} /* CG, UG, E, G, E */
01894 , { -720, -1160, -780, -1470, -720} /* CG, UG, E, G, A */
01895 , { -310, -650, -510, -310, -450} /* CG, UG, E, G, C */
01896 , { 800, 600, 740, 290, 800} /* CG, UG, E, G, G */
01897 , { -310, -650, -510, -310, -450} /* CG, UG, E, G, U */
01898 }
01899 , { { -310, -410, -510, -310, -450} /* CG, UG, E, U, E */
01900 , { -310, -650, -510, -310, -450} /* CG, UG, E, U, A */
01901 , { -310, -630, -510, -310, -450} /* CG, UG, E, U, C */
01902 , { -310, -650, -510, -310, -450} /* CG, UG, E, U, G */
01903 , { -410, -410, -510, -960, -450} /* CG, UG, E, U, U */
01904 }
01905 }

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01906 ,{{{ 740, 600, 740, -640, 740} /* CG,UG,A,E,E */
01907 ,{ 0, -140, 0, -640, 0} /* CG,UG,A,E,A */
01908 ,{ -510, -650, -510, -910, -510} /* CG,UG,A,E,C */
01909 ,{ 740, 600, 740, -1150, 740} /* CG,UG,A,E,G */
01910 ,{ -410, -410, -510, -910, -510} /* CG,UG,A,E,U */
01911 }
01912 ,{{{ 0, -140, 0, -640, 0} /* CG,UG,A,A,E */
01913 ,{ 0, -140, 0, -640, 0} /* CG,UG,A,A,A */
01914 ,{ -510, -650, -510, -1150, -510} /* CG,UG,A,A,C */
01915 ,{ -850, -990, -850, -1490, -850} /* CG,UG,A,A,G */
01916 ,{ -510, -650, -510, -1150, -510} /* CG,UG,A,A,U */
01917 }
01918 ,{{{ -510, -650, -510, -910, -510} /* CG,UG,A,C,E */
01919 ,{ -510, -650, -510, -1150, -510} /* CG,UG,A,C,A */
01920 ,{ -510, -650, -510, -910, -510} /* CG,UG,A,C,C */
01921 ,{ -510, -650, -510, -1150, -510} /* CG,UG,A,C,G */
01922 ,{ -510, -650, -510, -910, -510} /* CG,UG,A,C,U */
01923 }
01924 ,{{{ 740, 600, 740, -1150, 740} /* CG,UG,A,G,E */
01925 ,{ -1020, -1160, -1020, -1660, -1020} /* CG,UG,A,G,A */
01926 ,{ -510, -650, -510, -1150, -510} /* CG,UG,A,G,C */
01927 ,{ 740, 600, 740, -1150, 740} /* CG,UG,A,G,G */
01928 ,{ -510, -650, -510, -1150, -510} /* CG,UG,A,G,U */
01929 }
01930 ,{{{ -410, -410, -510, -910, -510} /* CG,UG,A,U,E */
01931 ,{ -510, -650, -510, -1150, -510} /* CG,UG,A,U,A */
01932 ,{ -510, -650, -510, -910, -510} /* CG,UG,A,U,C */
01933 ,{ -510, -650, -510, -1150, -510} /* CG,UG,A,U,G */
01934 ,{ -410, -410, -510, -1150, -510} /* CG,UG,A,U,U */
01935 }
01936 }
01937 ,{{{ 800, 290, 740, 290, 800} /* CG,UG,C,E,E */
01938 ,{ 50, -450, 0, -450, 50} /* CG,UG,C,E,A */
01939 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,E,C */
01940 ,{ 800, 290, 740, 290, 800} /* CG,UG,C,E,G */
01941 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,E,U */
01942 }
01943 ,{{{ 50, -450, 0, -450, 50} /* CG,UG,C,A,E */
01944 ,{ 50, -450, 0, -450, 50} /* CG,UG,C,A,A */
01945 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,A,C */
01946 ,{ -550, -1300, -610, -1300, -550} /* CG,UG,C,A,G */
01947 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,A,U */
01948 }
01949 ,{{{ -450, -960, -510, -960, -450} /* CG,UG,C,C,E */
01950 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,C,A */
01951 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,C,C */
01952 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,C,G */
01953 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,C,U */
01954 }
01955 ,{{{ 800, 290, 740, 290, 800} /* CG,UG,C,G,E */
01956 ,{ -720, -1470, -780, -1470, -720} /* CG,UG,C,G,A */
01957 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,G,C */
01958 ,{ 800, 290, 740, 290, 800} /* CG,UG,C,G,G */
01959 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,G,U */
01960 }
01961 ,{{{ -450, -960, -510, -960, -450} /* CG,UG,C,U,E */
01962 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,U,A */
01963 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,U,C */
01964 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,U,G */
01965 ,{ -450, -960, -510, -960, -450} /* CG,UG,C,U,U */
01966 }
01967 }
01968 ,{{{ 740, -360, 740, 200, 740} /* CG,UG,G,E,E */
01969 ,{ 200, -360, 0, 200, 0} /* CG,UG,G,E,A */
01970 ,{ -310, -630, -510, -310, -510} /* CG,UG,G,E,C */
01971 ,{ 740, -870, 740, -310, 740} /* CG,UG,G,E,G */
01972 ,{ -310, -630, -510, -310, -510} /* CG,UG,G,E,U */
01973 }
01974 ,{{{ 200, -360, 0, 200, 0} /* CG,UG,G,A,E */
01975 ,{ 200, -360, 0, 200, 0} /* CG,UG,G,A,A */
01976 ,{ -310, -870, -510, -310, -510} /* CG,UG,G,A,C */
01977 ,{ -850, -1210, -850, -1900, -850} /* CG,UG,G,A,G */
01978 ,{ -310, -870, -510, -310, -510} /* CG,UG,G,A,U */
01979 }
01980 ,{{{ -310, -630, -510, -310, -510} /* CG,UG,G,C,E */
01981 ,{ -310, -870, -510, -310, -510} /* CG,UG,G,C,A */
01982 ,{ -310, -630, -510, -310, -510} /* CG,UG,G,C,C */
01983 ,{ -310, -870, -510, -310, -510} /* CG,UG,G,C,G */
01984 ,{ -310, -630, -510, -310, -510} /* CG,UG,G,C,U */
01985 }
01986 ,{{{ 740, -870, 740, -310, 740} /* CG,UG,G,G,E */
01987 ,{ -1020, -1380, -1020, -2070, -1020} /* CG,UG,G,G,A */
01988 ,{ -310, -870, -510, -310, -510} /* CG,UG,G,G,C */
01989 ,{ 740, -870, 740, -1560, 740} /* CG,UG,G,G,G */
01990 ,{ -310, -870, -510, -310, -510} /* CG,UG,G,G,U */
01991 }
01992 ,{{{ -310, -630, -510, -310, -510} /* CG,UG,G,U,E */
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01993      , { -310, -870, -510, -310, -510} /* CG,UG,G,U,A */
01994      , { -310, -630, -510, -310, -510} /* CG,UG,G,U,C */
01995      , { -310, -870, -510, -310, -510} /* CG,UG,G,U,G */
01996      , { -510, -870, -510, -1560, -510} /* CG,UG,G,U,U */
01997      }
01998      }
01999      ,{{{ 690, 290, 690, 290, -550} /* CG,UG,U,E,E */
02000      , { -50, -450, -50, -450, -550} /* CG,UG,U,E,A */
02001      , { -560, -960, -560, -960, -1300} /* CG,UG,U,E,C */
02002      , { 690, 290, 690, 290, -1300} /* CG,UG,U,E,G */
02003      , { -560, -960, -560, -960, -1300} /* CG,UG,U,E,U */
02004      }
02005      ,{{{ -50, -450, -50, -450, -550} /* CG,UG,U,A,E */
02006      , { -50, -450, -50, -450, -550} /* CG,UG,U,A,A */
02007      , { -560, -960, -560, -960, -1300} /* CG,UG,U,A,C */
02008      , { -660, -1300, -660, -1300, -1640} /* CG,UG,U,A,G */
02009      , { -560, -960, -560, -960, -1300} /* CG,UG,U,A,U */
02010      }
02011      ,{{{ -560, -960, -560, -960, -1300} /* CG,UG,U,C,E */
02012      , { -560, -960, -560, -960, -1300} /* CG,UG,U,C,A */
02013      , { -560, -960, -560, -960, -1300} /* CG,UG,U,C,C */
02014      , { -560, -960, -560, -960, -1300} /* CG,UG,U,C,G */
02015      , { -560, -960, -560, -960, -1300} /* CG,UG,U,C,U */
02016      }
02017      ,{{{ 690, 290, 690, 290, -1300} /* CG,UG,U,G,E */
02018      , { -830, -1470, -830, -1470, -1810} /* CG,UG,U,G,A */
02019      , { -560, -960, -560, -960, -1300} /* CG,UG,U,G,C */
02020      , { 690, 290, 690, 290, -1300} /* CG,UG,U,G,G */
02021      , { -560, -960, -560, -960, -1300} /* CG,UG,U,G,U */
02022      }
02023      ,{{{ -560, -960, -560, -960, -1300} /* CG,UG,U,U,E */
02024      , { -560, -960, -560, -960, -1300} /* CG,UG,U,U,A */
02025      , { -560, -960, -560, -960, -1300} /* CG,UG,U,U,C */
02026      , { -560, -960, -560, -960, -1300} /* CG,UG,U,U,G */
02027      , { -560, -960, -560, -960, -1300} /* CG,UG,U,U,U */
02028      }
02029      }
02030      }
02031      ,{{{ 1170, 970, 1120, 780, 1170} /* CG,AU,E,E,E */
02032      , { 780, 440, 580, 780, 640} /* CG,AU,E,E,A */
02033      , { 480, 170, 280, 480, 340} /* CG,AU,E,E,C */
02034      , { 1170, 970, 1120, 660, 1170} /* CG,AU,E,E,G */
02035      , { 480, 170, 280, 480, 340} /* CG,AU,E,E,U */
02036      }
02037      ,{{{ 780, 440, 580, 780, 640} /* CG,AU,E,A,E */
02038      , { 780, 440, 580, 780, 640} /* CG,AU,E,A,A */
02039      , { 470, 130, 270, 470, 330} /* CG,AU,E,A,C */
02040      , { -510, -950, -570, -1260, -510} /* CG,AU,E,A,G */
02041      , { 470, 130, 270, 470, 330} /* CG,AU,E,A,U */
02042      }
02043      ,{{{ 490, 170, 290, 490, 340} /* CG,AU,E,C,E */
02044      , { 490, 140, 290, 490, 340} /* CG,AU,E,C,A */
02045      , { 480, 170, 280, 480, 340} /* CG,AU,E,C,C */
02046      , { 490, 140, 290, 490, 340} /* CG,AU,E,C,G */
02047      , { 480, 170, 280, 480, 340} /* CG,AU,E,C,U */
02048      }
02049      ,{{{ 1170, 970, 1120, 660, 1170} /* CG,AU,E,G,E */
02050      , { -330, -770, -390, -1080, -330} /* CG,AU,E,G,A */
02051      , { 470, 130, 270, 470, 330} /* CG,AU,E,G,C */
02052      , { 1170, 970, 1120, 660, 1170} /* CG,AU,E,G,G */
02053      , { 470, 130, 270, 470, 330} /* CG,AU,E,G,U */
02054      }
02055      ,{{{ 490, 170, 290, 490, 340} /* CG,AU,E,U,E */
02056      , { 490, 140, 290, 490, 340} /* CG,AU,E,U,A */
02057      , { 480, 170, 280, 480, 340} /* CG,AU,E,U,C */
02058      , { 490, 140, 290, 490, 340} /* CG,AU,E,U,G */
02059      , { -600, -600, -690, -1150, -640} /* CG,AU,E,U,U */
02060      }
02061      }
02062      ,{{{ 1120, 970, 1120, -60, 1120} /* CG,AU,A,E,E */
02063      , { 580, 440, 580, -60, 580} /* CG,AU,A,E,A */
02064      , { 280, 140, 280, -120, 280} /* CG,AU,A,E,C */
02065      , { 1120, 970, 1120, -350, 1120} /* CG,AU,A,E,G */
02066      , { 280, 140, 280, -120, 280} /* CG,AU,A,E,U */
02067      }
02068      ,{{{ 580, 440, 580, -60, 580} /* CG,AU,A,A,E */
02069      , { 580, 440, 580, -60, 580} /* CG,AU,A,A,A */
02070      , { 270, 130, 270, -370, 270} /* CG,AU,A,A,C */
02071      , { -800, -950, -800, -1450, -800} /* CG,AU,A,A,G */
02072      , { 270, 130, 270, -370, 270} /* CG,AU,A,A,U */
02073      }
02074      ,{{{ 290, 140, 290, -120, 290} /* CG,AU,A,C,E */
02075      , { 290, 140, 290, -350, 290} /* CG,AU,A,C,A */
02076      , { 280, 140, 280, -120, 280} /* CG,AU,A,C,C */
02077      , { 290, 140, 290, -350, 290} /* CG,AU,A,C,G */
02078      , { 280, 140, 280, -120, 280} /* CG,AU,A,C,U */
02079      }

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02080 ,{{ 1120, 970, 1120, -370, 1120} /* CG,AU,A,G,E */
02081 ,{ -620, -770, -620, -1270, -620} /* CG,AU,A,G,A */
02082 ,{ 270, 130, 270, -370, 270} /* CG,AU,A,G,C */
02083 ,{ 1120, 970, 1120, -780, 1120} /* CG,AU,A,G,G */
02084 ,{ 270, 130, 270, -370, 270} /* CG,AU,A,G,U */
02085 }
02086 ,{{ 290, 140, 290, -120, 290} /* CG,AU,A,U,E */
02087 ,{ 290, 140, 290, -350, 290} /* CG,AU,A,U,A */
02088 ,{ 280, 140, 280, -120, 280} /* CG,AU,A,U,C */
02089 ,{ 290, 140, 290, -350, 290} /* CG,AU,A,U,G */
02090 ,{ -600, -600, -690, -1340, -690} /* CG,AU,A,U,U */
02091 }
02092 }
02093 ,{{{ 1170, 660, 1110, 660, 1170} /* CG,AU,C,E,E */
02094 ,{ 640, 130, 580, 130, 640} /* CG,AU,C,E,A */
02095 ,{ 340, -170, 280, -170, 340} /* CG,AU,C,E,C */
02096 ,{ 1170, 660, 1110, 660, 1170} /* CG,AU,C,E,G */
02097 ,{ 340, -170, 280, -170, 340} /* CG,AU,C,E,U */
02098 }
02099 ,{{ 640, 130, 580, 130, 640} /* CG,AU,C,A,E */
02100 ,{ 640, 130, 580, 130, 640} /* CG,AU,C,A,A */
02101 ,{ 330, -180, 270, -180, 330} /* CG,AU,C,A,C */
02102 ,{ -510, -1260, -570, -1260, -510} /* CG,AU,C,A,G */
02103 ,{ 330, -180, 270, -180, 330} /* CG,AU,C,A,U */
02104 }
02105 ,{{ 340, -160, 280, -160, 340} /* CG,AU,C,C,E */
02106 ,{ 340, -160, 280, -160, 340} /* CG,AU,C,C,A */
02107 ,{ 340, -170, 280, -170, 340} /* CG,AU,C,C,C */
02108 ,{ 340, -160, 280, -160, 340} /* CG,AU,C,C,G */
02109 ,{ 340, -170, 280, -170, 340} /* CG,AU,C,C,U */
02110 }
02111 ,{{{ 1170, 660, 1110, 660, 1170} /* CG,AU,C,G,E */
02112 ,{ -330, -1080, -390, -1080, -330} /* CG,AU,C,G,A */
02113 ,{ 330, -180, 270, -180, 330} /* CG,AU,C,G,C */
02114 ,{ 1170, 660, 1110, 660, 1170} /* CG,AU,C,G,G */
02115 ,{ 330, -180, 270, -180, 330} /* CG,AU,C,G,U */
02116 }
02117 ,{{ 340, -160, 280, -160, 340} /* CG,AU,C,U,E */
02118 ,{ 340, -160, 280, -160, 340} /* CG,AU,C,U,A */
02119 ,{ 340, -170, 280, -170, 340} /* CG,AU,C,U,C */
02120 ,{ 340, -160, 280, -160, 340} /* CG,AU,C,U,G */
02121 ,{ -640, -1150, -700, -1150, -640} /* CG,AU,C,U,U */
02122 }
02123 }
02124 ,{{{ 1120, 220, 1120, 780, 1120} /* CG,AU,G,E,E */
02125 ,{ 780, 220, 580, 780, 580} /* CG,AU,G,E,A */
02126 ,{ 480, 170, 280, 480, 280} /* CG,AU,G,E,C */
02127 ,{ 1120, -70, 1120, 490, 1120} /* CG,AU,G,E,G */
02128 ,{ 480, 170, 280, 480, 280} /* CG,AU,G,E,U */
02129 }
02130 ,{{ 780, 220, 580, 780, 580} /* CG,AU,G,A,E */
02131 ,{ 780, 220, 580, 780, 580} /* CG,AU,G,A,A */
02132 ,{ 470, -80, 270, 470, 270} /* CG,AU,G,A,C */
02133 ,{ -800, -1160, -800, -1860, -800} /* CG,AU,G,A,G */
02134 ,{ 470, -80, 270, 470, 270} /* CG,AU,G,A,U */
02135 }
02136 ,{{ 490, 170, 290, 490, 290} /* CG,AU,G,C,E */
02137 ,{ 490, -70, 290, 490, 290} /* CG,AU,G,C,A */
02138 ,{ 480, 170, 280, 480, 280} /* CG,AU,G,C,C */
02139 ,{ 490, -70, 290, 490, 290} /* CG,AU,G,C,G */
02140 ,{ 480, 170, 280, 480, 280} /* CG,AU,G,C,U */
02141 }
02142 ,{{{ 1120, -80, 1120, 470, 1120} /* CG,AU,G,G,E */
02143 ,{ -620, -980, -620, -1680, -620} /* CG,AU,G,G,A */
02144 ,{ 470, -80, 270, 470, 270} /* CG,AU,G,G,C */
02145 ,{ 1120, -490, 1120, -1190, 1120} /* CG,AU,G,G,G */
02146 ,{ 470, -80, 270, 470, 270} /* CG,AU,G,G,U */
02147 }
02148 ,{{ 490, 170, 290, 490, 290} /* CG,AU,G,U,E */
02149 ,{ 490, -70, 290, 490, 290} /* CG,AU,G,U,A */
02150 ,{ 480, 170, 280, 480, 280} /* CG,AU,G,U,C */
02151 ,{ 490, -70, 290, 490, 290} /* CG,AU,G,U,G */
02152 ,{ -690, -1050, -690, -1750, -690} /* CG,AU,G,U,U */
02153 }
02154 }
02155 ,{{{ 1060, 660, 1060, 660, 40} /* CG,AU,U,E,E */
02156 ,{ 530, 130, 530, 130, 40} /* CG,AU,U,E,A */
02157 ,{ 230, -170, 230, -170, -500} /* CG,AU,U,E,C */
02158 ,{ 1060, 660, 1060, 660, -500} /* CG,AU,U,E,G */
02159 ,{ 230, -170, 230, -170, -500} /* CG,AU,U,E,U */
02160 }
02161 ,{{ 530, 130, 530, 130, 40} /* CG,AU,U,A,E */
02162 ,{ 530, 130, 530, 130, 40} /* CG,AU,U,A,A */
02163 ,{ 220, -180, 220, -180, -510} /* CG,AU,U,A,C */
02164 ,{ -620, -1260, -620, -1260, -1590} /* CG,AU,U,A,G */
02165 ,{ 220, -180, 220, -180, -510} /* CG,AU,U,A,U */
02166 }

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02167 ,{{ 230, -160, 230, -160, -500} /* CG,AU,U,C,E */
02168 ,{ 230, -160, 230, -160, -500} /* CG,AU,U,C,A */
02169 ,{ 230, -170, 230, -170, -500} /* CG,AU,U,C,C */
02170 ,{ 230, -160, 230, -160, -500} /* CG,AU,U,C,G */
02171 ,{ 230, -170, 230, -170, -500} /* CG,AU,U,C,U */
02172 }
02173 ,{{ 1060, 660, 1060, 660, -510} /* CG,AU,U,G,E */
02174 ,{ -440, -1080, -440, -1080, -1410} /* CG,AU,U,G,A */
02175 ,{ 220, -180, 220, -180, -510} /* CG,AU,U,G,C */
02176 ,{ 1060, 660, 1060, 660, -920} /* CG,AU,U,G,G */
02177 ,{ 220, -180, 220, -180, -510} /* CG,AU,U,G,U */
02178 }
02179 ,{{ 230, -160, 230, -160, -500} /* CG,AU,U,U,E */
02180 ,{ 230, -160, 230, -160, -500} /* CG,AU,U,U,A */
02181 ,{ 230, -170, 230, -170, -500} /* CG,AU,U,U,C */
02182 ,{ 230, -160, 230, -160, -500} /* CG,AU,U,U,G */
02183 ,{ -750, -1150, -750, -1150, -1480} /* CG,AU,U,U,U */
02184 }
02185 }
02186 }
02187 ,{{{ 1350, 1160, 1300, 850, 1350} /* CG,UA,E,E,E */
02188 ,{ 850, 500, 650, 850, 700} /* CG,UA,E,E,A */
02189 ,{ 720, 400, 520, 720, 570} /* CG,UA,E,E,C */
02190 ,{ 1350, 1160, 1300, 850, 1350} /* CG,UA,E,E,G */
02191 ,{ 590, 270, 390, 590, 440} /* CG,UA,E,E,U */
02192 }
02193 ,{{ 850, 500, 650, 850, 700} /* CG,UA,E,A,E */
02194 ,{ 850, 500, 650, 850, 700} /* CG,UA,E,A,A */
02195 ,{ 570, 220, 370, 570, 420} /* CG,UA,E,A,C */
02196 ,{ -460, -900, -520, -1210, -460} /* CG,UA,E,A,G */
02197 ,{ 570, 220, 370, 570, 420} /* CG,UA,E,A,U */
02198 }
02199 ,{{{ 720, 400, 520, 720, 570} /* CG,UA,E,C,E */
02200 ,{ 720, 370, 520, 720, 570} /* CG,UA,E,C,A */
02201 ,{ 720, 400, 520, 720, 570} /* CG,UA,E,C,C */
02202 ,{ 720, 370, 520, 720, 570} /* CG,UA,E,C,G */
02203 ,{ 590, 270, 390, 590, 440} /* CG,UA,E,C,U */
02204 }
02205 ,{{{ 1350, 1160, 1300, 850, 1350} /* CG,UA,E,G,E */
02206 ,{ -760, -1200, -820, -1510, -760} /* CG,UA,E,G,A */
02207 ,{ 570, 220, 370, 570, 420} /* CG,UA,E,G,C */
02208 ,{ 1350, 1160, 1300, 850, 1350} /* CG,UA,E,G,G */
02209 ,{ 570, 220, 370, 570, 420} /* CG,UA,E,G,U */
02210 }
02211 ,{{{ 720, 370, 520, 720, 570} /* CG,UA,E,U,E */
02212 ,{ 720, 370, 520, 720, 570} /* CG,UA,E,U,A */
02213 ,{ 280, -40, 80, 280, 130} /* CG,UA,E,U,C */
02214 ,{ 720, 370, 520, 720, 570} /* CG,UA,E,U,G */
02215 ,{ -320, -320, -420, -870, -360} /* CG,UA,E,U,U */
02216 }
02217 }
02218 ,{{{ 1300, 1160, 1300, 120, 1300} /* CG,UA,A,E,E */
02219 ,{ 650, 500, 650, 0, 650} /* CG,UA,A,E,A */
02220 ,{ 520, 370, 520, 120, 520} /* CG,UA,A,E,C */
02221 ,{ 1300, 1160, 1300, -120, 1300} /* CG,UA,A,E,G */
02222 ,{ 390, 240, 390, -10, 390} /* CG,UA,A,E,U */
02223 }
02224 ,{{{ 650, 500, 650, 0, 650} /* CG,UA,A,A,E */
02225 ,{ 650, 500, 650, 0, 650} /* CG,UA,A,A,A */
02226 ,{ 370, 220, 370, -270, 370} /* CG,UA,A,A,C */
02227 ,{ -750, -900, -750, -1400, -750} /* CG,UA,A,A,G */
02228 ,{ 370, 220, 370, -270, 370} /* CG,UA,A,A,U */
02229 }
02230 ,{{{ 520, 370, 520, 120, 520} /* CG,UA,A,C,E */
02231 ,{ 520, 370, 520, -120, 520} /* CG,UA,A,C,A */
02232 ,{ 520, 370, 520, 120, 520} /* CG,UA,A,C,C */
02233 ,{ 520, 370, 520, -120, 520} /* CG,UA,A,C,G */
02234 ,{ 390, 240, 390, -10, 390} /* CG,UA,A,C,U */
02235 }
02236 ,{{{ 1300, 1160, 1300, -270, 1300} /* CG,UA,A,G,E */
02237 ,{ -1050, -1200, -1050, -1700, -1050} /* CG,UA,A,G,A */
02238 ,{ 370, 220, 370, -270, 370} /* CG,UA,A,G,C */
02239 ,{ 1300, 1160, 1300, -590, 1300} /* CG,UA,A,G,G */
02240 ,{ 370, 220, 370, -270, 370} /* CG,UA,A,G,U */
02241 }
02242 ,{{{ 520, 370, 520, -120, 520} /* CG,UA,A,U,E */
02243 ,{ 520, 370, 520, -120, 520} /* CG,UA,A,U,A */
02244 ,{ 80, -60, 80, -320, 80} /* CG,UA,A,U,C */
02245 ,{ 520, 370, 520, -120, 520} /* CG,UA,A,U,G */
02246 ,{ -320, -320, -420, -1060, -420} /* CG,UA,A,U,U */
02247 }
02248 }
02249 ,{{{ 1350, 850, 1290, 850, 1350} /* CG,UA,C,E,E */
02250 ,{ 700, 190, 640, 190, 700} /* CG,UA,C,E,A */
02251 ,{ 570, 60, 510, 60, 570} /* CG,UA,C,E,C */
02252 ,{ 1350, 850, 1290, 850, 1350} /* CG,UA,C,E,G */
02253 ,{ 440, -60, 380, -60, 440} /* CG,UA,C,E,U */

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02254      }
02255      ,{{      700,      190,      640,      190,      700} /* CG,UA,C,A,E */
02256      ,{{      700,      190,      640,      190,      700} /* CG,UA,C,A,A */
02257      ,{{      420,      -80,      360,      -80,      420} /* CG,UA,C,A,C */
02258      ,{{     -460,     -1210,     -520,     -1210,     -460} /* CG,UA,C,A,G */
02259      ,{{      420,      -80,      360,      -80,      420} /* CG,UA,C,A,U */
02260      }
02261      ,{{      570,      60,      510,      60,      570} /* CG,UA,C,C,E */
02262      ,{{      570,      60,      510,      60,      570} /* CG,UA,C,C,A */
02263      ,{{      570,      60,      510,      60,      570} /* CG,UA,C,C,C */
02264      ,{{      570,      60,      510,      60,      570} /* CG,UA,C,C,G */
02265      ,{{      440,      -60,      380,      -60,      440} /* CG,UA,C,C,U */
02266      }
02267      ,{{     1350,      850,     1290,      850,     1350} /* CG,UA,C,G,E */
02268      ,{{     -760,     -1510,     -820,     -1510,     -760} /* CG,UA,C,G,A */
02269      ,{{      420,      -80,      360,      -80,      420} /* CG,UA,C,G,C */
02270      ,{{     1350,      850,     1290,      850,     1350} /* CG,UA,C,G,G */
02271      ,{{      420,      -80,      360,      -80,      420} /* CG,UA,C,G,U */
02272      }
02273      ,{{      570,      60,      510,      60,      570} /* CG,UA,C,U,E */
02274      ,{{      570,      60,      510,      60,      570} /* CG,UA,C,U,A */
02275      ,{{      130,     -370,       70,     -370,      130} /* CG,UA,C,U,C */
02276      ,{{      570,      60,      510,      60,      570} /* CG,UA,C,U,G */
02277      ,{{     -360,     -870,     -420,     -870,     -360} /* CG,UA,C,U,U */
02278      }
02279      }
02280      ,{{{     1300,      400,     1300,      850,     1300} /* CG,UA,G,E,E */
02281      ,{{      850,      290,      650,      850,      650} /* CG,UA,G,E,A */
02282      ,{{      720,      400,      520,      720,      520} /* CG,UA,G,E,C */
02283      ,{{     1300,      160,     1300,      720,     1300} /* CG,UA,G,E,G */
02284      ,{{      590,      270,      390,      590,      390} /* CG,UA,G,E,U */
02285      }
02286      ,{{{      850,      290,      650,      850,      650} /* CG,UA,G,A,E */
02287      ,{{      850,      290,      650,      850,      650} /* CG,UA,G,A,A */
02288      ,{{      570,       10,      370,      570,      370} /* CG,UA,G,A,C */
02289      ,{{     -750,     -1110,     -750,     -1810,     -750} /* CG,UA,G,A,G */
02290      ,{{      570,       10,      370,      570,      370} /* CG,UA,G,A,U */
02291      }
02292      ,{{{      720,      400,      520,      720,      520} /* CG,UA,G,C,E */
02293      ,{{      720,      160,      520,      720,      520} /* CG,UA,G,C,A */
02294      ,{{      720,      400,      520,      720,      520} /* CG,UA,G,C,C */
02295      ,{{      720,      160,      520,      720,      520} /* CG,UA,G,C,G */
02296      ,{{      590,      270,      390,      590,      390} /* CG,UA,G,C,U */
02297      }
02298      ,{{{     1300,       10,     1300,      570,     1300} /* CG,UA,G,G,E */
02299      ,{{    -1050,    -1410,    -1050,    -2110,    -1050} /* CG,UA,G,G,A */
02300      ,{{      570,       10,      370,      570,      370} /* CG,UA,G,G,C */
02301      ,{{     1300,     -310,     1300,    -1000,     1300} /* CG,UA,G,G,G */
02302      ,{{      570,       10,      370,      570,      370} /* CG,UA,G,G,U */
02303      }
02304      ,{{{      720,      160,      520,      720,      520} /* CG,UA,G,U,E */
02305      ,{{      720,      160,      520,      720,      520} /* CG,UA,G,U,A */
02306      ,{{      280,     -40,       80,      280,       80} /* CG,UA,G,U,C */
02307      ,{{      720,      160,      520,      720,      520} /* CG,UA,G,U,G */
02308      ,{{     -420,     -780,     -420,    -1470,     -420} /* CG,UA,G,U,U */
02309      }
02310      }
02311      ,{{{     1250,      850,     1250,      850,      100} /* CG,UA,U,E,E */
02312      ,{{      590,      190,      590,      190,      100} /* CG,UA,U,E,A */
02313      ,{{      460,       60,      460,       60,     -270} /* CG,UA,U,E,C */
02314      ,{{     1250,      850,     1250,      850,     -270} /* CG,UA,U,E,G */
02315      ,{{      330,     -60,      330,     -60,     -400} /* CG,UA,U,E,U */
02316      }
02317      ,{{{      590,      190,      590,      190,      100} /* CG,UA,U,A,E */
02318      ,{{      590,      190,      590,      190,      100} /* CG,UA,U,A,A */
02319      ,{{      310,     -80,      310,     -80,     -420} /* CG,UA,U,A,C */
02320      ,{{     -570,    -1210,     -570,    -1210,    -1540} /* CG,UA,U,A,G */
02321      ,{{      310,     -80,      310,     -80,     -420} /* CG,UA,U,A,U */
02322      }
02323      ,{{{      460,       60,      460,       60,     -270} /* CG,UA,U,C,E */
02324      ,{{      460,       60,      460,       60,     -270} /* CG,UA,U,C,A */
02325      ,{{      460,       60,      460,       60,     -270} /* CG,UA,U,C,C */
02326      ,{{      460,       60,      460,       60,     -270} /* CG,UA,U,C,G */
02327      ,{{      330,     -60,      330,     -60,     -400} /* CG,UA,U,C,U */
02328      }
02329      ,{{{     1250,      850,     1250,      850,     -420} /* CG,UA,U,G,E */
02330      ,{{     -870,    -1510,     -870,    -1840,    -1510} /* CG,UA,U,G,A */
02331      ,{{      310,     -80,      310,     -80,     -420} /* CG,UA,U,G,C */
02332      ,{{     1250,      850,     1250,      850,     -740} /* CG,UA,U,G,G */
02333      ,{{      310,     -80,      310,     -80,     -420} /* CG,UA,U,G,U */
02334      }
02335      ,{{{      460,       60,      460,       60,     -270} /* CG,UA,U,U,E */
02336      ,{{      460,       60,      460,       60,     -270} /* CG,UA,U,U,A */
02337      ,{{       20,    -370,       20,    -370,     -710} /* CG,UA,U,U,C */
02338      ,{{      460,       60,      460,       60,     -270} /* CG,UA,U,U,G */
02339      ,{{     -470,     -870,     -470,     -870,    -1210} /* CG,UA,U,U,U */
02340      }

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02341     }
02342     }
02343     ,{{{ 1350, 1160, 1300, 850, 1350} /* CG,NN,E,E,E */
02344     ,{ 850, 500, 650, 850, 700} /* CG,NN,E,E,A */
02345     ,{ 720, 400, 520, 720, 570} /* CG,NN,E,E,C */
02346     ,{ 1350, 1160, 1300, 850, 1350} /* CG,NN,E,E,G */
02347     ,{ 590, 270, 390, 590, 440} /* CG,NN,E,E,U */
02348     }
02349     ,{{{ 850, 500, 650, 850, 700} /* CG,NN,E,A,E */
02350     ,{ 850, 500, 650, 850, 700} /* CG,NN,E,A,A */
02351     ,{ 570, 220, 370, 570, 420} /* CG,NN,E,A,C */
02352     ,{ -230, -670, -290, -980, -230} /* CG,NN,E,A,G */
02353     ,{ 570, 220, 370, 570, 420} /* CG,NN,E,A,U */
02354     }
02355     ,{{{ 720, 400, 520, 720, 570} /* CG,NN,E,C,E */
02356     ,{ 720, 370, 520, 720, 570} /* CG,NN,E,C,A */
02357     ,{ 720, 400, 520, 720, 570} /* CG,NN,E,C,C */
02358     ,{ 720, 370, 520, 720, 570} /* CG,NN,E,C,G */
02359     ,{ 590, 270, 390, 590, 440} /* CG,NN,E,C,U */
02360     }
02361     ,{{{ 1350, 1160, 1300, 850, 1350} /* CG,NN,E,G,E */
02362     ,{ -330, -770, -390, -1080, -330} /* CG,NN,E,G,A */
02363     ,{ 570, 220, 370, 570, 420} /* CG,NN,E,G,C */
02364     ,{ 1350, 1160, 1300, 850, 1350} /* CG,NN,E,G,G */
02365     ,{ 570, 220, 370, 570, 420} /* CG,NN,E,G,U */
02366     }
02367     ,{{{ 720, 370, 520, 720, 570} /* CG,NN,E,U,E */
02368     ,{ 720, 370, 520, 720, 570} /* CG,NN,E,U,A */
02369     ,{ 480, 170, 280, 480, 340} /* CG,NN,E,U,C */
02370     ,{ 720, 370, 520, 720, 570} /* CG,NN,E,U,G */
02371     ,{ -90, -320, -90, -810, -360} /* CG,NN,E,U,U */
02372     }
02373     }
02374     ,{{{ 1300, 1160, 1300, 540, 1300} /* CG,NN,A,E,E */
02375     ,{ 650, 500, 650, 10, 650} /* CG,NN,A,E,A */
02376     ,{ 540, 370, 520, 540, 520} /* CG,NN,A,E,C */
02377     ,{ 1300, 1160, 1300, -120, 1300} /* CG,NN,A,E,G */
02378     ,{ 390, 240, 390, -10, 390} /* CG,NN,A,E,U */
02379     }
02380     ,{{{ 650, 500, 650, 0, 650} /* CG,NN,A,A,E */
02381     ,{ 650, 500, 650, 0, 650} /* CG,NN,A,A,A */
02382     ,{ 370, 220, 370, -100, 370} /* CG,NN,A,A,C */
02383     ,{ -530, -670, -530, -1170, -530} /* CG,NN,A,A,G */
02384     ,{ 370, 220, 370, -270, 370} /* CG,NN,A,A,U */
02385     }
02386     ,{{{ 540, 370, 520, 540, 520} /* CG,NN,A,C,E */
02387     ,{ 520, 370, 520, 10, 520} /* CG,NN,A,C,A */
02388     ,{ 540, 370, 520, 540, 520} /* CG,NN,A,C,C */
02389     ,{ 520, 370, 520, -120, 520} /* CG,NN,A,C,G */
02390     ,{ 390, 240, 390, -10, 390} /* CG,NN,A,C,U */
02391     }
02392     ,{{{ 1300, 1160, 1300, -270, 1300} /* CG,NN,A,G,E */
02393     ,{ -620, -770, -620, -1270, -620} /* CG,NN,A,G,A */
02394     ,{ 370, 220, 370, -270, 370} /* CG,NN,A,G,C */
02395     ,{ 1300, 1160, 1300, -590, 1300} /* CG,NN,A,G,G */
02396     ,{ 370, 220, 370, -270, 370} /* CG,NN,A,G,U */
02397     }
02398     ,{{{ 520, 370, 520, -120, 520} /* CG,NN,A,U,E */
02399     ,{ 520, 370, 520, -120, 520} /* CG,NN,A,U,A */
02400     ,{ 280, 140, 280, -120, 280} /* CG,NN,A,U,C */
02401     ,{ 520, 370, 520, -120, 520} /* CG,NN,A,U,G */
02402     ,{ -90, -320, -90, -810, -420} /* CG,NN,A,U,U */
02403     }
02404     }
02405     ,{{{ 1350, 850, 1290, 850, 1350} /* CG,NN,C,E,E */
02406     ,{ 700, 190, 640, 190, 700} /* CG,NN,C,E,A */
02407     ,{ 570, 60, 510, 60, 570} /* CG,NN,C,E,C */
02408     ,{ 1350, 850, 1290, 850, 1350} /* CG,NN,C,E,G */
02409     ,{ 440, -60, 380, -60, 440} /* CG,NN,C,E,U */
02410     }
02411     ,{{{ 700, 190, 640, 190, 700} /* CG,NN,C,A,E */
02412     ,{ 700, 190, 640, 190, 700} /* CG,NN,C,A,A */
02413     ,{ 420, -80, 360, -80, 420} /* CG,NN,C,A,C */
02414     ,{ -230, -980, -290, -980, -230} /* CG,NN,C,A,G */
02415     ,{ 420, -80, 360, -80, 420} /* CG,NN,C,A,U */
02416     }
02417     ,{{{ 570, 60, 510, 60, 570} /* CG,NN,C,C,E */
02418     ,{ 570, 60, 510, 60, 570} /* CG,NN,C,C,A */
02419     ,{ 570, 60, 510, 60, 570} /* CG,NN,C,C,C */
02420     ,{ 570, 60, 510, 60, 570} /* CG,NN,C,C,G */
02421     ,{ 440, -60, 380, -60, 440} /* CG,NN,C,C,U */
02422     }
02423     ,{{{ 1350, 850, 1290, 850, 1350} /* CG,NN,C,G,E */
02424     ,{ -330, -1070, -390, -1080, -330} /* CG,NN,C,G,A */
02425     ,{ 420, -80, 360, -80, 420} /* CG,NN,C,G,C */
02426     ,{ 1350, 850, 1290, 850, 1350} /* CG,NN,C,G,G */
02427     ,{ 420, -80, 360, -80, 420} /* CG,NN,C,G,U */

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02428     }
02429     ,{{      570,      60,      510,      60,      570} /* CG,NN,C,U,E */
02430     ,{{      570,      60,      510,      60,      570} /* CG,NN,C,U,A */
02431     ,{{      340,     -170,      280,     -170,      340} /* CG,NN,C,U,C */
02432     ,{{      570,      60,      510,      60,      570} /* CG,NN,C,U,G */
02433     ,{{     -360,     -830,     -420,     -870,     -360} /* CG,NN,C,U,U */
02434     }
02435     }
02436     ,{{{      1300,      400,      1300,      850,      1300} /* CG,NN,G,E,E */
02437     ,{{      850,      290,      650,      850,      650} /* CG,NN,G,E,A */
02438     ,{{      720,      400,      520,      720,      520} /* CG,NN,G,E,C */
02439     ,{{      1300,      160,      1300,      720,      1300} /* CG,NN,G,E,G */
02440     ,{{      590,      270,      390,      590,      390} /* CG,NN,G,E,U */
02441     }
02442     ,{{      850,      290,      650,      850,      650} /* CG,NN,G,A,E */
02443     ,{{      850,      290,      650,      850,      650} /* CG,NN,G,A,A */
02444     ,{{      570,       10,      370,      570,      370} /* CG,NN,G,A,C */
02445     ,{{     -530,     -890,     -530,    -1580,     -530} /* CG,NN,G,A,G */
02446     ,{{      570,       10,      370,      570,      370} /* CG,NN,G,A,U */
02447     }
02448     ,{{{      720,      400,      520,      720,      520} /* CG,NN,G,C,E */
02449     ,{{      720,      160,      520,      720,      520} /* CG,NN,G,C,A */
02450     ,{{      720,      400,      520,      720,      520} /* CG,NN,G,C,C */
02451     ,{{      720,      160,      520,      720,      520} /* CG,NN,G,C,G */
02452     ,{{      590,      270,      390,      590,      390} /* CG,NN,G,C,U */
02453     }
02454     ,{{{      1300,       10,      1300,      570,      1300} /* CG,NN,G,G,E */
02455     ,{{     -620,     -980,     -620,    -1080,     -620} /* CG,NN,G,G,A */
02456     ,{{      570,       10,      370,      570,      370} /* CG,NN,G,G,C */
02457     ,{{      1300,     -310,      1300,    -1000,      1300} /* CG,NN,G,G,G */
02458     ,{{      570,       10,      370,      570,      370} /* CG,NN,G,G,U */
02459     }
02460     ,{{{      720,      170,      520,      720,      520} /* CG,NN,G,U,E */
02461     ,{{      720,      160,      520,      720,      520} /* CG,NN,G,U,A */
02462     ,{{      480,      170,      280,      480,      280} /* CG,NN,G,U,C */
02463     ,{{      720,      160,      520,      720,      520} /* CG,NN,G,U,G */
02464     ,{{     -420,     -780,     -420,    -1470,     -420} /* CG,NN,G,U,U */
02465     }
02466     }
02467     ,{{{      1250,      850,      1250,      850,      100} /* CG,NN,U,E,E */
02468     ,{{      590,      190,      590,      190,      100} /* CG,NN,U,E,A */
02469     ,{{      460,       60,      460,       60,     -270} /* CG,NN,U,E,C */
02470     ,{{      1250,      850,      1250,      850,     -230} /* CG,NN,U,E,G */
02471     ,{{      330,     -60,      330,     -60,     -400} /* CG,NN,U,E,U */
02472     }
02473     ,{{{      590,      190,      590,      190,      100} /* CG,NN,U,A,E */
02474     ,{{      590,      190,      590,      190,      100} /* CG,NN,U,A,A */
02475     ,{{      310,     -80,      310,     -80,     -420} /* CG,NN,U,A,C */
02476     ,{{     -340,     -980,     -340,     -980,    -1320} /* CG,NN,U,A,G */
02477     ,{{      310,     -80,      310,     -80,     -420} /* CG,NN,U,A,U */
02478     }
02479     ,{{{      460,       60,      460,       60,     -270} /* CG,NN,U,C,E */
02480     ,{{      460,       60,      460,       60,     -270} /* CG,NN,U,C,A */
02481     ,{{      460,       60,      460,       60,     -270} /* CG,NN,U,C,C */
02482     ,{{      460,       60,      460,       60,     -270} /* CG,NN,U,C,G */
02483     ,{{      330,     -60,      330,     -60,     -400} /* CG,NN,U,C,U */
02484     }
02485     ,{{{      1250,      850,      1250,      850,     -230} /* CG,NN,U,G,E */
02486     ,{{     -440,    -1080,     -440,    -1080,    -1300} /* CG,NN,U,G,A */
02487     ,{{      310,     -80,      310,     -80,     -420} /* CG,NN,U,G,C */
02488     ,{{      1250,      850,      1250,      850,     -230} /* CG,NN,U,G,G */
02489     ,{{      310,     -80,      310,     -80,     -420} /* CG,NN,U,G,U */
02490     }
02491     ,{{{      460,       60,      460,       60,     -270} /* CG,NN,U,U,E */
02492     ,{{      460,       60,      460,       60,     -270} /* CG,NN,U,U,A */
02493     ,{{      230,     -170,      230,     -170,     -500} /* CG,NN,U,U,C */
02494     ,{{      460,       60,      460,       60,     -270} /* CG,NN,U,U,G */
02495     ,{{     -470,     -870,     -470,     -870,    -1210} /* CG,NN,U,U,U */
02496     }
02497     }
02498     }
02499     }
02500     ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,E,E */
02501     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,E,A */
02502     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,E,C */
02503     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,E,G */
02504     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,E,U */
02505     }
02506     ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,A,E */
02507     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,A,A */
02508     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,A,C */
02509     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,A,G */
02510     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,A,U */
02511     }
02512     ,{{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,C,E */
02513     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,C,A */
02514     ,{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,E,C,C */
```

```

02515      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, C, G */
02516      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, C, U */
02517      }
02518      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, G, E */
02519      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, G, A */
02520      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, G, C */
02521      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, G, G */
02522      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, G, U */
02523      }
02524      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, U, E */
02525      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, U, A */
02526      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, U, C */
02527      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, U, G */
02528      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, U, U */
02529      }
02530      }
02531      , { { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, E */
02532      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, A */
02533      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, C */
02534      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, G */
02535      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, U */
02536      }
02537      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, E */
02538      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, A */
02539      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, C */
02540      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, G */
02541      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, U */
02542      }
02543      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, E */
02544      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, A */
02545      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, C */
02546      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, G */
02547      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, U */
02548      }
02549      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, E */
02550      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, A */
02551      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, C */
02552      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, G */
02553      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, U */
02554      }
02555      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, U, E */
02556      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, U, A */
02557      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, U, C */
02558      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, U, G */
02559      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, U, U */
02560      }
02561      }
02562      , { { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, E */
02563      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, A */
02564      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, C */
02565      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, G */
02566      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, U */
02567      }
02568      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, E */
02569      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, A */
02570      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, C */
02571      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, G */
02572      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, U */
02573      }
02574      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, E */
02575      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, A */
02576      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, C */
02577      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, G */
02578      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, U */
02579      }
02580      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, G, E */
02581      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, G, A */
02582      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, G, C */
02583      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, G, G */
02584      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, G, U */
02585      }
02586      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, U, E */
02587      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, U, A */
02588      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, U, C */
02589      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, U, G */
02590      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, U, U */
02591      }
02592      }
02593      , { { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, E, E */
02594      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, E, A */
02595      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, E, C */
02596      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, E, G */
02597      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, E, U */
02598      }
02599      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, A, E */
02600      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, A, A */
02601      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, A, C */

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02602      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, A, G */
02603      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, A, U */
02604      }
02605      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, E */
02606      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, A */
02607      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, C */
02608      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, G */
02609      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, U */
02610      }
02611      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, G, E */
02612      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, G, A */
02613      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, G, C */
02614      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, G, G */
02615      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, G, U */
02616      }
02617      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, U, E */
02618      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, U, A */
02619      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, U, C */
02620      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, U, G */
02621      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, U, U */
02622      }
02623      }
02624      , { { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, E, E */
02625      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, E, A */
02626      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, E, C */
02627      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, E, G */
02628      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, E, U */
02629      }
02630      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, A, E */
02631      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, A, A */
02632      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, A, C */
02633      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, A, G */
02634      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, A, U */
02635      }
02636      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, C, E */
02637      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, C, A */
02638      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, C, C */
02639      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, C, G */
02640      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, C, U */
02641      }
02642      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, G, E */
02643      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, G, A */
02644      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, G, C */
02645      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, G, G */
02646      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, G, U */
02647      }
02648      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, U, E */
02649      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, U, A */
02650      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, U, C */
02651      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, U, G */
02652      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, U, U, U */
02653      }
02654      }
02655      }
02656      , { { { {      540,      -90,      540,      180,      -90} /* GC, CG, E, E, E */
02657      , {      540,      -100,      540,      180,      -90} /* GC, CG, E, E, A */
02658      , {      180,      -90,      -460,      180,      -460} /* GC, CG, E, E, C */
02659      , {      30,      -150,      -260,      30,      -210} /* GC, CG, E, E, G */
02660      , {      -200,      -200,      -400,      -230,      -570} /* GC, CG, E, E, U */
02661      }
02662      , { {      180,      -350,      -660,      180,      -660} /* GC, CG, E, A, E */
02663      , {      180,      -580,      -660,      180,      -660} /* GC, CG, E, A, A */
02664      , {      -430,      -600,      -970,      -430,      -830} /* GC, CG, E, A, C */
02665      , {      -350,      -350,      -870,      -960,      -870} /* GC, CG, E, A, G */
02666      , {      -430,      -600,      -970,      -430,      -970} /* GC, CG, E, A, U */
02667      }
02668      , { {      30,      -150,      -510,      30,      -90} /* GC, CG, E, C, E */
02669      , {      -90,      -220,      -510,      -390,      -90} /* GC, CG, E, C, A */
02670      , {      20,      -600,      -520,      20,      -520} /* GC, CG, E, C, C */
02671      , {      30,      -150,      -510,      30,      -510} /* GC, CG, E, C, G */
02672      , {      -200,      -200,      -570,      -650,      -570} /* GC, CG, E, C, U */
02673      }
02674      , { {      540,      -100,      540,      -400,      -210} /* GC, CG, E, G, E */
02675      , {      540,      -100,      540,      -1240,      -810} /* GC, CG, E, G, A */
02676      , {      -430,      -600,      -970,      -430,      -970} /* GC, CG, E, G, C */
02677      , {      -200,      -200,      -260,      -400,      -210} /* GC, CG, E, G, G */
02678      , {      -430,      -600,      -970,      -430,      -970} /* GC, CG, E, G, U */
02679      }
02680      , { {      180,      -90,      -400,      180,      -460} /* GC, CG, E, U, E */
02681      , {      30,      -150,      -510,      30,      -510} /* GC, CG, E, U, A */
02682      , {      180,      -90,      -460,      180,      -460} /* GC, CG, E, U, C */
02683      , {      30,      -150,      -510,      30,      -510} /* GC, CG, E, U, G */
02684      , {      -230,      -1390,      -400,      -230,      -1300} /* GC, CG, E, U, U */
02685      }
02686      }
02687      , { { {      10,      -90,      10,      -500,      -320} /* GC, CG, A, E, E */
02688      , {      10,      -150,      10,      -860,      -510} /* GC, CG, A, E, A */

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02689 , { -90, -90, -460, -500, -460} /* GC,CG,A,E,C */
02690 , { -150, -150, -320, -860, -320} /* GC,CG,A,E,G */
02691 , { -200, -200, -400, -1300, -570} /* GC,CG,A,E,U */
02692 }
02693 , { { -580, -580, -660, -1070, -660} /* GC,CG,A,A,E */
02694 , { -580, -580, -660, -1340, -660} /* GC,CG,A,A,A */
02695 , { -600, -600, -970, -1070, -970} /* GC,CG,A,A,C */
02696 , { -870, -1600, -1110, -1880, -870} /* GC,CG,A,A,G */
02697 , { -600, -600, -970, -1320, -970} /* GC,CG,A,A,U */
02698 }
02699 , { { -150, -150, -510, -500, -510} /* GC,CG,A,C,E */
02700 , { -220, -220, -1150, -860, -510} /* GC,CG,A,C,A */
02701 , { -500, -1070, -750, -500, -520} /* GC,CG,A,C,C */
02702 , { -150, -150, -510, -860, -510} /* GC,CG,A,C,G */
02703 , { -200, -200, -570, -1750, -570} /* GC,CG,A,C,U */
02704 }
02705 , { { 10, -200, 10, -1080, -320} /* GC,CG,A,G,E */
02706 , { 10, -970, 10, -2450, -1160} /* GC,CG,A,G,A */
02707 , { -600, -600, -970, -1320, -970} /* GC,CG,A,G,C */
02708 , { -200, -200, -320, -1080, -320} /* GC,CG,A,G,G */
02709 , { -600, -600, -970, -1320, -970} /* GC,CG,A,G,U */
02710 }
02711 , { { -90, -90, -400, -570, -460} /* GC,CG,A,U,E */
02712 , { -150, -150, -510, -860, -510} /* GC,CG,A,U,A */
02713 , { -90, -90, -460, -570, -460} /* GC,CG,A,U,C */
02714 , { -150, -150, -510, -860, -510} /* GC,CG,A,U,G */
02715 , { -400, -1490, -400, -1300, -1300} /* GC,CG,A,U,U */
02716 }
02717 }
02718 , { { { 540, -100, 540, -400, -210} /* GC,CG,C,E,E */
02719 , { 540, -100, 540, -600, -1130} /* GC,CG,C,E,A */
02720 , { -540, -540, -760, -540, -1070} /* GC,CG,C,E,C */
02721 , { -210, -350, -620, -400, -210} /* GC,CG,C,E,G */
02722 , { -650, -650, -870, -650, -1180} /* GC,CG,C,E,U */
02723 }
02724 , { { -350, -350, -940, -740, -1250} /* GC,CG,C,A,E */
02725 , { -740, -740, -960, -740, -1270} /* GC,CG,C,A,A */
02726 , { -1050, -1050, -1270, -1050, -1580} /* GC,CG,C,A,C */
02727 , { -350, -350, -940, -960, -1250} /* GC,CG,C,A,G */
02728 , { -1050, -1050, -1270, -1050, -1580} /* GC,CG,C,A,U */
02729 }
02730 , { { -600, -600, -820, -600, -1130} /* GC,CG,C,C,E */
02731 , { -600, -600, -820, -600, -1130} /* GC,CG,C,C,A */
02732 , { -600, -600, -820, -600, -1130} /* GC,CG,C,C,C */
02733 , { -600, -600, -820, -600, -1130} /* GC,CG,C,C,G */
02734 , { -650, -650, -870, -650, -1180} /* GC,CG,C,C,U */
02735 }
02736 , { { { 540, -100, 540, -400, -210} /* GC,CG,C,G,E */
02737 , { 540, -100, 540, -1240, -1530} /* GC,CG,C,G,A */
02738 , { -1050, -1050, -1270, -1050, -1580} /* GC,CG,C,G,C */
02739 , { -210, -440, -620, -400, -210} /* GC,CG,C,G,G */
02740 , { -1050, -1050, -1270, -1050, -1580} /* GC,CG,C,G,U */
02741 }
02742 , { { -540, -540, -760, -540, -1070} /* GC,CG,C,U,E */
02743 , { -600, -600, -820, -600, -1130} /* GC,CG,C,U,A */
02744 , { -540, -540, -760, -540, -1070} /* GC,CG,C,U,C */
02745 , { -600, -600, -820, -600, -1130} /* GC,CG,C,U,G */
02746 , { -1390, -1390, -1610, -1390, -1920} /* GC,CG,C,U,U */
02747 }
02748 }
02749 , { { { 180, -630, -320, 180, -320} /* GC,CG,G,E,E */
02750 , { 180, -1340, -510, 180, -510} /* GC,CG,G,E,A */
02751 , { 180, -630, -460, 180, -460} /* GC,CG,G,E,C */
02752 , { 30, -1340, -320, 30, -320} /* GC,CG,G,E,G */
02753 , { -230, -1150, -570, -230, -570} /* GC,CG,G,E,U */
02754 }
02755 , { { 180, -1790, -660, 180, -660} /* GC,CG,G,A,E */
02756 , { 180, -2010, -660, 180, -660} /* GC,CG,G,A,A */
02757 , { -430, -1790, -970, -430, -970} /* GC,CG,G,A,C */
02758 , { -870, -3070, -870, -1370, -870} /* GC,CG,G,A,G */
02759 , { -430, -1790, -970, -430, -970} /* GC,CG,G,A,U */
02760 }
02761 , { { 30, -630, -510, 30, -510} /* GC,CG,G,C,E */
02762 , { -390, -1650, -510, -390, -510} /* GC,CG,G,C,A */
02763 , { 20, -630, -520, 20, -520} /* GC,CG,G,C,C */
02764 , { 30, -1340, -510, 30, -510} /* GC,CG,G,C,G */
02765 , { -570, -1150, -570, -880, -570} /* GC,CG,G,C,U */
02766 }
02767 , { { -320, -1790, -320, -430, -320} /* GC,CG,G,G,E */
02768 , { -1160, -1980, -1160, -1870, -1160} /* GC,CG,G,G,A */
02769 , { -430, -1790, -970, -430, -970} /* GC,CG,G,G,C */
02770 , { -320, -2390, -320, -2280, -320} /* GC,CG,G,G,G */
02771 , { -430, -1790, -970, -430, -970} /* GC,CG,G,G,U */
02772 }
02773 , { { 180, -1040, -460, 180, -460} /* GC,CG,G,U,E */
02774 , { 30, -1340, -510, 30, -510} /* GC,CG,G,U,A */
02775 , { 180, -1040, -460, 180, -460} /* GC,CG,G,U,C */

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02776 , { 30, -1340, -510, 30, -510} /* GC,CG,G,U,G */
02777 , { -230, -1520, -1300, -230, -1300} /* GC,CG,G,U,U */
02778 }
02779 }
02780 , {{{ -90, -400, -260, -400, -90} /* GC,CG,U,E,E */
02781 , { -90, -600, -820, -600, -90} /* GC,CG,U,E,A */
02782 , { -540, -540, -550, -540, -830} /* GC,CG,U,E,C */
02783 , { -260, -400, -260, -400, -800} /* GC,CG,U,E,G */
02784 , { -650, -650, -870, -650, -860} /* GC,CG,U,E,U */
02785 }
02786 , {{{ -740, -740, -940, -740, -830} /* GC,CG,U,A,E */
02787 , { -740, -740, -960, -740, -1240} /* GC,CG,U,A,A */
02788 , { -830, -1050, -1270, -1050, -830} /* GC,CG,U,A,C */
02789 , { -940, -960, -940, -960, -1360} /* GC,CG,U,A,G */
02790 , { -1050, -1050, -1270, -1050, -1260} /* GC,CG,U,A,U */
02791 }
02792 , {{{ -90, -600, -820, -600, -90} /* GC,CG,U,C,E */
02793 , { -90, -600, -820, -600, -90} /* GC,CG,U,C,A */
02794 , { -600, -600, -820, -600, -1710} /* GC,CG,U,C,C */
02795 , { -600, -600, -820, -600, -800} /* GC,CG,U,C,G */
02796 , { -650, -650, -870, -650, -860} /* GC,CG,U,C,U */
02797 }
02798 , {{{ -260, -400, -260, -400, -810} /* GC,CG,U,G,E */
02799 , { -810, -1240, -1220, -1240, -810} /* GC,CG,U,G,A */
02800 , { -1050, -1050, -1270, -1050, -1260} /* GC,CG,U,G,C */
02801 , { -260, -400, -260, -400, -1550} /* GC,CG,U,G,G */
02802 , { -1050, -1050, -1270, -1050, -1260} /* GC,CG,U,G,U */
02803 }
02804 , {{{ -540, -540, -550, -540, -800} /* GC,CG,U,U,E */
02805 , { -600, -600, -820, -600, -800} /* GC,CG,U,U,A */
02806 , { -540, -540, -550, -540, -1460} /* GC,CG,U,U,C */
02807 , { -600, -600, -820, -600, -800} /* GC,CG,U,U,G */
02808 , { -1390, -1390, -1610, -1390, -2350} /* GC,CG,U,U,U */
02809 }
02810 }
02811 }
02812 , {{{ 50, 50, -320, 50, -320} /* GC,GC,E,E,E */
02813 , { 50, -130, -490, 50, -490} /* GC,GC,E,E,A */
02814 , { -400, -580, -940, -400, -940} /* GC,GC,E,E,C */
02815 , { 50, 50, -320, -320, -320} /* GC,GC,E,E,G */
02816 , { -400, -540, -940, -400, -940} /* GC,GC,E,E,U */
02817 }
02818 , {{{ 50, -130, -490, 50, -490} /* GC,GC,E,A,E */
02819 , { 50, -130, -490, 50, -490} /* GC,GC,E,A,A */
02820 , { -400, -580, -940, -400, -940} /* GC,GC,E,A,C */
02821 , { -1320, -1320, -1680, -1770, -1680} /* GC,GC,E,A,G */
02822 , { -400, -580, -940, -400, -940} /* GC,GC,E,A,U */
02823 }
02824 , {{{ -320, -490, -860, -320, -860} /* GC,GC,E,C,E */
02825 , { -320, -490, -860, -320, -860} /* GC,GC,E,C,A */
02826 , { -620, -800, -1160, -620, -1160} /* GC,GC,E,C,C */
02827 , { -320, -490, -860, -320, -860} /* GC,GC,E,C,G */
02828 , { -620, -800, -1160, -620, -1160} /* GC,GC,E,C,U */
02829 }
02830 , {{{ 50, 50, -320, -400, -320} /* GC,GC,E,G,E */
02831 , { -840, -840, -1210, -1290, -1210} /* GC,GC,E,G,A */
02832 , { -400, -580, -940, -400, -940} /* GC,GC,E,G,C */
02833 , { 50, 50, -320, -400, -320} /* GC,GC,E,G,G */
02834 , { -400, -580, -940, -400, -940} /* GC,GC,E,G,U */
02835 }
02836 , {{{ -320, -490, -860, -320, -860} /* GC,GC,E,U,E */
02837 , { -320, -490, -860, -320, -860} /* GC,GC,E,U,A */
02838 , { -930, -1110, -1470, -930, -1470} /* GC,GC,E,U,C */
02839 , { -320, -490, -860, -320, -860} /* GC,GC,E,U,G */
02840 , { -540, -540, -1150, -1230, -1150} /* GC,GC,E,U,U */
02841 }
02842 }
02843 , {{{ 50, 50, -320, -840, -320} /* GC,GC,A,E,E */
02844 , { -130, -130, -490, -840, -490} /* GC,GC,A,E,A */
02845 , { -580, -580, -940, -1270, -940} /* GC,GC,A,E,C */
02846 , { 50, 50, -320, -1210, -320} /* GC,GC,A,E,G */
02847 , { -540, -540, -940, -1270, -940} /* GC,GC,A,E,U */
02848 }
02849 , {{{ -130, -130, -490, -840, -490} /* GC,GC,A,A,E */
02850 , { -130, -130, -490, -840, -490} /* GC,GC,A,A,A */
02851 , { -580, -580, -940, -1290, -940} /* GC,GC,A,A,C */
02852 , { -1320, -1320, -1680, -2030, -1680} /* GC,GC,A,A,G */
02853 , { -580, -580, -940, -1290, -940} /* GC,GC,A,A,U */
02854 }
02855 , {{{ -490, -490, -860, -1210, -860} /* GC,GC,A,C,E */
02856 , { -490, -490, -860, -1210, -860} /* GC,GC,A,C,A */
02857 , { -800, -800, -1160, -1270, -1160} /* GC,GC,A,C,C */
02858 , { -490, -490, -860, -1210, -860} /* GC,GC,A,C,G */
02859 , { -800, -800, -1160, -1270, -1160} /* GC,GC,A,C,U */
02860 }
02861 , {{{ 50, 50, -320, -1290, -320} /* GC,GC,A,G,E */
02862 , { -840, -840, -1210, -1560, -1210} /* GC,GC,A,G,A */
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02863 , { -580, -580, -940, -1290, -940} /* GC,GC,A,G,C */
02864 , { 50, 50, -320, -1920, -320} /* GC,GC,A,G,G */
02865 , { -580, -580, -940, -1290, -940} /* GC,GC,A,G,U */
02866 }
02867 , { { -490, -490, -860, -1210, -860} /* GC,GC,A,U,E */
02868 , { -490, -490, -860, -1210, -860} /* GC,GC,A,U,A */
02869 , { -1110, -1110, -1470, -1580, -1470} /* GC,GC,A,U,C */
02870 , { -490, -490, -860, -1210, -860} /* GC,GC,A,U,G */
02871 , { -540, -540, -1150, -1500, -1150} /* GC,GC,A,U,U */
02872 }
02873 }
02874 , { { { -400, -400, -620, -400, -930} /* GC,GC,C,E,E */
02875 , { -580, -580, -800, -580, -1110} /* GC,GC,C,E,A */
02876 , { -1030, -1030, -1250, -1030, -1560} /* GC,GC,C,E,C */
02877 , { -400, -400, -620, -400, -930} /* GC,GC,C,E,G */
02878 , { -1030, -1030, -1250, -1030, -1560} /* GC,GC,C,E,U */
02879 }
02880 , { { -580, -580, -800, -580, -1110} /* GC,GC,C,A,E */
02881 , { -580, -580, -800, -580, -1110} /* GC,GC,C,A,A */
02882 , { -1030, -1030, -1250, -1030, -1560} /* GC,GC,C,A,C */
02883 , { -1750, -1770, -1750, -1770, -2060} /* GC,GC,C,A,G */
02884 , { -1030, -1030, -1250, -1030, -1560} /* GC,GC,C,A,U */
02885 }
02886 , { { -940, -940, -1160, -940, -1470} /* GC,GC,C,C,E */
02887 , { -940, -940, -1160, -940, -1470} /* GC,GC,C,C,A */
02888 , { -1250, -1250, -1470, -1250, -1780} /* GC,GC,C,C,C */
02889 , { -940, -940, -1160, -940, -1470} /* GC,GC,C,C,G */
02890 , { -1250, -1250, -1470, -1250, -1780} /* GC,GC,C,C,U */
02891 }
02892 , { { -400, -400, -620, -400, -930} /* GC,GC,C,G,E */
02893 , { -1270, -1290, -1270, -1290, -1580} /* GC,GC,C,G,A */
02894 , { -1030, -1030, -1250, -1030, -1560} /* GC,GC,C,G,C */
02895 , { -400, -400, -620, -400, -930} /* GC,GC,C,G,G */
02896 , { -1030, -1030, -1250, -1030, -1560} /* GC,GC,C,G,U */
02897 }
02898 , { { -940, -940, -1160, -940, -1470} /* GC,GC,C,U,E */
02899 , { -940, -940, -1160, -940, -1470} /* GC,GC,C,U,A */
02900 , { -1560, -1560, -1780, -1560, -2090} /* GC,GC,C,U,C */
02901 , { -940, -940, -1160, -940, -1470} /* GC,GC,C,U,G */
02902 , { -1230, -1230, -1450, -1230, -1760} /* GC,GC,C,U,U */
02903 }
02904 }
02905 , { { { 50, -1320, -320, 50, -320} /* GC,GC,G,E,E */
02906 , { 50, -1320, -490, 50, -490} /* GC,GC,G,E,A */
02907 , { -400, -1750, -940, -400, -940} /* GC,GC,G,E,C */
02908 , { -320, -1680, -320, -320, -320} /* GC,GC,G,E,G */
02909 , { -400, -1750, -940, -400, -940} /* GC,GC,G,E,U */
02910 }
02911 , { { 50, -1320, -490, 50, -490} /* GC,GC,G,A,E */
02912 , { 50, -1320, -490, 50, -490} /* GC,GC,G,A,A */
02913 , { -400, -1770, -940, -400, -940} /* GC,GC,G,A,C */
02914 , { -1680, -2510, -1680, -2390, -1680} /* GC,GC,G,A,G */
02915 , { -400, -1770, -940, -400, -940} /* GC,GC,G,A,U */
02916 }
02917 , { { -320, -1680, -860, -320, -860} /* GC,GC,G,C,E */
02918 , { -320, -1680, -860, -320, -860} /* GC,GC,G,C,A */
02919 , { -620, -1750, -1160, -620, -1160} /* GC,GC,G,C,C */
02920 , { -320, -1680, -860, -320, -860} /* GC,GC,G,C,G */
02921 , { -620, -1750, -1160, -620, -1160} /* GC,GC,G,C,U */
02922 }
02923 , { { -320, -1770, -320, -400, -320} /* GC,GC,G,G,E */
02924 , { -1210, -2030, -1210, -1920, -1210} /* GC,GC,G,G,A */
02925 , { -400, -1770, -940, -400, -940} /* GC,GC,G,G,C */
02926 , { -320, -2390, -320, -2280, -320} /* GC,GC,G,G,G */
02927 , { -400, -1770, -940, -400, -940} /* GC,GC,G,G,U */
02928 }
02929 , { { -320, -1680, -860, -320, -860} /* GC,GC,G,U,E */
02930 , { -320, -1680, -860, -320, -860} /* GC,GC,G,U,A */
02931 , { -930, -2060, -1470, -930, -1470} /* GC,GC,G,U,C */
02932 , { -320, -1680, -860, -320, -860} /* GC,GC,G,U,G */
02933 , { -1150, -1970, -1150, -1860, -1150} /* GC,GC,G,U,U */
02934 }
02935 }
02936 , { { { -400, -400, -620, -400, -540} /* GC,GC,U,E,E */
02937 , { -540, -580, -800, -580, -540} /* GC,GC,U,E,A */
02938 , { -1030, -1030, -1250, -1030, -1230} /* GC,GC,U,E,C */
02939 , { -400, -400, -620, -400, -1150} /* GC,GC,U,E,G */
02940 , { -1030, -1030, -1250, -1030, -1230} /* GC,GC,U,E,U */
02941 }
02942 , { { -540, -580, -800, -580, -540} /* GC,GC,U,A,E */
02943 , { -540, -580, -800, -580, -540} /* GC,GC,U,A,A */
02944 , { -1030, -1030, -1250, -1030, -1230} /* GC,GC,U,A,C */
02945 , { -1750, -1770, -1750, -1770, -1970} /* GC,GC,U,A,G */
02946 , { -1030, -1030, -1250, -1030, -1230} /* GC,GC,U,A,U */
02947 }
02948 , { { -940, -940, -1160, -940, -1150} /* GC,GC,U,C,E */
02949 , { -940, -940, -1160, -940, -1150} /* GC,GC,U,C,A */

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02950 , { -1250, -1250, -1470, -1250, -1450} /* GC,GC,U,C,C */
02951 , { -940, -940, -1160, -940, -1150} /* GC,GC,U,C,G */
02952 , { -1250, -1250, -1470, -1250, -1450} /* GC,GC,U,C,U */
02953 }
02954 , { { -400, -400, -620, -400, -1230} /* GC,GC,U,G,E */
02955 , { -1270, -1290, -1270, -1290, -1500} /* GC,GC,U,G,A */
02956 , { -1030, -1030, -1250, -1030, -1230} /* GC,GC,U,G,C */
02957 , { -400, -400, -620, -400, -1860} /* GC,GC,U,G,G */
02958 , { -1030, -1030, -1250, -1030, -1230} /* GC,GC,U,G,U */
02959 }
02960 , { { -940, -940, -1160, -940, -1150} /* GC,GC,U,U,E */
02961 , { -940, -940, -1160, -940, -1150} /* GC,GC,U,U,A */
02962 , { -1560, -1560, -1780, -1560, -1760} /* GC,GC,U,U,C */
02963 , { -940, -940, -1160, -940, -1150} /* GC,GC,U,U,G */
02964 , { -1230, -1230, -1450, -1230, -1440} /* GC,GC,U,U,U */
02965 }
02966 }
02967 }
02968 , { { { 210, 210, -160, -240, -160} /* GC,GU,E,E,E */
02969 , { -870, -870, -1230, -870, -1230} /* GC,GU,E,E,A */
02970 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,E,C */
02971 , { 210, 210, -160, -240, -160} /* GC,GU,E,E,G */
02972 , { -800, -800, -1410, -870, -1410} /* GC,GU,E,E,U */
02973 }
02974 , { { -870, -1040, -1410, -870, -1410} /* GC,GU,E,A,E */
02975 , { -1050, -1220, -1590, -1050, -1590} /* GC,GU,E,A,A */
02976 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,A,C */
02977 , { -1060, -1060, -1420, -1510, -1420} /* GC,GU,E,A,G */
02978 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,A,U */
02979 }
02980 , { { -870, -1040, -1410, -870, -1410} /* GC,GU,E,C,E */
02981 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,C,A */
02982 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,C,C */
02983 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,C,G */
02984 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,C,U */
02985 }
02986 , { { 210, 210, -160, -240, -160} /* GC,GU,E,G,E */
02987 , { -870, -870, -1230, -1320, -1230} /* GC,GU,E,G,A */
02988 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,G,C */
02989 , { 210, 210, -160, -240, -160} /* GC,GU,E,G,G */
02990 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,G,U */
02991 }
02992 , { { -800, -800, -1410, -870, -1410} /* GC,GU,E,U,E */
02993 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,U,A */
02994 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,U,C */
02995 , { -870, -1040, -1410, -870, -1410} /* GC,GU,E,U,G */
02996 , { -800, -800, -1410, -1490, -1410} /* GC,GU,E,U,U */
02997 }
02998 }
02999 , { { { 210, 210, -160, -1520, -160} /* GC,GU,A,E,E */
03000 , { -870, -870, -1230, -1580, -1230} /* GC,GU,A,E,A */
03001 , { -1040, -1040, -1410, -1520, -1410} /* GC,GU,A,E,C */
03002 , { 210, 210, -160, -1760, -160} /* GC,GU,A,E,G */
03003 , { -800, -800, -1410, -1520, -1410} /* GC,GU,A,E,U */
03004 }
03005 , { { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,A,E */
03006 , { -1220, -1220, -1590, -1940, -1590} /* GC,GU,A,A,A */
03007 , { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,A,C */
03008 , { -1060, -1060, -1420, -1770, -1420} /* GC,GU,A,A,G */
03009 , { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,A,U */
03010 }
03011 , { { -1040, -1040, -1410, -1520, -1410} /* GC,GU,A,C,E */
03012 , { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,C,A */
03013 , { -1040, -1040, -1410, -1520, -1410} /* GC,GU,A,C,C */
03014 , { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,C,G */
03015 , { -1040, -1040, -1410, -1520, -1410} /* GC,GU,A,C,U */
03016 }
03017 , { { 210, 210, -160, -1580, -160} /* GC,GU,A,G,E */
03018 , { -870, -870, -1230, -1580, -1230} /* GC,GU,A,G,A */
03019 , { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,G,C */
03020 , { 210, 210, -160, -1760, -160} /* GC,GU,A,G,G */
03021 , { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,G,U */
03022 }
03023 , { { -800, -800, -1410, -1520, -1410} /* GC,GU,A,U,E */
03024 , { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,U,A */
03025 , { -1040, -1040, -1410, -1520, -1410} /* GC,GU,A,U,C */
03026 , { -1040, -1040, -1410, -1760, -1410} /* GC,GU,A,U,G */
03027 , { -800, -800, -1410, -1760, -1410} /* GC,GU,A,U,U */
03028 }
03029 }
03030 , { { { -240, -240, -460, -240, -770} /* GC,GU,C,E,E */
03031 , { -1300, -1320, -1300, -1320, -1610} /* GC,GU,C,E,A */
03032 , { -1490, -1490, -1710, -1490, -2020} /* GC,GU,C,E,C */
03033 , { -240, -240, -460, -240, -770} /* GC,GU,C,E,G */
03034 , { -1490, -1490, -1710, -1490, -2020} /* GC,GU,C,E,U */
03035 }
03036 , { { -1490, -1490, -1490, -1490, -1800} /* GC,GU,C,A,E */
```

```

03037 , { -1670, -1670, -1890, -1670, -2200} /* GC, GU, C, A, A */
03038 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, A, C */
03039 , { -1490, -1510, -1490, -1800} /* GC, GU, C, A, G */
03040 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, A, U */
03041 }
03042 , { { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, C, E */
03043 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, C, A */
03044 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, C, C */
03045 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, C, G */
03046 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, C, U */
03047 }
03048 , { { -240, -240, -460, -240, -770} /* GC, GU, C, G, E */
03049 , { -1300, -1320, -1300, -1320, -1610} /* GC, GU, C, G, A */
03050 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, G, C */
03051 , { -240, -240, -460, -240, -770} /* GC, GU, C, G, G */
03052 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, G, U */
03053 }
03054 , { { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, U, E */
03055 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, U, A */
03056 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, U, C */
03057 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, U, G */
03058 , { -1490, -1490, -1710, -1490, -2020} /* GC, GU, C, U, U */
03059 }
03060 }
03061 , { { { -160, -1990, -160, -870, -160} /* GC, GU, G, E, E */
03062 , { -870, -2060, -1230, -870, -1230} /* GC, GU, G, E, A */
03063 , { -870, -1990, -1410, -870, -1410} /* GC, GU, G, E, C */
03064 , { -160, -2230, -160, -870, -160} /* GC, GU, G, E, G */
03065 , { -870, -1990, -1410, -870, -1410} /* GC, GU, G, E, U */
03066 }
03067 , { { -870, -2230, -1410, -870, -1410} /* GC, GU, G, A, E */
03068 , { -1050, -2410, -1590, -1050, -1590} /* GC, GU, G, A, A */
03069 , { -870, -2230, -1410, -870, -1410} /* GC, GU, G, A, C */
03070 , { -1420, -2250, -1420, -2130, -1420} /* GC, GU, G, A, G */
03071 , { -870, -2230, -1410, -870, -1410} /* GC, GU, G, A, U */
03072 }
03073 , { { -870, -1990, -1410, -870, -1410} /* GC, GU, G, C, E */
03074 , { -870, -2230, -1410, -870, -1410} /* GC, GU, G, C, A */
03075 , { -870, -1990, -1410, -870, -1410} /* GC, GU, G, C, C */
03076 , { -870, -2230, -1410, -870, -1410} /* GC, GU, G, C, G */
03077 , { -870, -1990, -1410, -870, -1410} /* GC, GU, G, C, U */
03078 }
03079 , { { -160, -2060, -160, -870, -160} /* GC, GU, G, G, E */
03080 , { -1230, -2060, -1230, -1940, -1230} /* GC, GU, G, G, A */
03081 , { -870, -2230, -1410, -870, -1410} /* GC, GU, G, G, C */
03082 , { -160, -2230, -160, -2120, -160} /* GC, GU, G, G, G */
03083 , { -870, -2230, -1410, -870, -1410} /* GC, GU, G, G, U */
03084 }
03085 , { { -870, -1990, -1410, -870, -1410} /* GC, GU, G, U, E */
03086 , { -870, -2230, -1410, -870, -1410} /* GC, GU, G, U, A */
03087 , { -870, -1990, -1410, -870, -1410} /* GC, GU, G, U, C */
03088 , { -870, -2230, -1410, -870, -1410} /* GC, GU, G, U, G */
03089 , { -1410, -2230, -1410, -2120, -1410} /* GC, GU, G, U, U */
03090 }
03091 }
03092 , { { { -240, -240, -460, -240, -1520} /* GC, GU, U, E, E */
03093 , { -1300, -1320, -1300, -1320, -1520} /* GC, GU, U, E, A */
03094 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, E, C */
03095 , { -240, -240, -460, -240, -1700} /* GC, GU, U, E, G */
03096 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, E, U */
03097 }
03098 , { { -1490, -1490, -1490, -1490, -1640} /* GC, GU, U, A, E */
03099 , { -1640, -1670, -1890, -1670, -1640} /* GC, GU, U, A, A */
03100 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, A, C */
03101 , { -1490, -1510, -1490, -1710} /* GC, GU, U, A, G */
03102 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, A, U */
03103 }
03104 , { { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, C, E */
03105 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, C, A */
03106 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, C, C */
03107 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, C, G */
03108 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, C, U */
03109 }
03110 , { { -240, -240, -460, -240, -1520} /* GC, GU, U, G, E */
03111 , { -1300, -1320, -1300, -1320, -1520} /* GC, GU, U, G, A */
03112 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, G, C */
03113 , { -240, -240, -460, -240, -1700} /* GC, GU, U, G, G */
03114 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, G, U */
03115 }
03116 , { { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, U, E */
03117 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, U, A */
03118 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, U, C */
03119 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, U, G */
03120 , { -1490, -1490, -1710, -1490, -1700} /* GC, GU, U, U, U */
03121 }
03122 }
03123 }

```

```
03124 ,{{{ 760, 760, 400, 310, 400} /* GC,UG,E,E,E */
03125 ,{ 200, -430, -340, 200, -340} /* GC,UG,E,E,A */
03126 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,E,C */
03127 ,{ 760, 760, 400, 310, 400} /* GC,UG,E,E,G */
03128 ,{ -250, -250, -850, -310, -850} /* GC,UG,E,E,U */
03129 }
03130 ,{{{ 200, -430, -340, 200, -340} /* GC,UG,E,A,E */
03131 ,{ 200, -430, -340, 200, -340} /* GC,UG,E,A,A */
03132 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,A,C */
03133 ,{ -830, -830, -1190, -1280, -1190} /* GC,UG,E,A,G */
03134 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,A,U */
03135 }
03136 ,{{{ -310, -490, -850, -310, -850} /* GC,UG,E,C,E */
03137 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,C,A */
03138 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,C,C */
03139 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,C,G */
03140 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,C,U */
03141 }
03142 ,{{{ 760, 760, 400, 310, 400} /* GC,UG,E,G,E */
03143 ,{ -1000, -1000, -1360, -1450, -1360} /* GC,UG,E,G,A */
03144 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,G,C */
03145 ,{ 760, 760, 400, 310, 400} /* GC,UG,E,G,G */
03146 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,G,U */
03147 }
03148 ,{{{ -250, -250, -850, -310, -850} /* GC,UG,E,U,E */
03149 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,U,A */
03150 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,U,C */
03151 ,{ -310, -490, -850, -310, -850} /* GC,UG,E,U,G */
03152 ,{ -250, -250, -850, -940, -850} /* GC,UG,E,U,U */
03153 }
03154 }
03155 ,{{{ 760, 760, 400, -690, 400} /* GC,UG,A,E,E */
03156 ,{ -340, -490, -340, -690, -340} /* GC,UG,A,E,A */
03157 ,{ -490, -490, -850, -960, -850} /* GC,UG,A,E,C */
03158 ,{ 760, 760, 400, -1200, 400} /* GC,UG,A,E,G */
03159 ,{ -250, -250, -850, -960, -850} /* GC,UG,A,E,U */
03160 }
03161 ,{{{ -340, -490, -340, -690, -340} /* GC,UG,A,A,E */
03162 ,{ -340, -2040, -340, -690, -340} /* GC,UG,A,A,A */
03163 ,{ -490, -490, -850, -1200, -850} /* GC,UG,A,A,C */
03164 ,{ -830, -830, -1190, -1540, -1190} /* GC,UG,A,A,G */
03165 ,{ -490, -490, -850, -1200, -850} /* GC,UG,A,A,U */
03166 }
03167 ,{{{ -490, -490, -850, -960, -850} /* GC,UG,A,C,E */
03168 ,{ -490, -490, -850, -1200, -850} /* GC,UG,A,C,A */
03169 ,{ -490, -490, -850, -960, -850} /* GC,UG,A,C,C */
03170 ,{ -490, -490, -850, -1200, -850} /* GC,UG,A,C,G */
03171 ,{ -490, -490, -850, -960, -850} /* GC,UG,A,C,U */
03172 }
03173 ,{{{ 760, 760, 400, -1200, 400} /* GC,UG,A,G,E */
03174 ,{ -1000, -1000, -1360, -1710, -1360} /* GC,UG,A,G,A */
03175 ,{ -490, -490, -850, -1200, -850} /* GC,UG,A,G,C */
03176 ,{ 760, 760, 400, -1200, 400} /* GC,UG,A,G,G */
03177 ,{ -490, -490, -850, -1200, -850} /* GC,UG,A,G,U */
03178 }
03179 ,{{{ -250, -250, -850, -960, -850} /* GC,UG,A,U,E */
03180 ,{ -490, -490, -850, -1200, -850} /* GC,UG,A,U,A */
03181 ,{ -490, -490, -850, -960, -850} /* GC,UG,A,U,C */
03182 ,{ -490, -490, -850, -1200, -850} /* GC,UG,A,U,G */
03183 ,{ -250, -250, -850, -1200, -850} /* GC,UG,A,U,U */
03184 }
03185 }
03186 ,{{{ 310, 310, 90, 310, -220} /* GC,UG,C,E,E */
03187 ,{ -430, -430, -650, -430, -960} /* GC,UG,C,E,A */
03188 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,E,C */
03189 ,{ 310, 310, 90, 310, -220} /* GC,UG,C,E,G */
03190 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,E,U */
03191 }
03192 ,{{{ -430, -430, -650, -430, -960} /* GC,UG,C,A,E */
03193 ,{ -430, -430, -650, -430, -960} /* GC,UG,C,A,A */
03194 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,A,C */
03195 ,{ -1260, -1280, -1260, -1280, -1570} /* GC,UG,C,A,G */
03196 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,A,U */
03197 }
03198 ,{{{ -940, -940, -1160, -940, -1470} /* GC,UG,C,C,E */
03199 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,C,A */
03200 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,C,C */
03201 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,C,G */
03202 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,C,U */
03203 }
03204 ,{{{ 310, 310, 90, 310, -220} /* GC,UG,C,G,E */
03205 ,{ -1430, -1450, -1430, -1450, -1740} /* GC,UG,C,G,A */
03206 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,G,C */
03207 ,{ 310, 310, 90, 310, -220} /* GC,UG,C,G,G */
03208 ,{ -940, -940, -1160, -940, -1470} /* GC,UG,C,G,U */
03209 }
03210 ,{{{ -940, -940, -1160, -940, -1470} /* GC,UG,C,U,E */
```



```

03211      , { -940, -940, -1160, -940, -1470} /* GC,UG,C,U,A */
03212      , { -940, -940, -1160, -940, -1470} /* GC,UG,C,U,C */
03213      , { -940, -940, -1160, -940, -1470} /* GC,UG,C,U,G */
03214      , { -940, -940, -1160, -940, -1470} /* GC,UG,C,U,U */
03215      }
03216      }
03217      ,{{{ 400, -1170, 400, 200, 400} /* GC,UG,G,E,E */
03218      , { 200, -1170, -340, 200, -340} /* GC,UG,G,E,A */
03219      , { -310, -1440, -850, -310, -850} /* GC,UG,G,E,C */
03220      , { 400, -1680, 400, -310, 400} /* GC,UG,G,E,G */
03221      , { -310, -1440, -850, -310, -850} /* GC,UG,G,E,U */
03222      }
03223      ,{{{ 200, -1170, -340, 200, -340} /* GC,UG,G,A,E */
03224      , { 200, -1170, -340, 200, -340} /* GC,UG,G,A,A */
03225      , { -310, -1680, -850, -310, -850} /* GC,UG,G,A,C */
03226      , { -1190, -2020, -1190, -1900, -1190} /* GC,UG,G,A,G */
03227      , { -310, -1680, -850, -310, -850} /* GC,UG,G,A,U */
03228      }
03229      ,{{{ -310, -1440, -850, -310, -850} /* GC,UG,G,C,E */
03230      , { -310, -1680, -850, -310, -850} /* GC,UG,G,C,A */
03231      , { -310, -1440, -850, -310, -850} /* GC,UG,G,C,C */
03232      , { -310, -1680, -850, -310, -850} /* GC,UG,G,C,G */
03233      , { -310, -1440, -850, -310, -850} /* GC,UG,G,C,U */
03234      }
03235      ,{{{ 400, -1680, 400, -310, 400} /* GC,UG,G,G,E */
03236      , { -1360, -2190, -1360, -2070, -1360} /* GC,UG,G,G,A */
03237      , { -310, -1680, -850, -310, -850} /* GC,UG,G,G,C */
03238      , { 400, -1680, 400, -1560, 400} /* GC,UG,G,G,G */
03239      , { -310, -1680, -850, -310, -850} /* GC,UG,G,G,U */
03240      }
03241      ,{{{ -310, -1440, -850, -310, -850} /* GC,UG,G,U,E */
03242      , { -310, -1680, -850, -310, -850} /* GC,UG,G,U,A */
03243      , { -310, -1440, -850, -310, -850} /* GC,UG,G,U,C */
03244      , { -310, -1680, -850, -310, -850} /* GC,UG,G,U,G */
03245      , { -850, -1680, -850, -1560, -850} /* GC,UG,G,U,U */
03246      }
03247      }
03248      ,{{{ 310, 310, 90, 310, -390} /* GC,UG,U,E,E */
03249      , { -390, -430, -650, -430, -390} /* GC,UG,U,E,A */
03250      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,E,C */
03251      , { 310, 310, 90, 310, -1140} /* GC,UG,U,E,G */
03252      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,E,U */
03253      }
03254      ,{{{ -390, -430, -650, -430, -390} /* GC,UG,U,A,E */
03255      , { -390, -430, -650, -430, -390} /* GC,UG,U,A,A */
03256      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,A,C */
03257      , { -1260, -1280, -1260, -1280, -1480} /* GC,UG,U,A,G */
03258      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,A,U */
03259      }
03260      ,{{{ -940, -940, -1160, -940, -1140} /* GC,UG,U,C,E */
03261      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,C,A */
03262      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,C,C */
03263      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,C,G */
03264      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,C,U */
03265      }
03266      ,{{{ 310, 310, 90, 310, -1140} /* GC,UG,U,G,E */
03267      , { -1430, -1450, -1430, -1450, -1650} /* GC,UG,U,G,A */
03268      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,G,C */
03269      , { 310, 310, 90, 310, -1140} /* GC,UG,U,G,G */
03270      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,G,U */
03271      }
03272      ,{{{ -940, -940, -1160, -940, -1140} /* GC,UG,U,U,E */
03273      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,U,A */
03274      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,U,C */
03275      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,U,G */
03276      , { -940, -940, -1160, -940, -1140} /* GC,UG,U,U,U */
03277      }
03278      }
03279      }
03280      ,{{{ 1140, 1140, 770, 780, 770} /* GC,AU,E,E,E */
03281      , { 780, 600, 240, 780, 240} /* GC,AU,E,E,A */
03282      , { 480, 300, -60, 480, -60} /* GC,AU,E,E,C */
03283      , { 1140, 1140, 770, 690, 770} /* GC,AU,E,E,G */
03284      , { 480, 300, -60, 480, -60} /* GC,AU,E,E,U */
03285      }
03286      ,{{{ 780, 600, 240, 780, 240} /* GC,AU,E,A,E */
03287      , { 780, 600, 240, 780, 240} /* GC,AU,E,A,A */
03288      , { 470, 290, -70, 470, -70} /* GC,AU,E,A,C */
03289      , { -780, -780, -1150, -1230, -1150} /* GC,AU,E,A,G */
03290      , { 470, 290, -70, 470, -70} /* GC,AU,E,A,U */
03291      }
03292      ,{{{ 490, 310, -50, 490, -50} /* GC,AU,E,C,E */
03293      , { 490, 310, -50, 490, -50} /* GC,AU,E,C,A */
03294      , { 480, 300, -60, 480, -60} /* GC,AU,E,C,C */
03295      , { 490, 310, -50, 490, -50} /* GC,AU,E,C,G */
03296      , { 480, 300, -60, 480, -60} /* GC,AU,E,C,U */
03297      }

```



```
03298 ,{{ 1140, 1140, 770, 690, 770} /* GC,AU,E,G,E */
03299 ,{ -600, -600, -970, -1050, -970} /* GC,AU,E,G,A */
03300 ,{ 470, 290, -70, 470, -70} /* GC,AU,E,G,C */
03301 ,{ 1140, 1140, 770, 690, 770} /* GC,AU,E,G,G */
03302 ,{ 470, 290, -70, 470, -70} /* GC,AU,E,G,U */
03303 }
03304 ,{{ 490, 310, -50, 490, -50} /* GC,AU,E,U,E */
03305 ,{ 490, 310, -50, 490, -50} /* GC,AU,E,U,A */
03306 ,{ 480, 300, -60, 480, -60} /* GC,AU,E,U,C */
03307 ,{ 490, 310, -50, 490, -50} /* GC,AU,E,U,G */
03308 ,{ -430, -430, -1040, -1120, -1040} /* GC,AU,E,U,U */
03309 }
03310 }
03311 ,{{{ 1140, 1140, 770, -110, 770} /* GC,AU,A,E,E */
03312 ,{ 600, 600, 240, -110, 240} /* GC,AU,A,E,A */
03313 ,{ 300, 300, -60, -170, -60} /* GC,AU,A,E,C */
03314 ,{ 1140, 1140, 770, -400, 770} /* GC,AU,A,E,G */
03315 ,{ 300, 300, -60, -170, -60} /* GC,AU,A,E,U */
03316 }
03317 ,{{ 600, 600, 240, -110, 240} /* GC,AU,A,A,E */
03318 ,{ 600, 600, 240, -110, 240} /* GC,AU,A,A,A */
03319 ,{ 290, 290, -70, -420, -70} /* GC,AU,A,A,C */
03320 ,{ -780, -780, -1150, -1500, -1150} /* GC,AU,A,A,G */
03321 ,{ 290, 290, -70, -420, -70} /* GC,AU,A,A,U */
03322 }
03323 ,{{{ 310, 310, -50, -170, -50} /* GC,AU,A,C,E */
03324 ,{ 310, 310, -50, -400, -50} /* GC,AU,A,C,A */
03325 ,{ 300, 300, -60, -170, -60} /* GC,AU,A,C,C */
03326 ,{ 310, 310, -50, -400, -50} /* GC,AU,A,C,G */
03327 ,{ 300, 300, -60, -170, -60} /* GC,AU,A,C,U */
03328 }
03329 ,{{{ 1140, 1140, 770, -420, 770} /* GC,AU,A,G,E */
03330 ,{ -600, -600, -970, -1320, -970} /* GC,AU,A,G,A */
03331 ,{ 290, 290, -70, -420, -70} /* GC,AU,A,G,C */
03332 ,{ 1140, 1140, 770, -830, 770} /* GC,AU,A,G,G */
03333 ,{ 290, 290, -70, -420, -70} /* GC,AU,A,G,U */
03334 }
03335 ,{{{ 310, 310, -50, -170, -50} /* GC,AU,A,U,E */
03336 ,{ 310, 310, -50, -400, -50} /* GC,AU,A,U,A */
03337 ,{ 300, 300, -60, -170, -60} /* GC,AU,A,U,C */
03338 ,{ 310, 310, -50, -400, -50} /* GC,AU,A,U,G */
03339 ,{ -430, -430, -1040, -1390, -1040} /* GC,AU,A,U,U */
03340 }
03341 }
03342 ,{{{ 690, 690, 470, 690, 160} /* GC,AU,C,E,E */
03343 ,{ 150, 150, -60, 150, -370} /* GC,AU,C,E,A */
03344 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,E,C */
03345 ,{ 690, 690, 470, 690, 160} /* GC,AU,C,E,G */
03346 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,E,U */
03347 }
03348 ,{{{ 150, 150, -60, 150, -370} /* GC,AU,C,A,E */
03349 ,{ 150, 150, -60, 150, -370} /* GC,AU,C,A,A */
03350 ,{ -150, -150, -370, -150, -680} /* GC,AU,C,A,C */
03351 ,{ -1210, -1230, -1210, -1230, -1520} /* GC,AU,C,A,G */
03352 ,{ -150, -150, -370, -150, -680} /* GC,AU,C,A,U */
03353 }
03354 ,{{{ -140, -140, -360, -140, -670} /* GC,AU,C,C,E */
03355 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,C,A */
03356 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,C,C */
03357 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,C,G */
03358 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,C,U */
03359 }
03360 ,{{{ 690, 690, 470, 690, 160} /* GC,AU,C,G,E */
03361 ,{ -1030, -1050, -1030, -1050, -1340} /* GC,AU,C,G,A */
03362 ,{ -150, -150, -370, -150, -680} /* GC,AU,C,G,C */
03363 ,{ 690, 690, 470, 690, 160} /* GC,AU,C,G,G */
03364 ,{ -150, -150, -370, -150, -680} /* GC,AU,C,G,U */
03365 }
03366 ,{{{ -140, -140, -360, -140, -670} /* GC,AU,C,U,E */
03367 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,U,A */
03368 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,U,C */
03369 ,{ -140, -140, -360, -140, -670} /* GC,AU,C,U,G */
03370 ,{ -1120, -1120, -1340, -1120, -1650} /* GC,AU,C,U,U */
03371 }
03372 }
03373 ,{{{ 780, -580, 770, 780, 770} /* GC,AU,G,E,E */
03374 ,{ 780, -580, 240, 780, 240} /* GC,AU,G,E,A */
03375 ,{ 480, -640, -60, 480, -60} /* GC,AU,G,E,C */
03376 ,{ 770, -880, 770, 490, 770} /* GC,AU,G,E,G */
03377 ,{ 480, -640, -60, 480, -60} /* GC,AU,G,E,U */
03378 }
03379 ,{{{ 780, -580, 240, 780, 240} /* GC,AU,G,A,E */
03380 ,{ 780, -580, 240, 780, 240} /* GC,AU,G,A,A */
03381 ,{ 470, -890, -70, 470, -70} /* GC,AU,G,A,C */
03382 ,{ -1150, -1970, -1150, -1860, -1150} /* GC,AU,G,A,G */
03383 ,{ 470, -890, -70, 470, -70} /* GC,AU,G,A,U */
03384 }
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03385 ,{{ 490, -640, -50, 490, -50} /* GC,AU,G,C,E */
03386 ,{ 490, -880, -50, 490, -50} /* GC,AU,G,C,A */
03387 ,{ 480, -640, -60, 480, -60} /* GC,AU,G,C,C */
03388 ,{ 490, -880, -50, 490, -50} /* GC,AU,G,C,G */
03389 ,{ 480, -640, -60, 480, -60} /* GC,AU,G,C,U */
03390 }
03391 ,{{ 770, -890, 770, 470, 770} /* GC,AU,G,G,E */
03392 ,{ -970, -1790, -970, -1680, -970} /* GC,AU,G,G,A */
03393 ,{ 470, -890, -70, 470, -70} /* GC,AU,G,G,C */
03394 ,{ 770, -1300, 770, -1190, 770} /* GC,AU,G,G,G */
03395 ,{ 470, -890, -70, 470, -70} /* GC,AU,G,G,U */
03396 }
03397 ,{{ 490, -640, -50, 490, -50} /* GC,AU,G,U,E */
03398 ,{ 490, -880, -50, 490, -50} /* GC,AU,G,U,A */
03399 ,{ 480, -640, -60, 480, -60} /* GC,AU,G,U,C */
03400 ,{ 490, -880, -50, 490, -50} /* GC,AU,G,U,G */
03401 ,{ -1040, -1860, -1040, -1750, -1040} /* GC,AU,G,U,U */
03402 }
03403 }
03404 ,{{{ 690, 690, 470, 690, 190} /* GC,AU,U,E,E */
03405 ,{ 190, 150, -60, 150, 190} /* GC,AU,U,E,A */
03406 ,{ -140, -140, -360, -140, -350} /* GC,AU,U,E,C */
03407 ,{ 690, 690, 470, 690, -340} /* GC,AU,U,E,G */
03408 ,{ -140, -140, -360, -140, -350} /* GC,AU,U,E,U */
03409 }
03410 ,{{ 190, 150, -60, 150, 190} /* GC,AU,U,A,E */
03411 ,{ 190, 150, -60, 150, 190} /* GC,AU,U,A,A */
03412 ,{ -150, -150, -370, -150, -360} /* GC,AU,U,A,C */
03413 ,{ -1210, -1230, -1210, -1230, -1440} /* GC,AU,U,A,G */
03414 ,{ -150, -150, -370, -150, -360} /* GC,AU,U,A,U */
03415 }
03416 ,{{ -140, -140, -360, -140, -340} /* GC,AU,U,C,E */
03417 ,{ -140, -140, -360, -140, -340} /* GC,AU,U,C,A */
03418 ,{ -140, -140, -360, -140, -350} /* GC,AU,U,C,C */
03419 ,{ -140, -140, -360, -140, -340} /* GC,AU,U,C,G */
03420 ,{ -140, -140, -360, -140, -350} /* GC,AU,U,C,U */
03421 }
03422 ,{{{ 690, 690, 470, 690, -360} /* GC,AU,U,G,E */
03423 ,{ -1030, -1050, -1030, -1050, -1260} /* GC,AU,U,G,A */
03424 ,{ -150, -150, -370, -150, -360} /* GC,AU,U,G,C */
03425 ,{ 690, 690, 470, 690, -770} /* GC,AU,U,G,G */
03426 ,{ -150, -150, -370, -150, -360} /* GC,AU,U,G,U */
03427 }
03428 ,{{ -140, -140, -360, -140, -340} /* GC,AU,U,U,E */
03429 ,{ -140, -140, -360, -140, -340} /* GC,AU,U,U,A */
03430 ,{ -140, -140, -360, -140, -350} /* GC,AU,U,U,C */
03431 ,{ -140, -140, -360, -140, -340} /* GC,AU,U,U,G */
03432 ,{ -1120, -1120, -1340, -1120, -1330} /* GC,AU,U,U,U */
03433 }
03434 }
03435 }
03436 ,{{{ 1320, 1320, 960, 870, 960} /* GC,UA,E,E,E */
03437 ,{ 850, 670, 300, 850, 300} /* GC,UA,E,E,A */
03438 ,{ 720, 540, 170, 720, 170} /* GC,UA,E,E,C */
03439 ,{ 1320, 1320, 960, 870, 960} /* GC,UA,E,E,G */
03440 ,{ 590, 410, 40, 590, 40} /* GC,UA,E,E,U */
03441 }
03442 ,{{ 850, 670, 300, 850, 300} /* GC,UA,E,A,E */
03443 ,{ 850, 670, 300, 850, 300} /* GC,UA,E,A,A */
03444 ,{ 570, 390, 20, 570, 20} /* GC,UA,E,A,C */
03445 ,{ -730, -730, -1100, -1180, -1100} /* GC,UA,E,A,G */
03446 ,{ 570, 390, 20, 570, 20} /* GC,UA,E,A,U */
03447 }
03448 ,{{ 720, 540, 170, 720, 170} /* GC,UA,E,C,E */
03449 ,{ 720, 540, 170, 720, 170} /* GC,UA,E,C,A */
03450 ,{ 720, 540, 170, 720, 170} /* GC,UA,E,C,C */
03451 ,{ 720, 540, 170, 720, 170} /* GC,UA,E,C,G */
03452 ,{ 590, 410, 40, 590, 40} /* GC,UA,E,C,U */
03453 }
03454 ,{{ 1320, 1320, 960, 870, 960} /* GC,UA,E,G,E */
03455 ,{ -1030, -1030, -1400, -1480, -1400} /* GC,UA,E,G,A */
03456 ,{ 570, 390, 20, 570, 20} /* GC,UA,E,G,C */
03457 ,{ 1320, 1320, 960, 870, 960} /* GC,UA,E,G,G */
03458 ,{ 570, 390, 20, 570, 20} /* GC,UA,E,G,U */
03459 }
03460 ,{{ 720, 540, 170, 720, 170} /* GC,UA,E,U,E */
03461 ,{ 720, 540, 170, 720, 170} /* GC,UA,E,U,A */
03462 ,{ 280, 100, -260, 280, -260} /* GC,UA,E,U,C */
03463 ,{ 720, 540, 170, 720, 170} /* GC,UA,E,U,G */
03464 ,{ -160, -160, -760, -850, -760} /* GC,UA,E,U,U */
03465 }
03466 }
03467 ,{{{ 1320, 1320, 960, 70, 960} /* GC,UA,A,E,E */
03468 ,{ 670, 670, 300, -40, 300} /* GC,UA,A,E,A */
03469 ,{ 540, 540, 170, 70, 170} /* GC,UA,A,E,C */
03470 ,{ 1320, 1320, 960, -170, 960} /* GC,UA,A,E,G */
03471 ,{ 410, 410, 40, -60, 40} /* GC,UA,A,E,U */

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03472      }
03473      ,{{      670,      670,      300,      -40,      300} /* GC,UA,A,A,E */
03474      ,{{      670,      670,      300,      -40,      300} /* GC,UA,A,A,A */
03475      ,{{      390,      390,      20,      -320,      20} /* GC,UA,A,A,C */
03476      ,{{     -730,     -730,    -1100,    -1450,    -1100} /* GC,UA,A,A,G */
03477      ,{{      390,      390,      20,      -320,      20} /* GC,UA,A,A,U */
03478      }
03479      ,{{      540,      540,      170,      70,      170} /* GC,UA,A,C,E */
03480      ,{{      540,      540,      170,     -170,      170} /* GC,UA,A,C,A */
03481      ,{{      540,      540,      170,      70,      170} /* GC,UA,A,C,C */
03482      ,{{      540,      540,      170,     -170,      170} /* GC,UA,A,C,G */
03483      ,{{      410,      410,      40,      -60,      40} /* GC,UA,A,C,U */
03484      }
03485      ,{{     1320,     1320,      960,     -320,      960} /* GC,UA,A,G,E */
03486      ,{{    -1030,    -1030,    -1400,    -1750,    -1400} /* GC,UA,A,G,A */
03487      ,{{      390,      390,      20,     -320,      20} /* GC,UA,A,G,C */
03488      ,{{     1320,     1320,      960,    -640,      960} /* GC,UA,A,G,G */
03489      ,{{      390,      390,      20,     -320,      20} /* GC,UA,A,G,U */
03490      }
03491      ,{{      540,      540,      170,     -170,      170} /* GC,UA,A,U,E */
03492      ,{{      540,      540,      170,     -170,      170} /* GC,UA,A,U,A */
03493      ,{{      100,      100,     -260,     -370,     -260} /* GC,UA,A,U,C */
03494      ,{{      540,      540,      170,     -170,      170} /* GC,UA,A,U,G */
03495      ,{{     -160,     -160,     -760,    -1110,     -760} /* GC,UA,A,U,U */
03496      }
03497      }
03498      ,{{{      870,      870,      650,      870,      340} /* GC,UA,C,E,E */
03499      ,{{      220,      220,      0,      220,     -310} /* GC,UA,C,E,A */
03500      ,{{       90,       90,     -130,      90,     -440} /* GC,UA,C,E,C */
03501      ,{{      870,      870,      650,      870,      340} /* GC,UA,C,E,G */
03502      ,{{     -40,     -40,     -260,     -40,     -570} /* GC,UA,C,E,U */
03503      }
03504      ,{{{      220,      220,      0,      220,     -310} /* GC,UA,C,A,E */
03505      ,{{      220,      220,      0,      220,     -310} /* GC,UA,C,A,A */
03506      ,{{     -60,     -60,     -280,     -60,     -590} /* GC,UA,C,A,C */
03507      ,{{    -1160,    -1180,    -1180,    -1160,    -1470} /* GC,UA,C,A,G */
03508      ,{{     -60,     -60,     -280,     -60,     -590} /* GC,UA,C,A,U */
03509      }
03510      ,{{{       90,       90,     -130,      90,     -440} /* GC,UA,C,C,E */
03511      ,{{       90,       90,     -130,      90,     -440} /* GC,UA,C,C,A */
03512      ,{{       90,       90,     -130,      90,     -440} /* GC,UA,C,C,C */
03513      ,{{       90,       90,     -130,      90,     -440} /* GC,UA,C,C,G */
03514      ,{{     -40,     -40,     -260,     -40,     -570} /* GC,UA,C,C,U */
03515      }
03516      ,{{{      870,      870,      650,      870,      340} /* GC,UA,C,G,E */
03517      ,{{    -1460,    -1480,    -1460,    -1480,    -1770} /* GC,UA,C,G,A */
03518      ,{{     -60,     -60,     -280,     -60,     -590} /* GC,UA,C,G,C */
03519      ,{{      870,      870,      650,      870,      340} /* GC,UA,C,G,G */
03520      ,{{     -60,     -60,     -280,     -60,     -590} /* GC,UA,C,G,U */
03521      }
03522      ,{{{       90,       90,     -130,      90,     -440} /* GC,UA,C,U,E */
03523      ,{{       90,       90,     -130,      90,     -440} /* GC,UA,C,U,A */
03524      ,{{     -350,     -350,     -570,     -350,     -880} /* GC,UA,C,U,C */
03525      ,{{       90,       90,     -130,      90,     -440} /* GC,UA,C,U,G */
03526      ,{{    -850,    -850,    -1070,    -850,    -1380} /* GC,UA,C,U,U */
03527      }
03528      }
03529      ,{{{      960,     -410,      960,      850,      960} /* GC,UA,G,E,E */
03530      ,{{      850,     -520,      300,      850,      300} /* GC,UA,G,E,A */
03531      ,{{      720,     -410,      170,      720,      170} /* GC,UA,G,E,C */
03532      ,{{      960,     -650,      960,      720,      960} /* GC,UA,G,E,G */
03533      ,{{      590,     -540,      40,      590,      40} /* GC,UA,G,E,U */
03534      }
03535      ,{{{      850,     -520,      300,      850,      300} /* GC,UA,G,A,E */
03536      ,{{      850,     -520,      300,      850,      300} /* GC,UA,G,A,A */
03537      ,{{      570,     -800,      20,      570,      20} /* GC,UA,G,A,C */
03538      ,{{    -1100,    -1920,    -1100,    -1810,    -1100} /* GC,UA,G,A,G */
03539      ,{{      570,     -800,      20,      570,      20} /* GC,UA,G,A,U */
03540      }
03541      ,{{{      720,     -410,      170,      720,      170} /* GC,UA,G,C,E */
03542      ,{{      720,     -650,      170,      720,      170} /* GC,UA,G,C,A */
03543      ,{{      720,     -410,      170,      720,      170} /* GC,UA,G,C,C */
03544      ,{{      720,     -650,      170,      720,      170} /* GC,UA,G,C,G */
03545      ,{{      590,     -540,      40,      590,      40} /* GC,UA,G,C,U */
03546      }
03547      ,{{{      960,     -800,      960,      570,      960} /* GC,UA,G,G,E */
03548      ,{{    -1400,    -2220,    -1400,    -2110,    -1400} /* GC,UA,G,G,A */
03549      ,{{      570,     -800,      20,      570,      20} /* GC,UA,G,G,C */
03550      ,{{      960,    -1120,      960,    -1000,      960} /* GC,UA,G,G,G */
03551      ,{{      570,     -800,      20,      570,      20} /* GC,UA,G,G,U */
03552      }
03553      ,{{{      720,     -650,      170,      720,      170} /* GC,UA,G,U,E */
03554      ,{{      720,     -650,      170,      720,      170} /* GC,UA,G,U,A */
03555      ,{{      280,     -850,     -260,      280,     -260} /* GC,UA,G,U,C */
03556      ,{{      720,     -650,      170,      720,      170} /* GC,UA,G,U,G */
03557      ,{{     -760,    -1590,     -760,    -1470,     -760} /* GC,UA,G,U,U */
03558      }
```

```

03559    }
03560    ,{{{    870,    870,    650,    870,    250} /* GC,UA,U,E,E */
03561    ,{    250,    220,    0,    220,    250} /* GC,UA,U,E,A */
03562    ,{    90,    90,   -130,    90,   -110} /* GC,UA,U,E,C */
03563    ,{    870,    870,    650,    870,   -110} /* GC,UA,U,E,G */
03564    ,{   -40,   -40,   -260,   -40,   -240} /* GC,UA,U,E,U */
03565    }
03566    ,{{{    250,    220,    0,    220,    250} /* GC,UA,U,A,E */
03567    ,{    250,    220,    0,    220,    250} /* GC,UA,U,A,A */
03568    ,{   -60,   -60,   -280,   -60,   -260} /* GC,UA,U,A,C */
03569    ,{ -1160, -1180, -1160, -1180, -1390} /* GC,UA,U,A,G */
03570    ,{   -60,   -60,   -280,   -60,   -260} /* GC,UA,U,A,U */
03571    }
03572    ,{{{    90,    90,   -130,    90,   -110} /* GC,UA,U,C,E */
03573    ,{    90,    90,   -130,    90,   -110} /* GC,UA,U,C,A */
03574    ,{    90,    90,   -130,    90,   -110} /* GC,UA,U,C,C */
03575    ,{    90,    90,   -130,    90,   -110} /* GC,UA,U,C,G */
03576    ,{   -40,   -40,   -260,   -40,   -240} /* GC,UA,U,C,U */
03577    }
03578    ,{{{    870,    870,    650,    870,   -260} /* GC,UA,U,G,E */
03579    ,{ -1460, -1480, -1460, -1480, -1690} /* GC,UA,U,G,A */
03580    ,{   -60,   -60,   -280,   -60,   -260} /* GC,UA,U,G,C */
03581    ,{    870,    870,    650,    870,   -580} /* GC,UA,U,G,G */
03582    ,{   -60,   -60,   -280,   -60,   -260} /* GC,UA,U,G,U */
03583    }
03584    ,{{{    90,    90,   -130,    90,   -110} /* GC,UA,U,U,E */
03585    ,{    90,    90,   -130,    90,   -110} /* GC,UA,U,U,A */
03586    ,{ -350, -350,   -570, -350,   -550} /* GC,UA,U,U,C */
03587    ,{    90,    90,   -130,    90,   -110} /* GC,UA,U,U,G */
03588    ,{  -850,  -850, -1070,  -850, -1050} /* GC,UA,U,U,U */
03589    }
03590    }
03591    }
03592    ,{{{    1320,    1320,    960,    870,    960} /* GC,NN,E,E,E */
03593    ,{    850,    670,    540,    850,    300} /* GC,NN,E,E,A */
03594    ,{    720,    540,    170,    720,    170} /* GC,NN,E,E,C */
03595    ,{    1320,    1320,    960,    870,    960} /* GC,NN,E,E,G */
03596    ,{    590,    410,    40,    590,    40} /* GC,NN,E,E,U */
03597    }
03598    ,{{{    850,    670,    300,    850,    300} /* GC,NN,E,A,E */
03599    ,{    850,    670,    300,    850,    300} /* GC,NN,E,A,A */
03600    ,{    570,    390,    20,    570,    20} /* GC,NN,E,A,C */
03601    ,{ -350, -350,   -870,   -960,   -870} /* GC,NN,E,A,G */
03602    ,{    570,    390,    20,    570,    20} /* GC,NN,E,A,U */
03603    }
03604    ,{{{    720,    540,    170,    720,    170} /* GC,NN,E,C,E */
03605    ,{    720,    540,    170,    720,    170} /* GC,NN,E,C,A */
03606    ,{    720,    540,    170,    720,    170} /* GC,NN,E,C,C */
03607    ,{    720,    540,    170,    720,    170} /* GC,NN,E,C,G */
03608    ,{    590,    410,    40,    590,    40} /* GC,NN,E,C,U */
03609    }
03610    ,{{{    1320,    1320,    960,    870,    960} /* GC,NN,E,G,E */
03611    ,{    540,   -100,    540,   -1050,   -810} /* GC,NN,E,G,A */
03612    ,{    570,    390,    20,    570,    20} /* GC,NN,E,G,C */
03613    ,{    1320,    1320,    960,    870,    960} /* GC,NN,E,G,G */
03614    ,{    570,    390,    20,    570,    20} /* GC,NN,E,G,U */
03615    }
03616    ,{{{    720,    540,    170,    720,    170} /* GC,NN,E,U,E */
03617    ,{    720,    540,    170,    720,    170} /* GC,NN,E,U,A */
03618    ,{    480,    300,   -60,    480,   -60} /* GC,NN,E,U,C */
03619    ,{    720,    540,    170,    720,    170} /* GC,NN,E,U,G */
03620    ,{   -160,   -160,   -400,   -230,   -760} /* GC,NN,E,U,U */
03621    }
03622    }
03623    ,{{{    1320,    1320,    960,    70,    960} /* GC,NN,A,E,E */
03624    ,{    670,    670,    300,   -40,    300} /* GC,NN,A,E,A */
03625    ,{    540,    540,    170,    70,    170} /* GC,NN,A,E,C */
03626    ,{    1320,    1320,    960,   -170,    960} /* GC,NN,A,E,G */
03627    ,{    410,    410,    40,   -60,    40} /* GC,NN,A,E,U */
03628    }
03629    ,{{{    670,    670,    300,   -40,    300} /* GC,NN,A,A,E */
03630    ,{    670,    670,    300,   -40,    300} /* GC,NN,A,A,A */
03631    ,{    390,    390,    20,   -320,    20} /* GC,NN,A,A,C */
03632    ,{   -730,   -730, -1100, -1450,   -870} /* GC,NN,A,A,G */
03633    ,{    390,    390,    20,   -320,    20} /* GC,NN,A,A,U */
03634    }
03635    ,{{{    540,    540,    170,    70,    170} /* GC,NN,A,C,E */
03636    ,{    540,    540,    170,   -170,    170} /* GC,NN,A,C,A */
03637    ,{    540,    540,    170,    70,    170} /* GC,NN,A,C,C */
03638    ,{    540,    540,    170,   -170,    170} /* GC,NN,A,C,G */
03639    ,{    410,    410,    40,   -60,    40} /* GC,NN,A,C,U */
03640    }
03641    ,{{{    1320,    1320,    960,   -320,    960} /* GC,NN,A,G,E */
03642    ,{    10,   -600,    10,  -1320,   -970} /* GC,NN,A,G,A */
03643    ,{    390,    390,    20,   -320,    20} /* GC,NN,A,G,C */
03644    ,{    1320,    1320,    960,   -640,    960} /* GC,NN,A,G,G */
03645    ,{    390,    390,    20,   -320,    20} /* GC,NN,A,G,U */

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```
03646     }
03647     ,{{ 540, 540, 170, -170, 170} /* GC,NN,A,U,E */
03648     ,{{ 540, 540, 170, -170, 170} /* GC,NN,A,U,A */
03649     ,{{ 300, 300, -60, -170, -60} /* GC,NN,A,U,C */
03650     ,{{ 540, 540, 170, -170, 170} /* GC,NN,A,U,G */
03651     ,{{ -160, -160, -400, -1110, -760} /* GC,NN,A,U,U */
03652     }
03653     }
03654     ,{{{ 870, 870, 650, 870, 340} /* GC,NN,C,E,E */
03655     ,{{ 540, 220, 540, 220, -310} /* GC,NN,C,E,A */
03656     ,{{ 90, 90, -130, 90, -440} /* GC,NN,C,E,C */
03657     ,{{ 870, 870, 650, 870, 340} /* GC,NN,C,E,G */
03658     ,{{ -40, -40, -260, -40, -570} /* GC,NN,C,E,U */
03659     }
03660     ,{{{ 220, 220, 0, 220, -310} /* GC,NN,C,A,E */
03661     ,{{ 220, 220, 0, 220, -310} /* GC,NN,C,A,A */
03662     ,{{ -60, -60, -280, -60, -590} /* GC,NN,C,A,C */
03663     ,{{ -350, -350, -940, -960, -1250} /* GC,NN,C,A,G */
03664     ,{{ -60, -60, -280, -60, -590} /* GC,NN,C,A,U */
03665     }
03666     ,{{{ 90, 90, -130, 90, -440} /* GC,NN,C,C,E */
03667     ,{{ 90, 90, -130, 90, -440} /* GC,NN,C,C,A */
03668     ,{{ 90, 90, -130, 90, -440} /* GC,NN,C,C,C */
03669     ,{{ 90, 90, -130, 90, -440} /* GC,NN,C,C,G */
03670     ,{{ -40, -40, -260, -40, -570} /* GC,NN,C,C,U */
03671     }
03672     ,{{{ 870, 870, 650, 870, 340} /* GC,NN,C,G,E */
03673     ,{{ 540, -100, 540, -1050, -1340} /* GC,NN,C,G,A */
03674     ,{{ -60, -60, -280, -60, -590} /* GC,NN,C,G,C */
03675     ,{{ 870, 870, 650, 870, 340} /* GC,NN,C,G,G */
03676     ,{{ -60, -60, -280, -60, -590} /* GC,NN,C,G,U */
03677     }
03678     ,{{{ 90, 90, -130, 90, -440} /* GC,NN,C,U,E */
03679     ,{{ 90, 90, -130, 90, -440} /* GC,NN,C,U,A */
03680     ,{{ -140, -140, -360, -140, -670} /* GC,NN,C,U,C */
03681     ,{{ 90, 90, -130, 90, -440} /* GC,NN,C,U,G */
03682     ,{{ -850, -850, -1070, -850, -1380} /* GC,NN,C,U,U */
03683     }
03684     }
03685     ,{{{ 960, -410, 960, 850, 960} /* GC,NN,G,E,E */
03686     ,{{ 850, -520, 300, 850, 300} /* GC,NN,G,E,A */
03687     ,{{ 720, -410, 170, 720, 170} /* GC,NN,G,E,C */
03688     ,{{ 960, -650, 960, 720, 960} /* GC,NN,G,E,G */
03689     ,{{ 590, -540, 40, 590, 40} /* GC,NN,G,E,U */
03690     }
03691     ,{{{ 850, -520, 300, 850, 300} /* GC,NN,G,A,E */
03692     ,{{ 850, -520, 300, 850, 300} /* GC,NN,G,A,A */
03693     ,{{ 570, -800, 20, 570, 20} /* GC,NN,G,A,C */
03694     ,{{ -870, -1920, -870, -1370, -870} /* GC,NN,G,A,G */
03695     ,{{ 570, -800, 20, 570, 20} /* GC,NN,G,A,U */
03696     }
03697     ,{{{ 720, -410, 170, 720, 170} /* GC,NN,G,C,E */
03698     ,{{ 720, -650, 170, 720, 170} /* GC,NN,G,C,A */
03699     ,{{ 720, -410, 170, 720, 170} /* GC,NN,G,C,C */
03700     ,{{ 720, -650, 170, 720, 170} /* GC,NN,G,C,G */
03701     ,{{ 590, -540, 40, 590, 40} /* GC,NN,G,C,U */
03702     }
03703     ,{{{ 960, -800, 960, 570, 960} /* GC,NN,G,G,E */
03704     ,{{ -970, -1790, -970, -1680, -970} /* GC,NN,G,G,A */
03705     ,{{ 570, -800, 20, 570, 20} /* GC,NN,G,G,C */
03706     ,{{ 960, -1120, 960, -1000, 960} /* GC,NN,G,G,G */
03707     ,{{ 570, -800, 20, 570, 20} /* GC,NN,G,G,U */
03708     }
03709     ,{{{ 720, -640, 170, 720, 170} /* GC,NN,G,U,E */
03710     ,{{ 720, -650, 170, 720, 170} /* GC,NN,G,U,A */
03711     ,{{ 480, -640, -60, 480, -60} /* GC,NN,G,U,C */
03712     ,{{ 720, -650, 170, 720, 170} /* GC,NN,G,U,G */
03713     ,{{ -230, -1520, -760, -230, -760} /* GC,NN,G,U,U */
03714     }
03715     }
03716     ,{{{ 870, 870, 650, 870, 250} /* GC,NN,U,E,E */
03717     ,{{ 250, 220, 0, 220, 250} /* GC,NN,U,E,A */
03718     ,{{ 90, 90, -130, 90, -110} /* GC,NN,U,E,C */
03719     ,{{ 870, 870, 650, 870, -110} /* GC,NN,U,E,G */
03720     ,{{ -40, -40, -260, -40, -240} /* GC,NN,U,E,U */
03721     }
03722     ,{{{ 250, 220, 0, 220, 250} /* GC,NN,U,A,E */
03723     ,{{ 250, 220, 0, 220, 250} /* GC,NN,U,A,A */
03724     ,{{ -60, -60, -280, -60, -260} /* GC,NN,U,A,C */
03725     ,{{ -940, -960, -940, -960, -1360} /* GC,NN,U,A,G */
03726     ,{{ -60, -60, -280, -60, -260} /* GC,NN,U,A,U */
03727     }
03728     ,{{{ 90, 90, -130, 90, -90} /* GC,NN,U,C,E */
03729     ,{{ 90, 90, -130, 90, -90} /* GC,NN,U,C,A */
03730     ,{{ 90, 90, -130, 90, -110} /* GC,NN,U,C,C */
03731     ,{{ 90, 90, -130, 90, -110} /* GC,NN,U,C,G */
03732     ,{{ -40, -40, -260, -40, -240} /* GC,NN,U,C,U */
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03733      }
03734      ,{{      870,      870,      650,      870,      -260} /* GC,NN,U,G,E */
03735      ,{{      -810,     -1050,     -1030,     -1050,     -810} /* GC,NN,U,G,A */
03736      ,{{      -60,      -60,      -280,      -60,      -260} /* GC,NN,U,G,C */
03737      ,{{      870,      870,      650,      870,      -580} /* GC,NN,U,G,G */
03738      ,{{      -60,      -60,      -280,      -60,      -260} /* GC,NN,U,G,U */
03739      }
03740      ,{{      90,      90,      -130,      90,      -110} /* GC,NN,U,U,E */
03741      ,{{      90,      90,      -130,      90,      -110} /* GC,NN,U,U,A */
03742      ,{{     -140,     -140,     -360,     -140,     -350} /* GC,NN,U,U,C */
03743      ,{{      90,      90,      -130,      90,      -110} /* GC,NN,U,U,G */
03744      ,{{     -850,     -850,     -1070,     -850,     -1050} /* GC,NN,U,U,U */
03745      }
03746      }
03747      }
03748      }
03749      ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,E,E */
03750      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,E,A */
03751      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,E,C */
03752      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,E,G */
03753      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,E,U */
03754      }
03755      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,A,E */
03756      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,A,A */
03757      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,A,C */
03758      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,A,G */
03759      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,A,U */
03760      }
03761      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,C,E */
03762      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,C,A */
03763      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,C,C */
03764      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,C,G */
03765      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,C,U */
03766      }
03767      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,G,E */
03768      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,G,A */
03769      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,G,C */
03770      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,G,G */
03771      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,G,U */
03772      }
03773      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,U,E */
03774      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,U,A */
03775      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,U,C */
03776      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,U,G */
03777      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,E,U,U */
03778      }
03779      }
03780      ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,E,E */
03781      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,E,A */
03782      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,E,C */
03783      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,E,G */
03784      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,E,U */
03785      }
03786      ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,A,E */
03787      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,A,A */
03788      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,A,C */
03789      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,A,G */
03790      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,A,U */
03791      }
03792      ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,C,E */
03793      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,C,A */
03794      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,C,C */
03795      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,C,G */
03796      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,C,U */
03797      }
03798      ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,G,E */
03799      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,G,A */
03800      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,G,C */
03801      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,G,G */
03802      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,G,U */
03803      }
03804      ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,E */
03805      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,A */
03806      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,C */
03807      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,G */
03808      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,A,U,U */
03809      }
03810      }
03811      ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,E */
03812      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,A */
03813      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,C */
03814      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,G */
03815      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,E,U */
03816      }
03817      ,{{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,E */
03818      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,A */
03819      ,{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,C */

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03820      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,G */
03821      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,A,U */
03822      }
03823      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,E */
03824      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,A */
03825      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,C */
03826      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,G */
03827      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,C,U */
03828      }
03829      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,E */
03830      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,A */
03831      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,C */
03832      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,G */
03833      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,G,U */
03834      }
03835      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,E */
03836      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,A */
03837      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,C */
03838      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,G */
03839      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,C,U,U */
03840      }
03841      }
03842      , {{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,E */
03843      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,A */
03844      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,C */
03845      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,G */
03846      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,E,U */
03847      }
03848      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,E */
03849      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,A */
03850      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,C */
03851      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,G */
03852      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,A,U */
03853      }
03854      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,E */
03855      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,A */
03856      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,C */
03857      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,G */
03858      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,C,U */
03859      }
03860      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,E */
03861      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,A */
03862      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,C */
03863      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,G */
03864      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,G,U */
03865      }
03866      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,E */
03867      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,A */
03868      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,C */
03869      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,G */
03870      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,G,U,U */
03871      }
03872      }
03873      , {{{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,E */
03874      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,A */
03875      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,C */
03876      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,G */
03877      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,E,U */
03878      }
03879      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,E */
03880      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,A */
03881      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,C */
03882      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,G */
03883      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,A,U */
03884      }
03885      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,E */
03886      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,A */
03887      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,C */
03888      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,G */
03889      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,C,U */
03890      }
03891      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,E */
03892      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,A */
03893      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,C */
03894      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,G */
03895      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,G,U */
03896      }
03897      , {{      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,E */
03898      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,A */
03899      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,C */
03900      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,G */
03901      , {      INF,      INF,      INF,      INF,      INF} /* GU,NP,U,U,U */
03902      }
03903      }
03904      }
03905      , {{{      240,      -780,      -870,      240,      -870} /* GU,CG,E,E,E */
03906      , {      190,      -1060,      -1060,      190,      -970} /* GU,CG,E,E,A */

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03907      , {      240,    -780,   -1010,    240,   -1010} /* GU,CG,E,E,C */
03908      , {      190,    -870,    -870,    190,    -870} /* GU,CG,E,E,G */
03909      , {      130,    -890,   -1120,    130,   -1120} /* GU,CG,E,E,U */
03910      }
03911      , {{      40,    -1210,   -1180,    40,    -970} /* GU,CG,E,A,E */
03912      , {      40,    -1210,   -1210,    40,    -970} /* GU,CG,E,A,A */
03913      , {     -270,   -1520,   -1520,   -270,   -1520} /* GU,CG,E,A,C */
03914      , {    -1180,   -1420,   -1180,   -1250,   -1180} /* GU,CG,E,A,G */
03915      , {     -270,   -1520,   -1520,   -270,   -1520} /* GU,CG,E,A,U */
03916      }
03917      , {{      190,    -840,   -1060,    190,   -1060} /* GU,CG,E,C,E */
03918      , {      190,    -1060,   -1060,    190,   -1060} /* GU,CG,E,C,A */
03919      , {      180,    -840,   -1070,    180,   -1070} /* GU,CG,E,C,C */
03920      , {      190,   -1060,   -1060,    190,   -1060} /* GU,CG,E,C,G */
03921      , {      130,    -890,   -1120,    130,   -1120} /* GU,CG,E,C,U */
03922      }
03923      , {{     -270,    -870,    -870,   -270,    -870} /* GU,CG,E,G,E */
03924      , {     -1470,   -1710,   -1470,  -1530,   -1470} /* GU,CG,E,G,A */
03925      , {     -270,   -1520,   -1520,   -270,   -1520} /* GU,CG,E,G,C */
03926      , {     -870,    -870,    -870,   -870,    -870} /* GU,CG,E,G,G */
03927      , {     -270,   -1520,   -1520,   -270,   -1520} /* GU,CG,E,G,U */
03928      }
03929      , {{      240,    -780,   -1010,    240,   -1010} /* GU,CG,E,U,E */
03930      , {      190,   -1060,   -1060,    190,   -1060} /* GU,CG,E,U,A */
03931      , {      240,    -780,   -1010,    240,   -1010} /* GU,CG,E,U,C */
03932      , {      190,   -1060,   -1060,    190,   -1060} /* GU,CG,E,U,G */
03933      , {    -1680,   -1790,   -1850,  -1680,   -1850} /* GU,CG,E,U,U */
03934      }
03935      }
03936      , {{{     -590,   -1050,    -870,   -590,    -870} /* GU,CG,A,E,E */
03937      , {     -890,   -1240,   -1060,   -890,   -1060} /* GU,CG,A,E,A */
03938      , {     -590,   -1190,   -1010,   -590,   -1010} /* GU,CG,A,E,C */
03939      , {     -870,   -1050,    -870,   -890,    -870} /* GU,CG,A,E,G */
03940      , {     -700,   -1300,   -1120,   -700,   -1120} /* GU,CG,A,E,U */
03941      }
03942      , {{{    -1030,   -1370,   -1210,  -1030,   -1210} /* GU,CG,A,A,E */
03943      , {    -1030,   -1370,   -1210,  -1030,   -1210} /* GU,CG,A,A,A */
03944      , {    -1340,   -1700,   -1520,  -1340,   -1520} /* GU,CG,A,A,C */
03945      , {    -1250,   -1600,   -1420,  -1250,   -1420} /* GU,CG,A,A,G */
03946      , {    -1340,   -1700,   -1520,  -1340,   -1520} /* GU,CG,A,A,U */
03947      }
03948      , {{{     -650,   -1240,   -1060,   -650,   -1060} /* GU,CG,A,C,E */
03949      , {     -890,   -1240,   -1060,   -890,   -1060} /* GU,CG,A,C,A */
03950      , {     -650,   -1250,   -1070,   -650,   -1070} /* GU,CG,A,C,C */
03951      , {     -890,   -1240,   -1060,   -890,   -1060} /* GU,CG,A,C,G */
03952      , {     -700,   -1300,   -1120,   -700,   -1120} /* GU,CG,A,C,U */
03953      }
03954      , {{{     -870,   -1050,    -870,  -1340,    -870} /* GU,CG,A,G,E */
03955      , {    -1530,   -1890,   -1710,  -1530,   -1710} /* GU,CG,A,G,A */
03956      , {    -1340,   -1700,   -1520,  -1340,   -1520} /* GU,CG,A,G,C */
03957      , {     -870,   -1050,    -870,  -1940,    -870} /* GU,CG,A,G,G */
03958      , {    -1340,   -1700,   -1520,  -1340,   -1520} /* GU,CG,A,G,U */
03959      }
03960      , {{{     -590,   -1190,   -1010,   -590,   -1010} /* GU,CG,A,U,E */
03961      , {     -890,   -1240,   -1060,   -890,   -1060} /* GU,CG,A,U,A */
03962      , {     -590,   -1190,   -1010,   -590,   -1010} /* GU,CG,A,U,C */
03963      , {     -890,   -1240,   -1060,   -890,   -1060} /* GU,CG,A,U,G */
03964      , {    -1680,   -1790,   -1850,  -1680,   -1850} /* GU,CG,A,U,U */
03965      }
03966      }
03967      , {{{     -870,    -870,    -870,   -870,    -870} /* GU,CG,C,E,E */
03968      , {    -1060,   -1060,   -1060,  -1060,   -1060} /* GU,CG,C,E,A */
03969      , {    -1010,   -1010,   -1010,  -1010,   -1010} /* GU,CG,C,E,C */
03970      , {     -870,    -870,    -870,   -870,    -870} /* GU,CG,C,E,G */
03971      , {    -1120,   -1120,   -1120,  -1120,   -1120} /* GU,CG,C,E,U */
03972      }
03973      , {{{    -1180,   -1210,   -1180,  -1210,   -1180} /* GU,CG,C,A,E */
03974      , {    -1210,   -1210,   -1210,  -1210,   -1210} /* GU,CG,C,A,A */
03975      , {    -1520,   -1520,   -1520,  -1520,   -1520} /* GU,CG,C,A,C */
03976      , {    -1180,   -1420,   -1180,  -1420,   -1180} /* GU,CG,C,A,G */
03977      , {    -1520,   -1520,   -1520,  -1520,   -1520} /* GU,CG,C,A,U */
03978      }
03979      , {{{    -1060,   -1060,   -1060,  -1060,   -1060} /* GU,CG,C,C,E */
03980      , {    -1060,   -1060,   -1060,  -1060,   -1060} /* GU,CG,C,C,A */
03981      , {    -1070,   -1070,   -1070,  -1070,   -1070} /* GU,CG,C,C,C */
03982      , {    -1060,   -1060,   -1060,  -1060,   -1060} /* GU,CG,C,C,G */
03983      , {    -1120,   -1120,   -1120,  -1120,   -1120} /* GU,CG,C,C,U */
03984      }
03985      , {{{     -870,    -870,    -870,   -870,    -870} /* GU,CG,C,G,E */
03986      , {    -1470,   -1710,   -1470,  -1710,   -1470} /* GU,CG,C,G,A */
03987      , {    -1520,   -1520,   -1520,  -1520,   -1520} /* GU,CG,C,G,C */
03988      , {     -870,    -870,    -870,   -870,    -870} /* GU,CG,C,G,G */
03989      , {    -1520,   -1520,   -1520,  -1520,   -1520} /* GU,CG,C,G,U */
03990      }
03991      , {{{    -1010,   -1010,   -1010,  -1010,   -1010} /* GU,CG,C,U,E */
03992      , {    -1060,   -1060,   -1060,  -1060,   -1060} /* GU,CG,C,U,A */
03993      , {    -1010,   -1010,   -1010,  -1010,   -1010} /* GU,CG,C,U,C */

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03994 , { -1060, -1060, -1060, -1060, -1060} /* GU,CG,C,U,G */
03995 , { -1850, -1850, -1850, -1850, -1850} /* GU,CG,C,U,U */
03996 }
03997
03998 , {{{ 240, -780, -870, 240, -870} /* GU,CG,G,E,E */
03999 , { 190, -1080, -1060, 190, -1060} /* GU,CG,G,E,A */
04000 , { 240, -780, -1010, 240, -1010} /* GU,CG,G,E,C */
04001 , { 190, -1080, -870, 190, -870} /* GU,CG,G,E,G */
04002 , { 130, -890, -1120, 130, -1120} /* GU,CG,G,E,U */
04003 }
04004 , {{{ 40, -1220, -1210, 40, -1210} /* GU,CG,G,A,E */
04005 , { 40, -1220, -1210, 40, -1210} /* GU,CG,G,A,A */
04006 , { -270, -1530, -1520, -270, -1520} /* GU,CG,G,A,C */
04007 , { -1420, -1440, -1420, -1420, -1420} /* GU,CG,G,A,G */
04008 , { -270, -1530, -1520, -270, -1520} /* GU,CG,G,A,U */
04009 }
04010 , {{{ 190, -840, -1060, 190, -1060} /* GU,CG,G,C,E */
04011 , { 190, -1080, -1060, 190, -1060} /* GU,CG,G,C,A */
04012 , { 180, -840, -1070, 180, -1070} /* GU,CG,G,C,C */
04013 , { 190, -1080, -1060, 190, -1060} /* GU,CG,G,C,G */
04014 , { 130, -890, -1120, 130, -1120} /* GU,CG,G,C,U */
04015 }
04016 , {{{ -270, -1530, -870, -270, -870} /* GU,CG,G,G,E */
04017 , { -1710, -1720, -1710, -1710, -1710} /* GU,CG,G,G,A */
04018 , { -270, -1530, -1520, -270, -1520} /* GU,CG,G,G,C */
04019 , { -870, -2130, -870, -2120, -870} /* GU,CG,G,G,G */
04020 , { -270, -1530, -1520, -270, -1520} /* GU,CG,G,G,U */
04021 }
04022 , {{{ 240, -780, -1010, 240, -1010} /* GU,CG,G,U,E */
04023 , { 190, -1080, -1060, 190, -1060} /* GU,CG,G,U,A */
04024 , { 240, -780, -1010, 240, -1010} /* GU,CG,G,U,C */
04025 , { 190, -1080, -1060, 190, -1060} /* GU,CG,G,U,G */
04026 , { -1850, -1870, -1850, -1850, -1850} /* GU,CG,G,U,U */
04027 }
04028 }
04029 , {{{ -870, -870, -870, -870, -970} /* GU,CG,U,E,E */
04030 , { -970, -1060, -1060, -1060, -970} /* GU,CG,U,E,A */
04031 , { -1010, -1010, -1010, -1010, -1010} /* GU,CG,U,E,C */
04032 , { -870, -870, -870, -870, -1060} /* GU,CG,U,E,G */
04033 , { -1120, -1120, -1120, -1120, -1120} /* GU,CG,U,E,U */
04034 }
04035 , {{{ -970, -1210, -1180, -1210, -970} /* GU,CG,U,A,E */
04036 , { -970, -1210, -1210, -1210, -970} /* GU,CG,U,A,A */
04037 , { -1520, -1520, -1520, -1520, -1520} /* GU,CG,U,A,C */
04038 , { -1180, -1420, -1180, -1420, -1420} /* GU,CG,U,A,G */
04039 , { -1520, -1520, -1520, -1520, -1520} /* GU,CG,U,A,U */
04040 }
04041 , {{{ -1060, -1060, -1060, -1060, -1060} /* GU,CG,U,C,E */
04042 , { -1060, -1060, -1060, -1060, -1060} /* GU,CG,U,C,A */
04043 , { -1070, -1070, -1070, -1070, -1070} /* GU,CG,U,C,C */
04044 , { -1060, -1060, -1060, -1060, -1060} /* GU,CG,U,C,G */
04045 , { -1120, -1120, -1120, -1120, -1120} /* GU,CG,U,C,U */
04046 }
04047 , {{{ -870, -870, -870, -870, -1520} /* GU,CG,U,G,E */
04048 , { -1470, -1710, -1470, -1710, -1710} /* GU,CG,U,G,A */
04049 , { -1520, -1520, -1520, -1520, -1520} /* GU,CG,U,G,C */
04050 , { -870, -870, -870, -870, -2120} /* GU,CG,U,G,G */
04051 , { -1520, -1520, -1520, -1520, -1520} /* GU,CG,U,G,U */
04052 }
04053 , {{{ -1010, -1010, -1010, -1010, -1010} /* GU,CG,U,U,E */
04054 , { -1060, -1060, -1060, -1060, -1060} /* GU,CG,U,U,A */
04055 , { -1010, -1010, -1010, -1010, -1010} /* GU,CG,U,U,C */
04056 , { -1060, -1060, -1060, -1060, -1060} /* GU,CG,U,U,G */
04057 , { -1850, -1850, -1850, -1850, -1850} /* GU,CG,U,U,U */
04058 }
04059 }
04060 }
04061 , {{{ 210, -870, -870, 210, -800} /* GU,GC,E,E,E */
04062 , { 210, -1040, -1040, 210, -800} /* GU,GC,E,E,A */
04063 , { -240, -1490, -1490, -240, -1490} /* GU,GC,E,E,C */
04064 , { -160, -870, -870, -160, -870} /* GU,GC,E,E,G */
04065 , { -240, -1490, -1490, -240, -1490} /* GU,GC,E,E,U */
04066 }
04067 , {{{ 210, -1040, -1040, 210, -800} /* GU,GC,E,A,E */
04068 , { 210, -1040, -1040, 210, -800} /* GU,GC,E,A,A */
04069 , { -240, -1490, -1490, -240, -1490} /* GU,GC,E,A,C */
04070 , { -1990, -2230, -1990, -2060, -1990} /* GU,GC,E,A,G */
04071 , { -240, -1490, -1490, -240, -1490} /* GU,GC,E,A,U */
04072 }
04073 , {{{ -160, -1410, -1410, -160, -1410} /* GU,GC,E,C,E */
04074 , { -160, -1410, -1410, -160, -1410} /* GU,GC,E,C,A */
04075 , { -460, -1490, -1710, -460, -1710} /* GU,GC,E,C,C */
04076 , { -160, -1410, -1410, -160, -1410} /* GU,GC,E,C,G */
04077 , { -460, -1490, -1710, -460, -1710} /* GU,GC,E,C,U */
04078 }
04079 , {{{ -240, -870, -870, -240, -870} /* GU,GC,E,G,E */
04080 , { -1520, -1760, -1520, -1580, -1520} /* GU,GC,E,G,A */
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04081      , {      -240,    -1490,    -1490,    -240,    -1490} /* GU,GC,E,G,C */
04082      , {      -870,     -870,     -870,     -870,     -870} /* GU,GC,E,G,G */
04083      , {      -240,    -1490,    -1490,    -240,    -1490} /* GU,GC,E,G,U */
04084      }
04085      , {{      -160,    -1410,    -1410,    -160,    -1410} /* GU,GC,E,U,E */
04086      , {      -160,    -1410,    -1410,    -160,    -1410} /* GU,GC,E,U,A */
04087      , {      -770,    -1800,    -2020,    -770,    -2020} /* GU,GC,E,U,C */
04088      , {      -160,    -1410,    -1410,    -160,    -1410} /* GU,GC,E,U,G */
04089      , {     -1520,    -1640,    -1700,    -1520,    -1700} /* GU,GC,E,U,U */
04090      }
04091      }
04092      , {{ {      -870,    -1050,     -870,     -870,     -870} /* GU,GC,A,E,E */
04093      , {      -870,    -1220,    -1040,     -870,    -1040} /* GU,GC,A,E,A */
04094      , {     -1300,    -1670,    -1490,    -1300,    -1490} /* GU,GC,A,E,C */
04095      , {      -870,    -1050,     -870,    -1230,     -870} /* GU,GC,A,E,G */
04096      , {     -1300,    -1640,    -1490,    -1300,    -1490} /* GU,GC,A,E,U */
04097      }
04098      , {{ {      -870,    -1220,    -1040,     -870,    -1040} /* GU,GC,A,A,E */
04099      , {      -870,    -1220,    -1040,     -870,    -1040} /* GU,GC,A,A,A */
04100      , {     -1320,    -1670,    -1490,    -1320,    -1490} /* GU,GC,A,A,C */
04101      , {     -2060,    -2410,    -2230,    -2060,    -2230} /* GU,GC,A,A,G */
04102      , {     -1320,    -1670,    -1490,    -1320,    -1490} /* GU,GC,A,A,U */
04103      }
04104      , {{ {     -1230,    -1590,    -1410,    -1230,    -1410} /* GU,GC,A,C,E */
04105      , {     -1230,    -1590,    -1410,    -1230,    -1410} /* GU,GC,A,C,A */
04106      , {     -1300,    -1890,    -1710,    -1300,    -1710} /* GU,GC,A,C,C */
04107      , {     -1230,    -1590,    -1410,    -1230,    -1410} /* GU,GC,A,C,G */
04108      , {     -1300,    -1890,    -1710,    -1300,    -1710} /* GU,GC,A,C,U */
04109      }
04110      , {{ {      -870,    -1050,     -870,    -1320,     -870} /* GU,GC,A,G,E */
04111      , {     -1580,    -1940,    -1760,    -1580,    -1760} /* GU,GC,A,G,A */
04112      , {     -1320,    -1670,    -1490,    -1320,    -1490} /* GU,GC,A,G,C */
04113      , {      -870,    -1050,     -870,    -1940,     -870} /* GU,GC,A,G,G */
04114      , {     -1320,    -1670,    -1490,    -1320,    -1490} /* GU,GC,A,G,U */
04115      }
04116      , {{ {     -1230,    -1590,    -1410,    -1230,    -1410} /* GU,GC,A,U,E */
04117      , {     -1230,    -1590,    -1410,    -1230,    -1410} /* GU,GC,A,U,A */
04118      , {     -1610,    -2200,    -2020,    -1610,    -2020} /* GU,GC,A,U,C */
04119      , {     -1230,    -1590,    -1410,    -1230,    -1410} /* GU,GC,A,U,G */
04120      , {     -1520,    -1640,    -1700,    -1520,    -1700} /* GU,GC,A,U,U */
04121      }
04122      }
04123      , {{ {      -870,     -870,     -870,     -870,     -870} /* GU,GC,C,E,E */
04124      , {     -1040,    -1040,    -1040,    -1040,    -1040} /* GU,GC,C,E,A */
04125      , {     -1490,    -1490,    -1490,    -1490,    -1490} /* GU,GC,C,E,C */
04126      , {      -870,     -870,     -870,     -870,     -870} /* GU,GC,C,E,G */
04127      , {     -1490,    -1490,    -1490,    -1490,    -1490} /* GU,GC,C,E,U */
04128      }
04129      , {{ {     -1040,    -1040,    -1040,    -1040,    -1040} /* GU,GC,C,A,E */
04130      , {     -1040,    -1040,    -1040,    -1040,    -1040} /* GU,GC,C,A,A */
04131      , {     -1490,    -1490,    -1490,    -1490,    -1490} /* GU,GC,C,A,C */
04132      , {     -1990,    -2230,    -1990,    -2230,    -1990} /* GU,GC,C,A,G */
04133      , {     -1490,    -1490,    -1490,    -1490,    -1490} /* GU,GC,C,A,U */
04134      }
04135      , {{ {     -1410,    -1410,    -1410,    -1410,    -1410} /* GU,GC,C,C,E */
04136      , {     -1410,    -1410,    -1410,    -1410,    -1410} /* GU,GC,C,C,A */
04137      , {     -1710,    -1710,    -1710,    -1710,    -1710} /* GU,GC,C,C,C */
04138      , {     -1410,    -1410,    -1410,    -1410,    -1410} /* GU,GC,C,C,G */
04139      , {     -1710,    -1710,    -1710,    -1710,    -1710} /* GU,GC,C,C,U */
04140      }
04141      , {{ {      -870,     -870,     -870,     -870,     -870} /* GU,GC,C,G,E */
04142      , {     -1520,    -1760,    -1520,    -1760,    -1520} /* GU,GC,C,G,A */
04143      , {     -1490,    -1490,    -1490,    -1490,    -1490} /* GU,GC,C,G,C */
04144      , {      -870,     -870,     -870,     -870,     -870} /* GU,GC,C,G,G */
04145      , {     -1490,    -1490,    -1490,    -1490,    -1490} /* GU,GC,C,G,U */
04146      }
04147      , {{ {     -1410,    -1410,    -1410,    -1410,    -1410} /* GU,GC,C,U,E */
04148      , {     -1410,    -1410,    -1410,    -1410,    -1410} /* GU,GC,C,U,A */
04149      , {     -2020,    -2020,    -2020,    -2020,    -2020} /* GU,GC,C,U,C */
04150      , {     -1410,    -1410,    -1410,    -1410,    -1410} /* GU,GC,C,U,G */
04151      , {     -1700,    -1700,    -1700,    -1700,    -1700} /* GU,GC,C,U,U */
04152      }
04153      }
04154      , {{ {      210,    -1060,     -870,     210,     -870} /* GU,GC,G,E,E */
04155      , {      210,    -1060,    -1040,     210,    -1040} /* GU,GC,G,E,A */
04156      , {     -240,    -1490,    -1490,    -240,    -1490} /* GU,GC,G,E,C */
04157      , {     -160,    -1420,     -870,    -160,     -870} /* GU,GC,G,E,G */
04158      , {     -240,    -1490,    -1490,    -240,    -1490} /* GU,GC,G,E,U */
04159      }
04160      , {{ {      210,    -1060,    -1040,     210,    -1040} /* GU,GC,G,A,E */
04161      , {      210,    -1060,    -1040,     210,    -1040} /* GU,GC,G,A,A */
04162      , {     -240,    -1510,    -1490,    -240,    -1490} /* GU,GC,G,A,C */
04163      , {     -2230,    -2250,    -2230,    -2230,    -2230} /* GU,GC,G,A,G */
04164      , {     -240,    -1510,    -1490,    -240,    -1490} /* GU,GC,G,A,U */
04165      }
04166      , {{ {     -160,    -1420,    -1410,     -160,    -1410} /* GU,GC,G,C,E */
04167      , {     -160,    -1420,    -1410,     -160,    -1410} /* GU,GC,G,C,A */

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04169 , { -160, -1420, -1410, -160, -1410} /* GU,GC,G,C,G */
04170 , { -460, -1490, -1710, -460, -1710} /* GU,GC,G,C,U */
04171 }
04172 , { { -240, -1510, -870, -240, -870} /* GU,GC,G,G,E */
04173 , { -1760, -1770, -1760, -1760, -1760} /* GU,GC,G,G,A */
04174 , { -240, -1510, -1490, -240, -1490} /* GU,GC,G,G,C */
04175 , { -870, -2130, -870, -2120, -870} /* GU,GC,G,G,G */
04176 , { -240, -1510, -1490, -240, -1490} /* GU,GC,G,G,U */
04177 }
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04179 , { -160, -1420, -1410, -160, -1410} /* GU,GC,G,U,A */
04180 , { -770, -1800, -2020, -770, -2020} /* GU,GC,G,U,C */
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04183 }
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04187 , { -1490, -1490, -1490, -1490, -1490} /* GU,GC,U,E,C */
04188 , { -870, -870, -870, -870, -1410} /* GU,GC,U,E,G */
04189 , { -1490, -1490, -1490, -1490, -1490} /* GU,GC,U,E,U */
04190 }
04191 , { { -800, -1040, -1040, -1040, -800} /* GU,GC,U,A,E */
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04194 , { -1990, -2230, -2230, -1990, -2230} /* GU,GC,U,A,G */
04195 , { -1490, -1490, -1490, -1490, -1490} /* GU,GC,U,A,U */
04196 }
04197 , { { -1410, -1410, -1410, -1410, -1410} /* GU,GC,U,C,E */
04198 , { -1410, -1410, -1410, -1410, -1410} /* GU,GC,U,C,A */
04199 , { -1710, -1710, -1710, -1710, -1710} /* GU,GC,U,C,C */
04200 , { -1410, -1410, -1410, -1410, -1410} /* GU,GC,U,C,G */
04201 , { -1710, -1710, -1710, -1710, -1710} /* GU,GC,U,C,U */
04202 }
04203 , { { -870, -870, -870, -870, -1490} /* GU,GC,U,G,E */
04204 , { -1520, -1760, -1520, -1760, -1760} /* GU,GC,U,G,A */
04205 , { -1490, -1490, -1490, -1490, -1490} /* GU,GC,U,G,C */
04206 , { -870, -870, -870, -870, -2120} /* GU,GC,U,G,G */
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04210 , { -1410, -1410, -1410, -1410, -1410} /* GU,GC,U,U,A */
04211 , { -2020, -2020, -2020, -2020, -2020} /* GU,GC,U,U,C */
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04214 }
04215 }
04216 }
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04220 , { -710, -710, -710, -710, -710} /* GU,GU,E,E,G */
04221 , { -710, -1730, -1960, -710, -1960} /* GU,GU,E,E,U */
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04223 , { { -710, -1960, -1730, -710, -1730} /* GU,GU,E,A,E */
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04225 , { -710, -1960, -1960, -710, -1960} /* GU,GU,E,A,C */
04226 , { -1730, -1970, -1730, -1800, -1730} /* GU,GU,E,A,G */
04227 , { -710, -1960, -1960, -710, -1960} /* GU,GU,E,A,U */
04228 }
04229 , { { -710, -1730, -1960, -710, -1960} /* GU,GU,E,C,E */
04230 , { -710, -1960, -1960, -710, -1960} /* GU,GU,E,C,A */
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04233 , { -710, -1730, -1960, -710, -1960} /* GU,GU,E,C,U */
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04235 , { { -710, -710, -710, -710, -710} /* GU,GU,E,G,E */
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04237 , { -710, -1960, -1960, -710, -1960} /* GU,GU,E,G,C */
04238 , { -710, -710, -710, -710, -710} /* GU,GU,E,G,G */
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04247 }
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04251 , { -710, -890, -710, -1780, -710} /* GU,GU,A,E,G */
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04254 , { { -1780, -2140, -1960, -1780, -1960} /* GU,GU,A,A,E */
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04282 , { -710, -710, -710, -710, -710} /* GU, GU, C, E, G */
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04313 , { -710, -1970, -710, -710, -710} /* GU, GU, G, E, G */
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04340 }
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04377 , { -150, -1180, -1400, -150, -1400} /* GU, UG, E, E, U */
04378 }
04379 , { { 360, -70, -890, 360, -650} /* GU, UG, E, A, E */
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04425 , { -150, -330, -150, -1230, -150} /* GU, UG, A, G, G */
04426 , { -1230, -1580, -1400, -1230, -1400} /* GU, UG, A, G, U */
04427 }
04428 , { { -990, -1340, -1400, -990, -1400} /* GU, UG, A, U, E */

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04447 ,{{{ -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,C,E */
04448 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,C,A */
04449 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,C,C */
04450 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,C,G */
04451 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,C,U */
04452 }
04453 ,{{{ -150, -150, -150, -150, -150} /* GU,UG,C,G,E */
04454 , { -1670, -1910, -1670, -1910, -1670} /* GU,UG,C,G,A */
04455 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,G,C */
04456 , { -150, -150, -150, -150, -150} /* GU,UG,C,G,G */
04457 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,G,U */
04458 }
04459 ,{{{ -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,U,E */
04460 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,U,A */
04461 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,U,C */
04462 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,U,G */
04463 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,C,U,U */
04464 }
04465 }
04466 ,{{{ 360, -910, -150, 360, -150} /* GU,UG,G,E,E */
04467 , { 360, -910, -890, 360, -890} /* GU,UG,G,E,A */
04468 , { -150, -1180, -1400, -150, -1400} /* GU,UG,G,E,C */
04469 , { -150, -1420, -150, -150, -150} /* GU,UG,G,E,G */
04470 , { -150, -1180, -1400, -150, -1400} /* GU,UG,G,E,U */
04471 }
04472 ,{{{ 360, -910, -890, 360, -890} /* GU,UG,G,A,E */
04473 , { 360, -910, -890, 360, -890} /* GU,UG,G,A,A */
04474 , { -150, -1420, -1400, -150, -1400} /* GU,UG,G,A,C */
04475 , { -1740, -3040, -1740, -1740, -1740} /* GU,UG,G,A,G */
04476 , { -150, -1420, -1400, -150, -1400} /* GU,UG,G,A,U */
04477 }
04478 ,{{{ -150, -1180, -1400, -150, -1400} /* GU,UG,G,C,E */
04479 , { -150, -1420, -1400, -150, -1400} /* GU,UG,G,C,A */
04480 , { -150, -1180, -1400, -150, -1400} /* GU,UG,G,C,C */
04481 , { -150, -1420, -1400, -150, -1400} /* GU,UG,G,C,G */
04482 , { -150, -1180, -1400, -150, -1400} /* GU,UG,G,C,U */
04483 }
04484 ,{{{ -150, -1420, -150, -150, -150} /* GU,UG,G,G,E */
04485 , { -1910, -1930, -1910, -1910, -1910} /* GU,UG,G,G,A */
04486 , { -150, -1420, -1400, -150, -1400} /* GU,UG,G,G,C */
04487 , { -150, -1420, -150, -1400, -150} /* GU,UG,G,G,G */
04488 , { -150, -1420, -1400, -150, -1400} /* GU,UG,G,G,U */
04489 }
04490 ,{{{ -150, -1180, -1400, -150, -1400} /* GU,UG,G,U,E */
04491 , { -150, -1420, -1400, -150, -1400} /* GU,UG,G,U,A */
04492 , { -150, -1180, -1400, -150, -1400} /* GU,UG,G,U,C */
04493 , { -150, -1420, -1400, -150, -1400} /* GU,UG,G,U,G */
04494 , { -1400, -1420, -1400, -1400, -1400} /* GU,UG,G,U,U */
04495 }
04496 }
04497 ,{{{ -150, -150, -150, -150, -650} /* GU,UG,U,E,E */
04498 , { -650, -890, -890, -890, -650} /* GU,UG,U,E,A */
04499 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,E,C */
04500 , { -150, -150, -150, -150, -1400} /* GU,UG,U,E,G */
04501 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,E,U */
04502 }
04503 ,{{{ -650, -890, -890, -890, -650} /* GU,UG,U,A,E */
04504 , { -650, -890, -890, -890, -650} /* GU,UG,U,A,A */
04505 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,A,C */
04506 , { -1500, -1740, -1500, -1740, -1740} /* GU,UG,U,A,G */
04507 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,A,U */
04508 }
04509 ,{{{ -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,C,E */
04510 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,C,A */
04511 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,C,C */
04512 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,C,G */
04513 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,C,U */
04514 }
04515 ,{{{ -150, -150, -150, -150, -1400} /* GU,UG,U,G,E */

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04516 , { -1670, -1910, -1670, -1910, -1910} /* GU,UG,U,G,A */
04517 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,G,C */
04518 , { -150, -150, -150, -150, -1400} /* GU,UG,U,G,G */
04519 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,G,U */
04520 }
04521 , { { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,U,E */
04522 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,U,A */
04523 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,U,C */
04524 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,U,G */
04525 , { -1400, -1400, -1400, -1400, -1400} /* GU,UG,U,U,U */
04526 }
04527 }
04528 }
04529 , { { { 940, 220, 220, 940, 220} /* GU,AU,E,E,E */
04530 , { 940, -310, -310, 940, -70} /* GU,AU,E,E,A */
04531 , { 640, -380, -610, 640, -610} /* GU,AU,E,E,C */
04532 , { 650, 220, 220, 650, 220} /* GU,AU,E,E,G */
04533 , { 640, -380, -610, 640, -610} /* GU,AU,E,E,U */
04534 }
04535 , { { 940, -310, -310, 940, -70} /* GU,AU,E,A,E */
04536 , { 940, -310, -310, 940, -70} /* GU,AU,E,A,A */
04537 , { 630, -620, -620, 630, -620} /* GU,AU,E,A,C */
04538 , { -1460, -1700, -1460, -1520, -1460} /* GU,AU,E,A,G */
04539 , { 630, -620, -620, 630, -620} /* GU,AU,E,A,U */
04540 }
04541 , { { 650, -380, -600, 650, -600} /* GU,AU,E,C,E */
04542 , { 650, -600, -600, 650, -600} /* GU,AU,E,C,A */
04543 , { 640, -380, -610, 640, -610} /* GU,AU,E,C,C */
04544 , { 650, -600, -600, 650, -600} /* GU,AU,E,C,G */
04545 , { 640, -380, -610, 640, -610} /* GU,AU,E,C,U */
04546 }
04547 , { { 630, 220, 220, 630, 220} /* GU,AU,E,G,E */
04548 , { -1280, -1520, -1280, -1340, -1280} /* GU,AU,E,G,A */
04549 , { 630, -620, -620, 630, -620} /* GU,AU,E,G,C */
04550 , { 220, 220, 220, 220, 220} /* GU,AU,E,G,G */
04551 , { 630, -620, -620, 630, -620} /* GU,AU,E,G,U */
04552 }
04553 , { { 650, -380, -600, 650, -600} /* GU,AU,E,U,E */
04554 , { 650, -600, -600, 650, -600} /* GU,AU,E,U,A */
04555 , { 640, -380, -610, 640, -610} /* GU,AU,E,U,C */
04556 , { 650, -600, -600, 650, -600} /* GU,AU,E,U,G */
04557 , { -1410, -1530, -1590, -1410, -1590} /* GU,AU,E,U,U */
04558 }
04559 }
04560 , { { { 220, 40, 220, -130, 220} /* GU,AU,A,E,E */
04561 , { -130, -490, -310, -130, -310} /* GU,AU,A,E,A */
04562 , { -190, -790, -610, -190, -610} /* GU,AU,A,E,C */
04563 , { 220, 40, 220, -430, 220} /* GU,AU,A,E,G */
04564 , { -190, -790, -610, -190, -610} /* GU,AU,A,E,U */
04565 }
04566 , { { -130, -490, -310, -130, -310} /* GU,AU,A,A,E */
04567 , { -130, -490, -310, -130, -310} /* GU,AU,A,A,A */
04568 , { -440, -800, -620, -440, -620} /* GU,AU,A,A,C */
04569 , { -1520, -1880, -1700, -1520, -1700} /* GU,AU,A,A,G */
04570 , { -440, -800, -620, -440, -620} /* GU,AU,A,A,U */
04571 }
04572 , { { -190, -780, -600, -190, -600} /* GU,AU,A,C,E */
04573 , { -430, -780, -600, -430, -600} /* GU,AU,A,C,A */
04574 , { -190, -790, -610, -190, -610} /* GU,AU,A,C,C */
04575 , { -430, -780, -600, -430, -600} /* GU,AU,A,C,G */
04576 , { -190, -790, -610, -190, -610} /* GU,AU,A,C,U */
04577 }
04578 , { { 220, 40, 220, -440, 220} /* GU,AU,A,G,E */
04579 , { -1340, -1700, -1520, -1340, -1520} /* GU,AU,A,G,A */
04580 , { -440, -800, -620, -440, -620} /* GU,AU,A,G,C */
04581 , { 220, 40, 220, -850, 220} /* GU,AU,A,G,G */
04582 , { -440, -800, -620, -440, -620} /* GU,AU,A,G,U */
04583 }
04584 , { { -190, -780, -600, -190, -600} /* GU,AU,A,U,E */
04585 , { -430, -780, -600, -430, -600} /* GU,AU,A,U,A */
04586 , { -190, -790, -610, -190, -610} /* GU,AU,A,U,C */
04587 , { -430, -780, -600, -430, -600} /* GU,AU,A,U,G */
04588 , { -1410, -1530, -1590, -1410, -1590} /* GU,AU,A,U,U */
04589 }
04590 }
04591 , { { { 220, 220, 220, 220, 220} /* GU,AU,C,E,E */
04592 , { -310, -310, -310, -310, -310} /* GU,AU,C,E,A */
04593 , { -610, -610, -610, -610, -610} /* GU,AU,C,E,C */
04594 , { 220, 220, 220, 220, 220} /* GU,AU,C,E,G */
04595 , { -610, -610, -610, -610, -610} /* GU,AU,C,E,U */
04596 }
04597 , { { -310, -310, -310, -310, -310} /* GU,AU,C,A,E */
04598 , { -310, -310, -310, -310, -310} /* GU,AU,C,A,A */
04599 , { -620, -620, -620, -620, -620} /* GU,AU,C,A,C */
04600 , { -1460, -1700, -1460, -1700, -1460} /* GU,AU,C,A,G */
04601 , { -620, -620, -620, -620, -620} /* GU,AU,C,A,U */
04602 }

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04603 ,{{ -600, -600, -600, -600, -600} /* GU,AU,C,C,E */
04604 ,{ -600, -600, -600, -600, -600} /* GU,AU,C,C,A */
04605 ,{ -610, -610, -610, -610, -610} /* GU,AU,C,C,C */
04606 ,{ -600, -600, -600, -600, -600} /* GU,AU,C,C,G */
04607 ,{ -610, -610, -610, -610, -610} /* GU,AU,C,C,U */
04608 }
04609 ,{{ 220, 220, 220, 220, 220} /* GU,AU,C,G,E */
04610 ,{ -1280, -1520, -1280, -1520, -1280} /* GU,AU,C,G,A */
04611 ,{ -620, -620, -620, -620, -620} /* GU,AU,C,G,C */
04612 ,{ 220, 220, 220, 220, 220} /* GU,AU,C,G,G */
04613 ,{ -620, -620, -620, -620, -620} /* GU,AU,C,G,U */
04614 }
04615 ,{{ -600, -600, -600, -600, -600} /* GU,AU,C,U,E */
04616 ,{ -600, -600, -600, -600, -600} /* GU,AU,C,U,A */
04617 ,{ -610, -610, -610, -610, -610} /* GU,AU,C,U,C */
04618 ,{ -600, -600, -600, -600, -600} /* GU,AU,C,U,G */
04619 ,{ -1590, -1590, -1590, -1590, -1590} /* GU,AU,C,U,U */
04620 }
04621 }
04622 ,{{{ 940, -320, 220, 940, 220} /* GU,AU,G,E,E */
04623 ,{ 940, -320, -310, 940, -310} /* GU,AU,G,E,A */
04624 ,{ 640, -380, -610, 640, -610} /* GU,AU,G,E,C */
04625 ,{ 650, -620, 220, 650, 220} /* GU,AU,G,E,G */
04626 ,{ 640, -380, -610, 640, -610} /* GU,AU,G,E,U */
04627 }
04628 ,{{ 940, -320, -310, 940, -310} /* GU,AU,G,A,E */
04629 ,{ 940, -320, -310, 940, -310} /* GU,AU,G,A,A */
04630 ,{ 630, -630, -620, 630, -620} /* GU,AU,G,A,C */
04631 ,{ -1700, -1710, -1700, -1700, -1700} /* GU,AU,G,A,G */
04632 ,{ 630, -630, -620, 630, -620} /* GU,AU,G,A,U */
04633 }
04634 ,{{ 650, -380, -600, 650, -600} /* GU,AU,G,C,E */
04635 ,{ 650, -620, -600, 650, -600} /* GU,AU,G,C,A */
04636 ,{ 640, -380, -610, 640, -610} /* GU,AU,G,C,C */
04637 ,{ 650, -620, -600, 650, -600} /* GU,AU,G,C,G */
04638 ,{ 640, -380, -610, 640, -610} /* GU,AU,G,C,U */
04639 }
04640 ,{{ 630, -630, 220, 630, 220} /* GU,AU,G,G,E */
04641 ,{ -1520, -1530, -1520, -1520, -1520} /* GU,AU,G,G,A */
04642 ,{ 630, -630, -620, 630, -620} /* GU,AU,G,G,C */
04643 ,{ 220, -1040, 220, -1030, 220} /* GU,AU,G,G,G */
04644 ,{ 630, -630, -620, 630, -620} /* GU,AU,G,G,U */
04645 }
04646 ,{{ 650, -380, -600, 650, -600} /* GU,AU,G,U,E */
04647 ,{ 650, -620, -600, 650, -600} /* GU,AU,G,U,A */
04648 ,{ 640, -380, -610, 640, -610} /* GU,AU,G,U,C */
04649 ,{ 650, -620, -600, 650, -600} /* GU,AU,G,U,G */
04650 ,{ -1590, -1600, -1590, -1590, -1590} /* GU,AU,G,U,U */
04651 }
04652 }
04653 ,{{{ 220, 220, 220, 220, -70} /* GU,AU,U,E,E */
04654 ,{ -70, -310, -310, -310, -70} /* GU,AU,U,E,A */
04655 ,{ -610, -610, -610, -610, -610} /* GU,AU,U,E,C */
04656 ,{ 220, 220, 220, 220, -600} /* GU,AU,U,E,G */
04657 ,{ -610, -610, -610, -610, -610} /* GU,AU,U,E,U */
04658 }
04659 ,{{ -70, -310, -310, -310, -70} /* GU,AU,U,A,E */
04660 ,{ -70, -310, -310, -310, -70} /* GU,AU,U,A,A */
04661 ,{ -620, -620, -620, -620, -620} /* GU,AU,U,A,C */
04662 ,{ -1460, -1700, -1460, -1700, -1700} /* GU,AU,U,A,G */
04663 ,{ -620, -620, -620, -620, -620} /* GU,AU,U,A,U */
04664 }
04665 ,{{ -600, -600, -600, -600, -600} /* GU,AU,U,C,E */
04666 ,{ -600, -600, -600, -600, -600} /* GU,AU,U,C,A */
04667 ,{ -610, -610, -610, -610, -610} /* GU,AU,U,C,C */
04668 ,{ -600, -600, -600, -600, -600} /* GU,AU,U,C,G */
04669 ,{ -610, -610, -610, -610, -610} /* GU,AU,U,C,U */
04670 }
04671 ,{{ 220, 220, 220, 220, -620} /* GU,AU,U,G,E */
04672 ,{ -1280, -1520, -1280, -1520, -1520} /* GU,AU,U,G,A */
04673 ,{ -620, -620, -620, -620, -620} /* GU,AU,U,G,C */
04674 ,{ 220, 220, 220, 220, -1030} /* GU,AU,U,G,G */
04675 ,{ -620, -620, -620, -620, -620} /* GU,AU,U,G,U */
04676 }
04677 ,{{ -600, -600, -600, -600, -600} /* GU,AU,U,U,E */
04678 ,{ -600, -600, -600, -600, -600} /* GU,AU,U,U,A */
04679 ,{ -610, -610, -610, -610, -610} /* GU,AU,U,U,C */
04680 ,{ -600, -600, -600, -600, -600} /* GU,AU,U,U,G */
04681 ,{ -1590, -1590, -1590, -1590, -1590} /* GU,AU,U,U,U */
04682 }
04683 }
04684 }
04685 ,{{{ 1010, 410, 410, 1010, 410} /* GU,UA,E,E,E */
04686 ,{ 1010, -240, -240, 1010, 0} /* GU,UA,E,E,A */
04687 ,{ 880, -150, -370, 880, -370} /* GU,UA,E,E,C */
04688 ,{ 880, 410, 410, 880, 410} /* GU,UA,E,E,G */
04689 ,{ 750, -280, -500, 750, -500} /* GU,UA,E,E,U */

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04690      }
04691      ,{{ 1010, -240, -240, 1010, 0} /* GU,UA,E,A,E */
04692      ,{ 1010, -240, -240, 1010, 0} /* GU,UA,E,A,A */
04693      ,{ 730, -520, -520, 730, -520} /* GU,UA,E,A,C */
04694      ,{ -1410, -1650, -1410, -1470, -1410} /* GU,UA,E,A,G */
04695      ,{ 730, -520, -520, 730, -520} /* GU,UA,E,A,U */
04696      }
04697      ,{{ 880, -150, -370, 880, -370} /* GU,UA,E,C,E */
04698      ,{ 880, -370, -370, 880, -370} /* GU,UA,E,C,A */
04699      ,{ 880, -150, -370, 880, -370} /* GU,UA,E,C,C */
04700      ,{ 880, -370, -370, 880, -370} /* GU,UA,E,C,G */
04701      ,{ 750, -280, -500, 750, -500} /* GU,UA,E,C,U */
04702      }
04703      ,{{ 730, 410, 410, 730, 410} /* GU,UA,E,G,E */
04704      ,{ -1710, -1950, -1710, -1770, -1710} /* GU,UA,E,G,A */
04705      ,{ 730, -520, -520, 730, -520} /* GU,UA,E,G,C */
04706      ,{ 410, 410, 410, 410, 410} /* GU,UA,E,G,G */
04707      ,{ 730, -520, -520, 730, -520} /* GU,UA,E,G,U */
04708      }
04709      ,{{ 880, -370, -370, 880, -370} /* GU,UA,E,U,E */
04710      ,{ 880, -370, -370, 880, -370} /* GU,UA,E,U,A */
04711      ,{ 440, -590, -810, 440, -810} /* GU,UA,E,U,C */
04712      ,{ 880, -370, -370, 880, -370} /* GU,UA,E,U,G */
04713      ,{ -1140, -1250, -1310, -1140, -1310} /* GU,UA,E,U,U */
04714      }
04715      }
04716      ,{{{ 410, 230, 410, 40, 410} /* GU,UA,A,E,E */
04717      ,{ -70, -420, -240, -70, -240} /* GU,UA,A,E,A */
04718      ,{ 40, -550, -370, 40, -370} /* GU,UA,A,E,C */
04719      ,{ 410, 230, 410, -200, 410} /* GU,UA,A,E,G */
04720      ,{ -90, -680, -500, -90, -500} /* GU,UA,A,E,U */
04721      }
04722      ,{{{ -70, -420, -240, -70, -240} /* GU,UA,A,A,E */
04723      ,{ -70, -420, -240, -70, -240} /* GU,UA,A,A,A */
04724      ,{ -350, -700, -520, -350, -520} /* GU,UA,A,A,C */
04725      ,{ -1470, -1830, -1650, -1470, -1650} /* GU,UA,A,A,G */
04726      ,{ -350, -700, -520, -350, -520} /* GU,UA,A,A,U */
04727      }
04728      ,{{{ 40, -550, -370, 40, -370} /* GU,UA,A,C,E */
04729      ,{ -200, -550, -370, -200, -370} /* GU,UA,A,C,A */
04730      ,{ 40, -550, -370, 40, -370} /* GU,UA,A,C,C */
04731      ,{ -200, -550, -370, -200, -370} /* GU,UA,A,C,G */
04732      ,{ -90, -680, -500, -90, -500} /* GU,UA,A,C,U */
04733      }
04734      ,{{{ 410, 230, 410, -350, 410} /* GU,UA,A,G,E */
04735      ,{ -1770, -2130, -1950, -1770, -1950} /* GU,UA,A,G,A */
04736      ,{ -350, -700, -520, -350, -520} /* GU,UA,A,G,C */
04737      ,{ 410, 230, 410, -670, 410} /* GU,UA,A,G,G */
04738      ,{ -350, -700, -520, -350, -520} /* GU,UA,A,G,U */
04739      }
04740      ,{{{ -200, -550, -370, -200, -370} /* GU,UA,A,U,E */
04741      ,{ -200, -550, -370, -200, -370} /* GU,UA,A,U,A */
04742      ,{ -400, -990, -810, -400, -810} /* GU,UA,A,U,C */
04743      ,{ -200, -550, -370, -200, -370} /* GU,UA,A,U,G */
04744      ,{ -1140, -1250, -1310, -1140, -1310} /* GU,UA,A,U,U */
04745      }
04746      }
04747      ,{{{ 410, 410, 410, 410, 410} /* GU,UA,C,E,E */
04748      ,{ -240, -240, -240, -240, -240} /* GU,UA,C,E,A */
04749      ,{ -370, -370, -370, -370, -370} /* GU,UA,C,E,C */
04750      ,{ 410, 410, 410, 410, 410} /* GU,UA,C,E,G */
04751      ,{ -500, -500, -500, -500, -500} /* GU,UA,C,E,U */
04752      }
04753      ,{{{ -240, -240, -240, -240, -240} /* GU,UA,C,A,E */
04754      ,{ -240, -240, -240, -240, -240} /* GU,UA,C,A,A */
04755      ,{ -520, -520, -520, -520, -520} /* GU,UA,C,A,C */
04756      ,{ -1410, -1650, -1410, -1650, -1410} /* GU,UA,C,A,G */
04757      ,{ -520, -520, -520, -520, -520} /* GU,UA,C,A,U */
04758      }
04759      ,{{{ -370, -370, -370, -370, -370} /* GU,UA,C,C,E */
04760      ,{ -370, -370, -370, -370, -370} /* GU,UA,C,C,A */
04761      ,{ -370, -370, -370, -370, -370} /* GU,UA,C,C,C */
04762      ,{ -370, -370, -370, -370, -370} /* GU,UA,C,C,G */
04763      ,{ -500, -500, -500, -500, -500} /* GU,UA,C,C,U */
04764      }
04765      ,{{{ 410, 410, 410, 410, 410} /* GU,UA,C,G,E */
04766      ,{ -1710, -1950, -1710, -1950, -1710} /* GU,UA,C,G,A */
04767      ,{ -520, -520, -520, -520, -520} /* GU,UA,C,G,C */
04768      ,{ 410, 410, 410, 410, 410} /* GU,UA,C,G,G */
04769      ,{ -520, -520, -520, -520, -520} /* GU,UA,C,G,U */
04770      }
04771      ,{{{ -370, -370, -370, -370, -370} /* GU,UA,C,U,E */
04772      ,{ -370, -370, -370, -370, -370} /* GU,UA,C,U,A */
04773      ,{ -810, -810, -810, -810, -810} /* GU,UA,C,U,C */
04774      ,{ -370, -370, -370, -370, -370} /* GU,UA,C,U,G */
04775      ,{ -1310, -1310, -1310, -1310, -1310} /* GU,UA,C,U,U */
04776      }
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04777      }
04778      ,{{{ 1010, -150, 410, 1010, 410} /* GU,UA,G,E,E */
04779      ,{ 1010, -260, -240, 1010, -240} /* GU,UA,G,E,A */
04780      ,{ 880, -150, -370, 880, -370} /* GU,UA,G,E,C */
04781      ,{ 880, -390, 410, 880, 410} /* GU,UA,G,E,G */
04782      ,{ 750, -280, -500, 750, -500} /* GU,UA,G,E,U */
04783      }
04784      ,{{{ 1010, -260, -240, 1010, -240} /* GU,UA,G,A,E */
04785      ,{ 1010, -260, -240, 1010, -240} /* GU,UA,G,A,A */
04786      ,{ 730, -540, -520, 730, -520} /* GU,UA,G,A,C */
04787      ,{ -1650, -1660, -1650, -1650, -1650} /* GU,UA,G,A,G */
04788      ,{ 730, -540, -520, 730, -520} /* GU,UA,G,A,U */
04789      }
04790      ,{{{ 880, -150, -370, 880, -370} /* GU,UA,G,C,E */
04791      ,{ 880, -390, -370, 880, -370} /* GU,UA,G,C,A */
04792      ,{ 880, -150, -370, 880, -370} /* GU,UA,G,C,C */
04793      ,{ 880, -390, -370, 880, -370} /* GU,UA,G,C,G */
04794      ,{ 750, -280, -500, 750, -500} /* GU,UA,G,C,U */
04795      }
04796      ,{{{ 730, -540, 410, 730, 410} /* GU,UA,G,G,E */
04797      ,{ -1950, -1960, -1950, -1950, -1950} /* GU,UA,G,G,A */
04798      ,{ 730, -540, -520, 730, -520} /* GU,UA,G,G,C */
04799      ,{ 410, -860, 410, -840, 410} /* GU,UA,G,G,G */
04800      ,{ 730, -540, -520, 730, -520} /* GU,UA,G,G,U */
04801      }
04802      ,{{{ 880, -390, -370, 880, -370} /* GU,UA,G,U,E */
04803      ,{ 880, -390, -370, 880, -370} /* GU,UA,G,U,A */
04804      ,{ 440, -590, -810, 440, -810} /* GU,UA,G,U,C */
04805      ,{ 880, -390, -370, 880, -370} /* GU,UA,G,U,G */
04806      ,{ -1310, -1330, -1310, -1310, -1310} /* GU,UA,G,U,U */
04807      }
04808      }
04809      ,{{{ 410, 410, 410, 410, 0} /* GU,UA,U,E,E */
04810      ,{ 0, -240, -240, -240, 0} /* GU,UA,U,E,A */
04811      ,{ -370, -370, -370, -370, -370} /* GU,UA,U,E,C */
04812      ,{ 410, 410, 410, 410, -370} /* GU,UA,U,E,G */
04813      ,{ -500, -500, -500, -500, -500} /* GU,UA,U,E,U */
04814      }
04815      ,{{{ 0, -240, -240, -240, 0} /* GU,UA,U,A,E */
04816      ,{ 0, -240, -240, -240, 0} /* GU,UA,U,A,A */
04817      ,{ -520, -520, -520, -520, -520} /* GU,UA,U,A,C */
04818      ,{ -1410, -1650, -1410, -1650, -1650} /* GU,UA,U,A,G */
04819      ,{ -520, -520, -520, -520, -520} /* GU,UA,U,A,U */
04820      }
04821      ,{{{ -370, -370, -370, -370, -370} /* GU,UA,U,C,E */
04822      ,{ -370, -370, -370, -370, -370} /* GU,UA,U,C,A */
04823      ,{ -370, -370, -370, -370, -370} /* GU,UA,U,C,C */
04824      ,{ -370, -370, -370, -370, -370} /* GU,UA,U,C,G */
04825      ,{ -500, -500, -500, -500, -500} /* GU,UA,U,C,U */
04826      }
04827      ,{{{ 410, 410, 410, 410, -520} /* GU,UA,U,G,E */
04828      ,{ -1710, -1950, -1710, -1950, -1950} /* GU,UA,U,G,A */
04829      ,{ -520, -520, -520, -520, -520} /* GU,UA,U,G,C */
04830      ,{ 410, 410, 410, 410, -840} /* GU,UA,U,G,G */
04831      ,{ -520, -520, -520, -520, -520} /* GU,UA,U,G,U */
04832      }
04833      ,{{{ -370, -370, -370, -370, -370} /* GU,UA,U,U,E */
04834      ,{ -370, -370, -370, -370, -370} /* GU,UA,U,U,A */
04835      ,{ -810, -810, -810, -810, -810} /* GU,UA,U,U,C */
04836      ,{ -370, -370, -370, -370, -370} /* GU,UA,U,U,G */
04837      ,{ -1310, -1310, -1310, -1310, -1310} /* GU,UA,U,U,U */
04838      }
04839      }
04840      }
04841      ,{{{ 1010, 410, 410, 1010, 410} /* GU,NN,E,E,E */
04842      ,{ 1010, -70, -240, 1010, 0} /* GU,NN,E,E,A */
04843      ,{ 880, -150, -370, 880, -370} /* GU,NN,E,E,C */
04844      ,{ 880, 410, 410, 880, 410} /* GU,NN,E,E,G */
04845      ,{ 750, -280, -500, 750, -500} /* GU,NN,E,E,U */
04846      }
04847      ,{{{ 1010, -70, -240, 1010, 0} /* GU,NN,E,A,E */
04848      ,{ 1010, -70, -240, 1010, 0} /* GU,NN,E,A,A */
04849      ,{ 730, -520, -520, 730, -520} /* GU,NN,E,A,C */
04850      ,{ -1180, -1420, -1180, -1250, -1180} /* GU,NN,E,A,G */
04851      ,{ 730, -520, -520, 730, -520} /* GU,NN,E,A,U */
04852      }
04853      ,{{{ 880, -150, -370, 880, -370} /* GU,NN,E,C,E */
04854      ,{ 880, -370, -370, 880, -370} /* GU,NN,E,C,A */
04855      ,{ 880, -150, -370, 880, -370} /* GU,NN,E,C,C */
04856      ,{ 880, -370, -370, 880, -370} /* GU,NN,E,C,G */
04857      ,{ 750, -280, -500, 750, -500} /* GU,NN,E,C,U */
04858      }
04859      ,{{{ 730, 410, 410, 730, 410} /* GU,NN,E,G,E */
04860      ,{ -1280, -1520, -1280, -1340, -1280} /* GU,NN,E,G,A */
04861      ,{ 730, -520, -520, 730, -520} /* GU,NN,E,G,C */
04862      ,{ 410, 410, 410, 410, 410} /* GU,NN,E,G,G */
04863      ,{ 730, -520, -520, 730, -520} /* GU,NN,E,G,U */

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04864      }
04865      ,{{      880,      -370,      -370,      880,      -370} /* GU,NN,E,U,E */
04866      ,{{      880,      -370,      -370,      880,      -370} /* GU,NN,E,U,A */
04867      ,{{      640,      -380,      -610,      640,      -610} /* GU,NN,E,U,C */
04868      ,{{      880,      -370,      -370,      880,      -370} /* GU,NN,E,U,G */
04869      ,{{     -1140,     -1250,     -1310,     -1140,     -1310} /* GU,NN,E,U,U */
04870      }
04871      }
04872      ,{{{      410,      230,      410,      40,      410} /* GU,NN,A,E,E */
04873      ,{{      -30,      -70,      -240,      -30,      -240} /* GU,NN,A,E,A */
04874      ,{{       40,      -550,      -370,      40,      -370} /* GU,NN,A,E,C */
04875      ,{{      410,      230,      410,      -200,      410} /* GU,NN,A,E,G */
04876      ,{{      -90,      -680,      -500,      -90,      -500} /* GU,NN,A,E,U */
04877      }
04878      ,{{{      -30,      -70,      -240,      -30,      -240} /* GU,NN,A,A,E */
04879      ,{{      -30,      -70,      -240,      -30,      -240} /* GU,NN,A,A,A */
04880      ,{{     -350,      -700,      -520,      -350,      -520} /* GU,NN,A,A,C */
04881      ,{{     -1250,     -1600,     -1420,     -1250,     -1420} /* GU,NN,A,A,G */
04882      ,{{     -350,      -700,      -520,      -350,      -520} /* GU,NN,A,A,U */
04883      }
04884      ,{{{       40,      -550,      -370,      40,      -370} /* GU,NN,A,C,E */
04885      ,{{     -200,      -550,      -370,      -200,      -370} /* GU,NN,A,C,A */
04886      ,{{       40,      -550,      -370,      40,      -370} /* GU,NN,A,C,C */
04887      ,{{     -200,      -550,      -370,      -200,      -370} /* GU,NN,A,C,G */
04888      ,{{      -90,      -680,      -500,      -90,      -500} /* GU,NN,A,C,U */
04889      }
04890      ,{{{      410,      230,      410,      -350,      410} /* GU,NN,A,G,E */
04891      ,{{     -1340,     -1700,     -1520,     -1340,     -1520} /* GU,NN,A,G,A */
04892      ,{{     -350,      -700,      -520,      -350,      -520} /* GU,NN,A,G,C */
04893      ,{{      410,      230,      410,      -670,      410} /* GU,NN,A,G,G */
04894      ,{{     -350,      -700,      -520,      -350,      -520} /* GU,NN,A,G,U */
04895      }
04896      ,{{{     -190,      -550,      -370,      -190,      -370} /* GU,NN,A,U,E */
04897      ,{{     -200,      -550,      -370,      -200,      -370} /* GU,NN,A,U,A */
04898      ,{{     -190,      -790,      -610,      -190,      -610} /* GU,NN,A,U,C */
04899      ,{{     -200,      -550,      -370,      -200,      -370} /* GU,NN,A,U,G */
04900      ,{{     -1140,     -1250,     -1310,     -1140,     -1310} /* GU,NN,A,U,U */
04901      }
04902      }
04903      ,{{{      410,      410,      410,      410,      410} /* GU,NN,C,E,E */
04904      ,{{     -240,      -240,      -240,      -240,      -240} /* GU,NN,C,E,A */
04905      ,{{     -370,      -370,      -370,      -370,      -370} /* GU,NN,C,E,C */
04906      ,{{      410,      410,      410,      410,      410} /* GU,NN,C,E,G */
04907      ,{{     -500,      -500,      -500,      -500,      -500} /* GU,NN,C,E,U */
04908      }
04909      ,{{{     -240,      -240,      -240,      -240,      -240} /* GU,NN,C,A,E */
04910      ,{{     -240,      -240,      -240,      -240,      -240} /* GU,NN,C,A,A */
04911      ,{{     -520,      -520,      -520,      -520,      -520} /* GU,NN,C,A,C */
04912      ,{{    -1180,     -1420,     -1180,     -1420,     -1180} /* GU,NN,C,A,G */
04913      ,{{     -520,      -520,      -520,      -520,      -520} /* GU,NN,C,A,U */
04914      }
04915      ,{{{     -370,      -370,      -370,      -370,      -370} /* GU,NN,C,C,E */
04916      ,{{     -370,      -370,      -370,      -370,      -370} /* GU,NN,C,C,A */
04917      ,{{     -370,      -370,      -370,      -370,      -370} /* GU,NN,C,C,C */
04918      ,{{     -370,      -370,      -370,      -370,      -370} /* GU,NN,C,C,G */
04919      ,{{     -500,      -500,      -500,      -500,      -500} /* GU,NN,C,C,U */
04920      }
04921      ,{{{      410,      410,      410,      410,      410} /* GU,NN,C,G,E */
04922      ,{{    -1280,     -1520,     -1280,     -1520,     -1280} /* GU,NN,C,G,A */
04923      ,{{     -520,      -520,      -520,      -520,      -520} /* GU,NN,C,G,C */
04924      ,{{      410,      410,      410,      410,      410} /* GU,NN,C,G,G */
04925      ,{{     -520,      -520,      -520,      -520,      -520} /* GU,NN,C,G,U */
04926      }
04927      ,{{{     -370,      -370,      -370,      -370,      -370} /* GU,NN,C,U,E */
04928      ,{{     -370,      -370,      -370,      -370,      -370} /* GU,NN,C,U,A */
04929      ,{{     -610,      -610,      -610,      -610,      -610} /* GU,NN,C,U,C */
04930      ,{{     -370,      -370,      -370,      -370,      -370} /* GU,NN,C,U,G */
04931      ,{{    -1310,     -1310,     -1310,     -1310,     -1310} /* GU,NN,C,U,U */
04932      }
04933      }
04934      ,{{{     1010,     -150,      410,      1010,      410} /* GU,NN,G,E,E */
04935      ,{{     1010,     -260,      -240,      1010,     -240} /* GU,NN,G,E,A */
04936      ,{{      880,      -150,      -370,      880,      -370} /* GU,NN,G,E,C */
04937      ,{{      880,      -390,      410,      880,      410} /* GU,NN,G,E,G */
04938      ,{{      750,      -280,      -500,      750,      -500} /* GU,NN,G,E,U */
04939      }
04940      ,{{{     1010,     -260,      -240,      1010,     -240} /* GU,NN,G,A,E */
04941      ,{{     1010,     -260,      -240,      1010,     -240} /* GU,NN,G,A,A */
04942      ,{{      730,      -540,      -520,      730,      -520} /* GU,NN,G,A,C */
04943      ,{{    -1420,     -1440,     -1420,     -1420,     -1420} /* GU,NN,G,A,G */
04944      ,{{      730,      -540,      -520,      730,      -520} /* GU,NN,G,A,U */
04945      }
04946      ,{{{      880,      -150,      -370,      880,      -370} /* GU,NN,G,C,E */
04947      ,{{      880,      -390,      -370,      880,      -370} /* GU,NN,G,C,A */
04948      ,{{      880,      -150,      -370,      880,      -370} /* GU,NN,G,C,C */
04949      ,{{      880,      -390,      -370,      880,      -370} /* GU,NN,G,C,G */
04950      ,{{      750,      -280,      -500,      750,      -500} /* GU,NN,G,C,U */
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04951    }
04952    ,{{ 730, -540, 410, 730, 410} /* GU,NN,G,G,E */
04953    ,{{ -1520, -1530, -1520, -1520, -1520} /* GU,NN,G,G,A */
04954    ,{{ 730, -540, -520, 730, -520} /* GU,NN,G,G,C */
04955    ,{{ 410, -860, 410, -840, 410} /* GU,NN,G,G,G */
04956    ,{{ 730, -540, -520, 730, -520} /* GU,NN,G,G,U */
04957    }
04958    ,{{ 880, -380, -370, 880, -370} /* GU,NN,G,U,E */
04959    ,{{ 880, -390, -370, 880, -370} /* GU,NN,G,U,A */
04960    ,{{ 640, -380, -610, 640, -610} /* GU,NN,G,U,C */
04961    ,{{ 880, -390, -370, 880, -370} /* GU,NN,G,U,G */
04962    ,{{ -1310, -1330, -1310, -1310, -1310} /* GU,NN,G,U,U */
04963    }
04964    }
04965    ,{{{ 410, 410, 410, 410, 0} /* GU,NN,U,E,E */
04966    ,{{ 0, -240, -240, -240, 0} /* GU,NN,U,E,A */
04967    ,{{ -370, -370, -370, -370, -370} /* GU,NN,U,E,C */
04968    ,{{ 410, 410, 410, 410, -370} /* GU,NN,U,E,G */
04969    ,{{ -500, -500, -500, -500, -500} /* GU,NN,U,E,U */
04970    }
04971    ,{{{ 0, -240, -240, -240, 0} /* GU,NN,U,A,E */
04972    ,{{ 0, -240, -240, -240, 0} /* GU,NN,U,A,A */
04973    ,{{ -520, -520, -520, -520, -520} /* GU,NN,U,A,C */
04974    ,{{ -1180, -1420, -1180, -1420, -1420} /* GU,NN,U,A,G */
04975    ,{{ -520, -520, -520, -520, -520} /* GU,NN,U,A,U */
04976    }
04977    ,{{{ -370, -370, -370, -370, -370} /* GU,NN,U,C,E */
04978    ,{{ -370, -370, -370, -370, -370} /* GU,NN,U,C,A */
04979    ,{{ -370, -370, -370, -370, -370} /* GU,NN,U,C,C */
04980    ,{{ -370, -370, -370, -370, -370} /* GU,NN,U,C,G */
04981    ,{{ -500, -500, -500, -500, -500} /* GU,NN,U,C,U */
04982    }
04983    ,{{{ 410, 410, 410, 410, -520} /* GU,NN,U,G,E */
04984    ,{{ -1280, -1520, -1280, -1520, -1520} /* GU,NN,U,G,A */
04985    ,{{ -520, -520, -520, -520, -520} /* GU,NN,U,G,C */
04986    ,{{ 410, 410, 410, 410, -840} /* GU,NN,U,G,G */
04987    ,{{ -520, -520, -520, -520, -520} /* GU,NN,U,G,U */
04988    }
04989    ,{{{ -370, -370, -370, -370, -370} /* GU,NN,U,U,E */
04990    ,{{ -370, -370, -370, -370, -370} /* GU,NN,U,U,A */
04991    ,{{ -610, -610, -610, -610, -610} /* GU,NN,U,U,C */
04992    ,{{ -370, -370, -370, -370, -370} /* GU,NN,U,U,G */
04993    ,{{ -1310, -1310, -1310, -1310, -1310} /* GU,NN,U,U,U */
04994    }
04995    }
04996    }
04997    }
04998    ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E,E,E */
04999    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,E,A */
05000    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,E,C */
05001    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,E,G */
05002    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,E,U */
05003    }
05004    ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E,A,E */
05005    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,A,A */
05006    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,A,C */
05007    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,A,G */
05008    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,A,U */
05009    }
05010    ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E,C,E */
05011    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,C,A */
05012    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,C,C */
05013    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,C,G */
05014    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,C,U */
05015    }
05016    ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E,G,E */
05017    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,G,A */
05018    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,G,C */
05019    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,G,G */
05020    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,G,U */
05021    }
05022    ,{{{ INF, INF, INF, INF, INF} /* UG,NP,E,U,E */
05023    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,U,A */
05024    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,U,C */
05025    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,U,G */
05026    ,{{ INF, INF, INF, INF, INF} /* UG,NP,E,U,U */
05027    }
05028    }
05029    ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,E,E */
05030    ,{{ INF, INF, INF, INF, INF} /* UG,NP,A,E,A */
05031    ,{{ INF, INF, INF, INF, INF} /* UG,NP,A,E,C */
05032    ,{{ INF, INF, INF, INF, INF} /* UG,NP,A,E,G */
05033    ,{{ INF, INF, INF, INF, INF} /* UG,NP,A,E,U */
05034    }
05035    ,{{{ INF, INF, INF, INF, INF} /* UG,NP,A,A,E */
05036    ,{{ INF, INF, INF, INF, INF} /* UG,NP,A,A,A */
05037    ,{{ INF, INF, INF, INF, INF} /* UG,NP,A,A,C */

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05038 , { INF, INF, INF, INF, INF} /* UG, NP, A, A, G */
05039 , { INF, INF, INF, INF, INF} /* UG, NP, A, A, U */
05040 }
05041 , { { INF, INF, INF, INF, INF} /* UG, NP, A, C, E */
05042 , { INF, INF, INF, INF, INF} /* UG, NP, A, C, A */
05043 , { INF, INF, INF, INF, INF} /* UG, NP, A, C, C */
05044 , { INF, INF, INF, INF, INF} /* UG, NP, A, C, G */
05045 , { INF, INF, INF, INF, INF} /* UG, NP, A, C, U */
05046 }
05047 , { { INF, INF, INF, INF, INF} /* UG, NP, A, G, E */
05048 , { INF, INF, INF, INF, INF} /* UG, NP, A, G, A */
05049 , { INF, INF, INF, INF, INF} /* UG, NP, A, G, C */
05050 , { INF, INF, INF, INF, INF} /* UG, NP, A, G, G */
05051 , { INF, INF, INF, INF, INF} /* UG, NP, A, G, U */
05052 }
05053 , { { INF, INF, INF, INF, INF} /* UG, NP, A, U, E */
05054 , { INF, INF, INF, INF, INF} /* UG, NP, A, U, A */
05055 , { INF, INF, INF, INF, INF} /* UG, NP, A, U, C */
05056 , { INF, INF, INF, INF, INF} /* UG, NP, A, U, G */
05057 , { INF, INF, INF, INF, INF} /* UG, NP, A, U, U */
05058 }
05059 }
05060 , { { { INF, INF, INF, INF, INF} /* UG, NP, C, E, E */
05061 , { INF, INF, INF, INF, INF} /* UG, NP, C, E, A */
05062 , { INF, INF, INF, INF, INF} /* UG, NP, C, E, C */
05063 , { INF, INF, INF, INF, INF} /* UG, NP, C, E, G */
05064 , { INF, INF, INF, INF, INF} /* UG, NP, C, E, U */
05065 }
05066 , { { INF, INF, INF, INF, INF} /* UG, NP, C, A, E */
05067 , { INF, INF, INF, INF, INF} /* UG, NP, C, A, A */
05068 , { INF, INF, INF, INF, INF} /* UG, NP, C, A, C */
05069 , { INF, INF, INF, INF, INF} /* UG, NP, C, A, G */
05070 , { INF, INF, INF, INF, INF} /* UG, NP, C, A, U */
05071 }
05072 , { { INF, INF, INF, INF, INF} /* UG, NP, C, C, E */
05073 , { INF, INF, INF, INF, INF} /* UG, NP, C, C, A */
05074 , { INF, INF, INF, INF, INF} /* UG, NP, C, C, C */
05075 , { INF, INF, INF, INF, INF} /* UG, NP, C, C, G */
05076 , { INF, INF, INF, INF, INF} /* UG, NP, C, C, U */
05077 }
05078 , { { INF, INF, INF, INF, INF} /* UG, NP, C, G, E */
05079 , { INF, INF, INF, INF, INF} /* UG, NP, C, G, A */
05080 , { INF, INF, INF, INF, INF} /* UG, NP, C, G, C */
05081 , { INF, INF, INF, INF, INF} /* UG, NP, C, G, G */
05082 , { INF, INF, INF, INF, INF} /* UG, NP, C, G, U */
05083 }
05084 , { { INF, INF, INF, INF, INF} /* UG, NP, C, U, E */
05085 , { INF, INF, INF, INF, INF} /* UG, NP, C, U, A */
05086 , { INF, INF, INF, INF, INF} /* UG, NP, C, U, C */
05087 , { INF, INF, INF, INF, INF} /* UG, NP, C, U, G */
05088 , { INF, INF, INF, INF, INF} /* UG, NP, C, U, U */
05089 }
05090 }
05091 , { { { INF, INF, INF, INF, INF} /* UG, NP, G, E, E */
05092 , { INF, INF, INF, INF, INF} /* UG, NP, G, E, A */
05093 , { INF, INF, INF, INF, INF} /* UG, NP, G, E, C */
05094 , { INF, INF, INF, INF, INF} /* UG, NP, G, E, G */
05095 , { INF, INF, INF, INF, INF} /* UG, NP, G, E, U */
05096 }
05097 , { { INF, INF, INF, INF, INF} /* UG, NP, G, A, E */
05098 , { INF, INF, INF, INF, INF} /* UG, NP, G, A, A */
05099 , { INF, INF, INF, INF, INF} /* UG, NP, G, A, C */
05100 , { INF, INF, INF, INF, INF} /* UG, NP, G, A, G */
05101 , { INF, INF, INF, INF, INF} /* UG, NP, G, A, U */
05102 }
05103 , { { INF, INF, INF, INF, INF} /* UG, NP, G, C, E */
05104 , { INF, INF, INF, INF, INF} /* UG, NP, G, C, A */
05105 , { INF, INF, INF, INF, INF} /* UG, NP, G, C, C */
05106 , { INF, INF, INF, INF, INF} /* UG, NP, G, C, G */
05107 , { INF, INF, INF, INF, INF} /* UG, NP, G, C, U */
05108 }
05109 , { { INF, INF, INF, INF, INF} /* UG, NP, G, G, E */
05110 , { INF, INF, INF, INF, INF} /* UG, NP, G, G, A */
05111 , { INF, INF, INF, INF, INF} /* UG, NP, G, G, C */
05112 , { INF, INF, INF, INF, INF} /* UG, NP, G, G, G */
05113 , { INF, INF, INF, INF, INF} /* UG, NP, G, G, U */
05114 }
05115 , { { INF, INF, INF, INF, INF} /* UG, NP, G, U, E */
05116 , { INF, INF, INF, INF, INF} /* UG, NP, G, U, A */
05117 , { INF, INF, INF, INF, INF} /* UG, NP, G, U, C */
05118 , { INF, INF, INF, INF, INF} /* UG, NP, G, U, G */
05119 , { INF, INF, INF, INF, INF} /* UG, NP, G, U, U */
05120 }
05121 }
05122 , { { { INF, INF, INF, INF, INF} /* UG, NP, U, E, E */
05123 , { INF, INF, INF, INF, INF} /* UG, NP, U, E, A */
05124 , { INF, INF, INF, INF, INF} /* UG, NP, U, E, C */
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05125 , { INF, INF, INF, INF, INF} /* UG,NP,U,E,G */
05126 , { INF, INF, INF, INF, INF} /* UG,NP,U,E,U */
05127 }
05128 , {{ INF, INF, INF, INF, INF} /* UG,NP,U,A,E */
05129 , { INF, INF, INF, INF, INF} /* UG,NP,U,A,A */
05130 , { INF, INF, INF, INF, INF} /* UG,NP,U,A,C */
05131 , { INF, INF, INF, INF, INF} /* UG,NP,U,A,G */
05132 , { INF, INF, INF, INF, INF} /* UG,NP,U,A,U */
05133 }
05134 , {{ INF, INF, INF, INF, INF} /* UG,NP,U,C,E */
05135 , { INF, INF, INF, INF, INF} /* UG,NP,U,C,A */
05136 , { INF, INF, INF, INF, INF} /* UG,NP,U,C,C */
05137 , { INF, INF, INF, INF, INF} /* UG,NP,U,C,G */
05138 , { INF, INF, INF, INF, INF} /* UG,NP,U,C,U */
05139 }
05140 , {{ INF, INF, INF, INF, INF} /* UG,NP,U,G,E */
05141 , { INF, INF, INF, INF, INF} /* UG,NP,U,G,A */
05142 , { INF, INF, INF, INF, INF} /* UG,NP,U,G,C */
05143 , { INF, INF, INF, INF, INF} /* UG,NP,U,G,G */
05144 , { INF, INF, INF, INF, INF} /* UG,NP,U,G,U */
05145 }
05146 , {{ INF, INF, INF, INF, INF} /* UG,NP,U,U,E */
05147 , { INF, INF, INF, INF, INF} /* UG,NP,U,U,A */
05148 , { INF, INF, INF, INF, INF} /* UG,NP,U,U,C */
05149 , { INF, INF, INF, INF, INF} /* UG,NP,U,U,G */
05150 , { INF, INF, INF, INF, INF} /* UG,NP,U,U,U */
05151 }
05152 }
05153 }
05154 , {{{ 800, 200, -310, 800, -310} /* UG,CG,E,E,E */
05155 , { 740, 0, -510, 740, -410} /* UG,CG,E,E,A */
05156 , { 800, 50, -450, 800, -450} /* UG,CG,E,E,C */
05157 , { 740, 200, -310, 740, -310} /* UG,CG,E,E,G */
05158 , { 690, -50, -560, 690, -560} /* UG,CG,E,E,U */
05159 }
05160 , {{ 600, -140, -630, 600, -410} /* UG,CG,E,A,E */
05161 , { 600, -140, -650, 600, -410} /* UG,CG,E,A,A */
05162 , { 290, -450, -960, 290, -960} /* UG,CG,E,A,C */
05163 , { -360, -360, -630, -870, -630} /* UG,CG,E,A,G */
05164 , { 290, -450, -960, 290, -960} /* UG,CG,E,A,U */
05165 }
05166 , {{ 740, 0, -510, 740, -510} /* UG,CG,E,C,E */
05167 , { 740, 0, -510, 740, -510} /* UG,CG,E,C,A */
05168 , { 740, 0, -510, 740, -510} /* UG,CG,E,C,C */
05169 , { 740, 0, -510, 740, -510} /* UG,CG,E,C,G */
05170 , { 690, -50, -560, 690, -560} /* UG,CG,E,C,U */
05171 }
05172 , {{ 290, 200, -310, 290, -310} /* UG,CG,E,G,E */
05173 , { -640, -640, -910, -1150, -910} /* UG,CG,E,G,A */
05174 , { 290, -450, -960, 290, -960} /* UG,CG,E,G,C */
05175 , { 200, 200, -310, -310, -310} /* UG,CG,E,G,G */
05176 , { 290, -450, -960, 290, -960} /* UG,CG,E,G,U */
05177 }
05178 , {{ 800, 50, -450, 800, -450} /* UG,CG,E,U,E */
05179 , { 740, 0, -510, 740, -510} /* UG,CG,E,U,A */
05180 , { 800, 50, -450, 800, -450} /* UG,CG,E,U,C */
05181 , { 740, 0, -510, 740, -510} /* UG,CG,E,U,G */
05182 , { -550, -550, -1300, -1300, -1300} /* UG,CG,E,U,U */
05183 }
05184 }
05185 , {{{ 200, 200, -310, -720, -310} /* UG,CG,A,E,E */
05186 , { 0, 0, -510, -1020, -510} /* UG,CG,A,E,A */
05187 , { 50, 50, -450, -720, -450} /* UG,CG,A,E,C */
05188 , { 200, 200, -310, -1020, -310} /* UG,CG,A,E,G */
05189 , { -50, -50, -560, -830, -560} /* UG,CG,A,E,U */
05190 }
05191 , {{ -140, -140, -650, -1160, -650} /* UG,CG,A,A,E */
05192 , { -140, -140, -650, -1160, -650} /* UG,CG,A,A,A */
05193 , { -450, -450, -960, -1470, -960} /* UG,CG,A,A,C */
05194 , { -360, -360, -870, -1380, -870} /* UG,CG,A,A,G */
05195 , { -450, -450, -960, -1470, -960} /* UG,CG,A,A,U */
05196 }
05197 , {{ 0, 0, -510, -780, -510} /* UG,CG,A,C,E */
05198 , { 0, 0, -510, -1020, -510} /* UG,CG,A,C,A */
05199 , { 0, 0, -510, -780, -510} /* UG,CG,A,C,C */
05200 , { 0, 0, -510, -1020, -510} /* UG,CG,A,C,G */
05201 , { -50, -50, -560, -830, -560} /* UG,CG,A,C,U */
05202 }
05203 , {{ 200, 200, -310, -1470, -310} /* UG,CG,A,G,E */
05204 , { -640, -640, -1150, -1660, -1150} /* UG,CG,A,G,A */
05205 , { -450, -450, -960, -1470, -960} /* UG,CG,A,G,C */
05206 , { 200, 200, -310, -2070, -310} /* UG,CG,A,G,G */
05207 , { -450, -450, -960, -1470, -960} /* UG,CG,A,G,U */
05208 }
05209 , {{ 50, 50, -450, -720, -450} /* UG,CG,A,U,E */
05210 , { 0, 0, -510, -1020, -510} /* UG,CG,A,U,A */
05211 , { 50, 50, -450, -720, -450} /* UG,CG,A,U,C */

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05212 , { 0, 0, -510, -1020, -510} /* UG,CG,A,U,G */
05213 , { -550, -550, -1300, -1810, -1300} /* UG,CG,A,U,U */
05214 }
05215 }
05216 , {{ { -310, -310, -310, -310, -310} /* UG,CG,C,E,E */
05217 , { -510, -510, -510, -510, -510} /* UG,CG,C,E,A */
05218 , { -450, -450, -450, -450, -450} /* UG,CG,C,E,C */
05219 , { -310, -310, -310, -310, -310} /* UG,CG,C,E,G */
05220 , { -560, -560, -560, -560, -560} /* UG,CG,C,E,U */
05221 }
05222 , {{ { -630, -650, -630, -650, -630} /* UG,CG,C,A,E */
05223 , { -650, -650, -650, -650, -650} /* UG,CG,C,A,A */
05224 , { -960, -960, -960, -960, -960} /* UG,CG,C,A,C */
05225 , { -630, -870, -630, -870, -630} /* UG,CG,C,A,G */
05226 , { -960, -960, -960, -960, -960} /* UG,CG,C,A,U */
05227 }
05228 , {{ { -510, -510, -510, -510, -510} /* UG,CG,C,C,E */
05229 , { -510, -510, -510, -510, -510} /* UG,CG,C,C,A */
05230 , { -510, -510, -510, -510, -510} /* UG,CG,C,C,C */
05231 , { -510, -510, -510, -510, -510} /* UG,CG,C,C,G */
05232 , { -560, -560, -560, -560, -560} /* UG,CG,C,C,U */
05233 }
05234 , {{ { -310, -310, -310, -310, -310} /* UG,CG,C,G,E */
05235 , { -910, -1150, -910, -1150, -910} /* UG,CG,C,G,A */
05236 , { -960, -960, -960, -960, -960} /* UG,CG,C,G,C */
05237 , { -310, -310, -310, -310, -310} /* UG,CG,C,G,G */
05238 , { -960, -960, -960, -960, -960} /* UG,CG,C,G,U */
05239 }
05240 , {{ { -450, -450, -450, -450, -450} /* UG,CG,C,U,E */
05241 , { -510, -510, -510, -510, -510} /* UG,CG,C,U,A */
05242 , { -450, -450, -450, -450, -450} /* UG,CG,C,U,C */
05243 , { -510, -510, -510, -510, -510} /* UG,CG,C,U,G */
05244 , { -1300, -1300, -1300, -1300, -1300} /* UG,CG,C,U,U */
05245 }
05246 }
05247 , {{ { 800, -550, -310, 800, -310} /* UG,CG,G,E,E */
05248 , { 740, -850, -510, 740, -510} /* UG,CG,G,E,A */
05249 , { 800, -550, -450, 800, -450} /* UG,CG,G,E,C */
05250 , { 740, -850, -310, 740, -310} /* UG,CG,G,E,G */
05251 , { 690, -660, -560, 690, -560} /* UG,CG,G,E,U */
05252 }
05253 , {{ { 600, -990, -650, 600, -650} /* UG,CG,G,A,E */
05254 , { 600, -990, -650, 600, -650} /* UG,CG,G,A,A */
05255 , { 290, -1300, -960, 290, -960} /* UG,CG,G,A,C */
05256 , { -870, -1210, -870, -870, -870} /* UG,CG,G,A,G */
05257 , { 290, -1300, -960, 290, -960} /* UG,CG,G,A,U */
05258 }
05259 , {{ { 740, -610, -510, 740, -510} /* UG,CG,G,C,E */
05260 , { 740, -850, -510, 740, -510} /* UG,CG,G,C,A */
05261 , { 740, -610, -510, 740, -510} /* UG,CG,G,C,C */
05262 , { 740, -850, -510, 740, -510} /* UG,CG,G,C,G */
05263 , { 690, -660, -560, 690, -560} /* UG,CG,G,C,U */
05264 }
05265 , {{ { 290, -1300, -310, 290, -310} /* UG,CG,G,G,E */
05266 , { -1150, -1490, -1150, -1150, -1150} /* UG,CG,G,G,A */
05267 , { 290, -1300, -960, 290, -960} /* UG,CG,G,G,C */
05268 , { -310, -1900, -310, -1560, -310} /* UG,CG,G,G,G */
05269 , { 290, -1300, -960, 290, -960} /* UG,CG,G,G,U */
05270 }
05271 , {{ { 800, -550, -450, 800, -450} /* UG,CG,G,U,E */
05272 , { 740, -850, -510, 740, -510} /* UG,CG,G,U,A */
05273 , { 800, -550, -450, 800, -450} /* UG,CG,G,U,C */
05274 , { 740, -850, -510, 740, -510} /* UG,CG,G,U,G */
05275 , { -1300, -1640, -1300, -1300, -1300} /* UG,CG,G,U,U */
05276 }
05277 }
05278 , {{ { -310, -310, -310, -310, -410} /* UG,CG,U,E,E */
05279 , { -410, -510, -510, -510, -410} /* UG,CG,U,E,A */
05280 , { -450, -450, -450, -450, -450} /* UG,CG,U,E,C */
05281 , { -310, -310, -310, -310, -510} /* UG,CG,U,E,G */
05282 , { -560, -560, -560, -560, -560} /* UG,CG,U,E,U */
05283 }
05284 , {{ { -410, -650, -630, -650, -410} /* UG,CG,U,A,E */
05285 , { -410, -650, -650, -650, -410} /* UG,CG,U,A,A */
05286 , { -960, -960, -960, -960, -960} /* UG,CG,U,A,C */
05287 , { -630, -870, -630, -870, -870} /* UG,CG,U,A,G */
05288 , { -960, -960, -960, -960, -960} /* UG,CG,U,A,U */
05289 }
05290 , {{ { -510, -510, -510, -510, -510} /* UG,CG,U,C,E */
05291 , { -510, -510, -510, -510, -510} /* UG,CG,U,C,A */
05292 , { -510, -510, -510, -510, -510} /* UG,CG,U,C,C */
05293 , { -510, -510, -510, -510, -510} /* UG,CG,U,C,G */
05294 , { -560, -560, -560, -560, -560} /* UG,CG,U,C,U */
05295 }
05296 , {{ { -310, -310, -310, -310, -960} /* UG,CG,U,G,E */
05297 , { -910, -1150, -910, -1150, -1150} /* UG,CG,U,G,A */
05298 , { -960, -960, -960, -960, -960} /* UG,CG,U,G,C */
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05299 , { -310, -310, -310, -310, -1560} /* UG,CG,U,G,G */
05300 , { -960, -960, -960, -960, -960} /* UG,CG,U,G,U */
05301 }
05302 , {{ -450, -450, -450, -450, -450} /* UG,CG,U,U,E */
05303 , { -510, -510, -510, -510, -510} /* UG,CG,U,U,A */
05304 , { -450, -450, -450, -450, -450} /* UG,CG,U,U,C */
05305 , { -510, -510, -510, -510, -510} /* UG,CG,U,U,G */
05306 , { -1300, -1300, -1300, -1300, -1300} /* UG,CG,U,U,U */
05307 }
05308 }
05309 }
05310 , {{{ 760, 200, -310, 760, -250} /* UG,GC,E,E,E */
05311 , { 760, -340, -490, 760, -250} /* UG,GC,E,E,A */
05312 , { 310, -430, -940, 310, -940} /* UG,GC,E,E,C */
05313 , { 400, 200, -310, 400, -310} /* UG,GC,E,E,G */
05314 , { 310, -390, -940, 310, -940} /* UG,GC,E,E,U */
05315 }
05316 , {{ 760, -430, -490, 760, -250} /* UG,GC,E,A,E */
05317 , { 760, -490, -490, 760, -250} /* UG,GC,E,A,A */
05318 , { 310, -430, -940, 310, -940} /* UG,GC,E,A,C */
05319 , { -1170, -1170, -1440, -1680, -1440} /* UG,GC,E,A,G */
05320 , { 310, -430, -940, 310, -940} /* UG,GC,E,A,U */
05321 }
05322 , {{ 400, -340, -850, 400, -850} /* UG,GC,E,C,E */
05323 , { 400, -340, -850, 400, -850} /* UG,GC,E,C,A */
05324 , { 90, -650, -1160, 90, -1160} /* UG,GC,E,C,C */
05325 , { 400, -340, -850, 400, -850} /* UG,GC,E,C,G */
05326 , { 90, -650, -1160, 90, -1160} /* UG,GC,E,C,U */
05327 }
05328 , {{{ 310, 200, -310, 310, -310} /* UG,GC,E,G,E */
05329 , { -690, -690, -960, -1200, -960} /* UG,GC,E,G,A */
05330 , { 310, -430, -940, 310, -940} /* UG,GC,E,G,C */
05331 , { 200, 200, -310, -310, -310} /* UG,GC,E,G,G */
05332 , { 310, -430, -940, 310, -940} /* UG,GC,E,G,U */
05333 }
05334 , {{{ 400, -340, -850, 400, -850} /* UG,GC,E,U,E */
05335 , { 400, -340, -850, 400, -850} /* UG,GC,E,U,A */
05336 , { -220, -960, -1470, -220, -1470} /* UG,GC,E,U,C */
05337 , { 400, -340, -850, 400, -850} /* UG,GC,E,U,G */
05338 , { -390, -390, -1140, -1140, -1140} /* UG,GC,E,U,U */
05339 }
05340 }
05341 , {{{ 200, 200, -310, -1000, -310} /* UG,GC,A,E,E */
05342 , { -340, -340, -490, -1000, -490} /* UG,GC,A,E,A */
05343 , { -430, -430, -940, -1430, -940} /* UG,GC,A,E,C */
05344 , { 200, 200, -310, -1360, -310} /* UG,GC,A,E,G */
05345 , { -390, -390, -940, -1430, -940} /* UG,GC,A,E,U */
05346 }
05347 , {{ -430, -430, -490, -1000, -490} /* UG,GC,A,A,E */
05348 , { -490, -2040, -490, -1000, -490} /* UG,GC,A,A,A */
05349 , { -430, -430, -940, -1450, -940} /* UG,GC,A,A,C */
05350 , { -1170, -1170, -1680, -2190, -1680} /* UG,GC,A,A,G */
05351 , { -430, -430, -940, -1450, -940} /* UG,GC,A,A,U */
05352 }
05353 , {{ -340, -340, -850, -1360, -850} /* UG,GC,A,C,E */
05354 , { -340, -340, -850, -1360, -850} /* UG,GC,A,C,A */
05355 , { -650, -650, -1160, -1430, -1160} /* UG,GC,A,C,C */
05356 , { -340, -340, -850, -1360, -850} /* UG,GC,A,C,G */
05357 , { -650, -650, -1160, -1430, -1160} /* UG,GC,A,C,U */
05358 }
05359 , {{ 200, 200, -310, -1450, -310} /* UG,GC,A,G,E */
05360 , { -690, -690, -1200, -1710, -1200} /* UG,GC,A,G,A */
05361 , { -430, -430, -940, -1450, -940} /* UG,GC,A,G,C */
05362 , { 200, 200, -310, -2070, -310} /* UG,GC,A,G,G */
05363 , { -430, -430, -940, -1450, -940} /* UG,GC,A,G,U */
05364 }
05365 , {{ -340, -340, -850, -1360, -850} /* UG,GC,A,U,E */
05366 , { -340, -340, -850, -1360, -850} /* UG,GC,A,U,A */
05367 , { -960, -960, -1470, -1740, -1470} /* UG,GC,A,U,C */
05368 , { -340, -340, -850, -1360, -850} /* UG,GC,A,U,G */
05369 , { -390, -390, -1140, -1650, -1140} /* UG,GC,A,U,U */
05370 }
05371 }
05372 , {{{ -310, -310, -310, -310, -310} /* UG,GC,C,E,E */
05373 , { -490, -490, -490, -490, -490} /* UG,GC,C,E,A */
05374 , { -940, -940, -940, -940, -940} /* UG,GC,C,E,C */
05375 , { -310, -310, -310, -310, -310} /* UG,GC,C,E,G */
05376 , { -940, -940, -940, -940, -940} /* UG,GC,C,E,U */
05377 }
05378 , {{ -490, -490, -490, -490, -490} /* UG,GC,C,A,E */
05379 , { -490, -490, -490, -490, -490} /* UG,GC,C,A,A */
05380 , { -940, -940, -940, -940, -940} /* UG,GC,C,A,C */
05381 , { -1440, -1680, -1440, -1680, -1440} /* UG,GC,C,A,G */
05382 , { -940, -940, -940, -940, -940} /* UG,GC,C,A,U */
05383 }
05384 , {{ -850, -850, -850, -850, -850} /* UG,GC,C,C,E */
05385 , { -850, -850, -850, -850, -850} /* UG,GC,C,C,A */

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```
05386 , { -1160, -1160, -1160, -1160, -1160} /* UG,GC,C,C,C */
05387 , { -850, -850, -850, -850, -850} /* UG,GC,C,C,G */
05388 , { -1160, -1160, -1160, -1160, -1160} /* UG,GC,C,C,U */
05389 }
05390 , { { -310, -310, -310, -310, -310} /* UG,GC,C,G,E */
05391 , { -960, -1200, -960, -1200, -960} /* UG,GC,C,G,A */
05392 , { -940, -940, -940, -940, -940} /* UG,GC,C,G,C */
05393 , { -310, -310, -310, -310, -310} /* UG,GC,C,G,G */
05394 , { -940, -940, -940, -940, -940} /* UG,GC,C,G,U */
05395 }
05396 , { { -850, -850, -850, -850, -850} /* UG,GC,C,U,E */
05397 , { -850, -850, -850, -850, -850} /* UG,GC,C,U,A */
05398 , { -1470, -1470, -1470, -1470, -1470} /* UG,GC,C,U,C */
05399 , { -850, -850, -850, -850, -850} /* UG,GC,C,U,G */
05400 , { -1140, -1140, -1140, -1140, -1140} /* UG,GC,C,U,U */
05401 }
05402 }
05403 , { { { 760, -830, -310, 760, -310} /* UG,GC,G,E,E */
05404 , { 760, -830, -490, 760, -490} /* UG,GC,G,E,A */
05405 , { 310, -1260, -940, 310, -940} /* UG,GC,G,E,C */
05406 , { 400, -1190, -310, 400, -310} /* UG,GC,G,E,G */
05407 , { 310, -1260, -940, 310, -940} /* UG,GC,G,E,U */
05408 }
05409 , { { 760, -830, -490, 760, -490} /* UG,GC,G,A,E */
05410 , { 760, -830, -490, 760, -490} /* UG,GC,G,A,A */
05411 , { 310, -1280, -940, 310, -940} /* UG,GC,G,A,C */
05412 , { -1680, -2020, -1680, -1680, -1680} /* UG,GC,G,A,G */
05413 , { 310, -1280, -940, 310, -940} /* UG,GC,G,A,U */
05414 }
05415 , { { 400, -1190, -850, 400, -850} /* UG,GC,G,C,E */
05416 , { 400, -1190, -850, 400, -850} /* UG,GC,G,C,A */
05417 , { 90, -1260, -1160, 90, -1160} /* UG,GC,G,C,C */
05418 , { 400, -1190, -850, 400, -850} /* UG,GC,G,C,G */
05419 , { 90, -1260, -1160, 90, -1160} /* UG,GC,G,C,U */
05420 }
05421 , { { 310, -1280, -310, 310, -310} /* UG,GC,G,G,E */
05422 , { -1200, -1540, -1200, -1200, -1200} /* UG,GC,G,G,A */
05423 , { 310, -1280, -940, 310, -940} /* UG,GC,G,G,C */
05424 , { -310, -1900, -310, -1560, -310} /* UG,GC,G,G,G */
05425 , { 310, -1280, -940, 310, -940} /* UG,GC,G,G,U */
05426 }
05427 , { { 400, -1190, -850, 400, -850} /* UG,GC,G,U,E */
05428 , { 400, -1190, -850, 400, -850} /* UG,GC,G,U,A */
05429 , { -220, -1570, -1470, -220, -1470} /* UG,GC,G,U,C */
05430 , { 400, -1190, -850, 400, -850} /* UG,GC,G,U,G */
05431 , { -1140, -1480, -1140, -1140, -1140} /* UG,GC,G,U,U */
05432 }
05433 }
05434 , { { { -250, -310, -310, -310, -250} /* UG,GC,U,E,E */
05435 , { -250, -490, -490, -490, -250} /* UG,GC,U,E,A */
05436 , { -940, -940, -940, -940, -940} /* UG,GC,U,E,C */
05437 , { -310, -310, -310, -310, -850} /* UG,GC,U,E,G */
05438 , { -940, -940, -940, -940, -940} /* UG,GC,U,E,U */
05439 }
05440 , { { -250, -490, -490, -490, -250} /* UG,GC,U,A,E */
05441 , { -250, -490, -490, -490, -250} /* UG,GC,U,A,A */
05442 , { -940, -940, -940, -940, -940} /* UG,GC,U,A,C */
05443 , { -1440, -1680, -1440, -1680, -1680} /* UG,GC,U,A,G */
05444 , { -940, -940, -940, -940, -940} /* UG,GC,U,A,U */
05445 }
05446 , { { -850, -850, -850, -850, -850} /* UG,GC,U,C,E */
05447 , { -850, -850, -850, -850, -850} /* UG,GC,U,C,A */
05448 , { -1160, -1160, -1160, -1160, -1160} /* UG,GC,U,C,C */
05449 , { -850, -850, -850, -850, -850} /* UG,GC,U,C,G */
05450 , { -1160, -1160, -1160, -1160, -1160} /* UG,GC,U,C,U */
05451 }
05452 , { { -310, -310, -310, -310, -940} /* UG,GC,U,G,E */
05453 , { -960, -1200, -960, -1200, -1200} /* UG,GC,U,G,A */
05454 , { -940, -940, -940, -940, -940} /* UG,GC,U,G,C */
05455 , { -310, -310, -310, -310, -1560} /* UG,GC,U,G,G */
05456 , { -940, -940, -940, -940, -940} /* UG,GC,U,G,U */
05457 }
05458 , { { -850, -850, -850, -850, -850} /* UG,GC,U,U,E */
05459 , { -850, -850, -850, -850, -850} /* UG,GC,U,U,A */
05460 , { -1470, -1470, -1470, -1470, -1470} /* UG,GC,U,U,C */
05461 , { -850, -850, -850, -850, -850} /* UG,GC,U,U,G */
05462 , { -1140, -1140, -1140, -1140, -1140} /* UG,GC,U,U,U */
05463 }
05464 }
05465 }
05466 , { { { { 360, 360, -150, -150, -150} /* UG,GU,E,E,E */
05467 , { -30, -30, -990, -150, -990} /* UG,GU,E,E,A */
05468 , { -150, -890, -1400, -150, -1400} /* UG,GU,E,E,C */
05469 , { 360, 360, -150, -150, -150} /* UG,GU,E,E,G */
05470 , { -150, -650, -1400, -150, -1400} /* UG,GU,E,E,U */
05471 }
05472 , { { -70, -70, -1180, -150, -1180} /* UG,GU,E,A,E */
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05473 , { -70, -70, -1580, -330, -1340} /* UG, GU, E, A, A */
05474 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, A, C */
05475 , { -910, -910, -1180, -1420, -1180} /* UG, GU, E, A, G */
05476 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, A, U */
05477 }
05478 , { { -150, -890, -1400, -150, -1400} /* UG, GU, E, C, E */
05479 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, C, A */
05480 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, C, C */
05481 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, C, G */
05482 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, C, U */
05483 }
05484 , { { 360, 360, -150, -150, -150} /* UG, GU, E, G, E */
05485 , { -30, -30, -990, -1230, -990} /* UG, GU, E, G, A */
05486 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, G, C */
05487 , { 360, 360, -150, -150, -150} /* UG, GU, E, G, G */
05488 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, G, U */
05489 }
05490 , { { -150, -650, -1400, -150, -1400} /* UG, GU, E, U, E */
05491 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, U, A */
05492 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, U, C */
05493 , { -150, -890, -1400, -150, -1400} /* UG, GU, E, U, G */
05494 , { -650, -650, -1400, -1400, -1400} /* UG, GU, E, U, U */
05495 }
05496 }
05497 , { { { 360, 360, -150, -1670, -150} /* UG, GU, A, E, E */
05498 , { -30, -30, -1230, -1740, -1230} /* UG, GU, A, E, A */
05499 , { -890, -890, -1400, -1670, -1400} /* UG, GU, A, E, C */
05500 , { 360, 360, -150, -1910, -150} /* UG, GU, A, E, G */
05501 , { -650, -650, -1400, -1670, -1400} /* UG, GU, A, E, U */
05502 }
05503 , { { -70, -70, -1400, -1910, -1400} /* UG, GU, A, A, E */
05504 , { -70, -70, -1580, -2090, -1580} /* UG, GU, A, A, A */
05505 , { -890, -890, -1400, -1910, -1400} /* UG, GU, A, A, C */
05506 , { -910, -910, -1420, -1930, -1420} /* UG, GU, A, A, G */
05507 , { -890, -890, -1400, -1910, -1400} /* UG, GU, A, A, U */
05508 }
05509 , { { -890, -890, -1400, -1670, -1400} /* UG, GU, A, C, E */
05510 , { -890, -890, -1400, -1910, -1400} /* UG, GU, A, C, A */
05511 , { -890, -890, -1400, -1670, -1400} /* UG, GU, A, C, C */
05512 , { -890, -890, -1400, -1910, -1400} /* UG, GU, A, C, G */
05513 , { -890, -890, -1400, -1670, -1400} /* UG, GU, A, C, U */
05514 }
05515 , { { 360, 360, -150, -1740, -150} /* UG, GU, A, G, E */
05516 , { -30, -30, -1230, -1740, -1230} /* UG, GU, A, G, A */
05517 , { -890, -890, -1400, -1910, -1400} /* UG, GU, A, G, C */
05518 , { 360, 360, -150, -1910, -150} /* UG, GU, A, G, G */
05519 , { -890, -890, -1400, -1910, -1400} /* UG, GU, A, G, U */
05520 }
05521 , { { -650, -650, -1400, -1670, -1400} /* UG, GU, A, U, E */
05522 , { -890, -890, -1400, -1910, -1400} /* UG, GU, A, U, A */
05523 , { -890, -890, -1400, -1670, -1400} /* UG, GU, A, U, C */
05524 , { -890, -890, -1400, -1910, -1400} /* UG, GU, A, U, G */
05525 , { -650, -650, -1400, -1910, -1400} /* UG, GU, A, U, U */
05526 }
05527 }
05528 , { { { -150, -150, -150, -150, -150} /* UG, GU, C, E, E */
05529 , { -990, -1230, -990, -1230, -990} /* UG, GU, C, E, A */
05530 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, E, C */
05531 , { -150, -150, -150, -150, -150} /* UG, GU, C, E, G */
05532 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, E, U */
05533 }
05534 , { { -1180, -1400, -1180, -1400, -1180} /* UG, GU, C, A, E */
05535 , { -1580, -1580, -1580, -1580, -1580} /* UG, GU, C, A, A */
05536 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, A, C */
05537 , { -1180, -1420, -1180, -1420, -1180} /* UG, GU, C, A, G */
05538 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, A, U */
05539 }
05540 , { { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, C, E */
05541 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, C, A */
05542 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, C, C */
05543 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, C, G */
05544 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, C, U */
05545 }
05546 , { { -150, -150, -150, -150, -150} /* UG, GU, C, G, E */
05547 , { -990, -1230, -990, -1230, -990} /* UG, GU, C, G, A */
05548 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, G, C */
05549 , { -150, -150, -150, -150, -150} /* UG, GU, C, G, G */
05550 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, G, U */
05551 }
05552 , { { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, U, E */
05553 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, U, A */
05554 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, U, C */
05555 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, U, G */
05556 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, C, U, U */
05557 }
05558 }
05559 , { { { -150, -1500, -150, -150, -150} /* UG, GU, G, E, E */

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05560 , { -150, -1570, -1230, -150, -1230} /* UG, GU, G, E, A */
05561 , { -150, -1500, -1400, -150, -1400} /* UG, GU, G, E, C */
05562 , { -150, -1740, -150, -150, -150} /* UG, GU, G, E, G */
05563 , { -150, -1500, -1400, -150, -1400} /* UG, GU, G, E, U */
05564 }
05565 , { { -150, -1600, -1400, -150, -1400} /* UG, GU, G, A, E */
05566 , { -330, -1600, -1580, -330, -1580} /* UG, GU, G, A, A */
05567 , { -150, -1740, -1400, -150, -1400} /* UG, GU, G, A, C */
05568 , { -1420, -3040, -1420, -1420, -1420} /* UG, GU, G, A, G */
05569 , { -150, -1740, -1400, -150, -1400} /* UG, GU, G, A, U */
05570 }
05571 , { { -150, -1500, -1400, -150, -1400} /* UG, GU, G, C, E */
05572 , { -150, -1740, -1400, -150, -1400} /* UG, GU, G, C, A */
05573 , { -150, -1500, -1400, -150, -1400} /* UG, GU, G, C, C */
05574 , { -150, -1740, -1400, -150, -1400} /* UG, GU, G, C, G */
05575 , { -150, -1500, -1400, -150, -1400} /* UG, GU, G, C, U */
05576 }
05577 , { { -150, -1570, -150, -150, -150} /* UG, GU, G, G, E */
05578 , { -1230, -1570, -1230, -1230, -1230} /* UG, GU, G, G, A */
05579 , { -150, -1740, -1400, -150, -1400} /* UG, GU, G, G, C */
05580 , { -150, -1740, -150, -1400, -150} /* UG, GU, G, G, G */
05581 , { -150, -1740, -1400, -150, -1400} /* UG, GU, G, G, U */
05582 }
05583 , { { -150, -1500, -1400, -150, -1400} /* UG, GU, G, U, E */
05584 , { -150, -1740, -1400, -150, -1400} /* UG, GU, G, U, A */
05585 , { -150, -1500, -1400, -150, -1400} /* UG, GU, G, U, C */
05586 , { -150, -1740, -1400, -150, -1400} /* UG, GU, G, U, G */
05587 , { -1400, -1740, -1400, -1400, -1400} /* UG, GU, G, U, U */
05588 }
05589 }
05590 , { { { -150, -150, -150, -150, -1230} /* UG, GU, U, E, E */
05591 , { -990, -1230, -990, -1230, -1230} /* UG, GU, U, E, A */
05592 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, E, C */
05593 , { -150, -150, -150, -150, -1400} /* UG, GU, U, E, G */
05594 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, E, U */
05595 }
05596 , { { -1180, -1400, -1180, -1400, -1340} /* UG, GU, U, A, E */
05597 , { -1340, -1580, -1580, -1580, -1340} /* UG, GU, U, A, A */
05598 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, A, C */
05599 , { -1180, -1420, -1180, -1420, -1420} /* UG, GU, U, A, G */
05600 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, A, U */
05601 }
05602 , { { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, C, E */
05603 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, C, A */
05604 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, C, C */
05605 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, C, G */
05606 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, C, U */
05607 }
05608 , { { -150, -150, -150, -150, -1230} /* UG, GU, U, G, E */
05609 , { -990, -1230, -990, -1230, -1230} /* UG, GU, U, G, A */
05610 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, G, C */
05611 , { -150, -150, -150, -150, -1400} /* UG, GU, U, G, G */
05612 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, G, U */
05613 }
05614 , { { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, U, E */
05615 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, U, A */
05616 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, U, C */
05617 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, U, G */
05618 , { -1400, -1400, -1400, -1400, -1400} /* UG, GU, U, U, U */
05619 }
05620 }
05621 }
05622 , { { { 910, 910, 400, 910, 400} /* UG, UG, E, E, E */
05623 , { 910, 170, -340, 910, -100} /* UG, UG, E, E, A */
05624 , { 400, -340, -850, 400, -850} /* UG, UG, E, E, C */
05625 , { 910, 910, 400, 400, 400} /* UG, UG, E, E, G */
05626 , { 400, -100, -850, 400, -850} /* UG, UG, E, E, U */
05627 }
05628 , { { 910, 170, -340, 910, -100} /* UG, UG, E, A, E */
05629 , { 910, 170, -340, 910, -100} /* UG, UG, E, A, A */
05630 , { 400, -340, -850, 400, -850} /* UG, UG, E, A, C */
05631 , { -680, -680, -950, -1190, -950} /* UG, UG, E, A, G */
05632 , { 400, -340, -850, 400, -850} /* UG, UG, E, A, U */
05633 }
05634 , { { 400, -340, -850, 400, -850} /* UG, UG, E, C, E */
05635 , { 400, -340, -850, 400, -850} /* UG, UG, E, C, A */
05636 , { 400, -340, -850, 400, -850} /* UG, UG, E, C, C */
05637 , { 400, -340, -850, 400, -850} /* UG, UG, E, C, G */
05638 , { 400, -340, -850, 400, -850} /* UG, UG, E, C, U */
05639 }
05640 , { { 910, 910, 400, 400, 400} /* UG, UG, E, G, E */
05641 , { -850, -850, -1120, -1360, -1120} /* UG, UG, E, G, A */
05642 , { 400, -340, -850, 400, -850} /* UG, UG, E, G, C */
05643 , { 910, 910, 400, 400, 400} /* UG, UG, E, G, G */
05644 , { 400, -340, -850, 400, -850} /* UG, UG, E, G, U */
05645 }
05646 , { { 400, -100, -850, 400, -850} /* UG, UG, E, U, E */
```

```

05647      , {      400,    -340,    -850,    400,    -850} /* UG,UG,E,U,A */
05648      , {      400,    -340,    -850,    400,    -850} /* UG,UG,E,U,C */
05649      , {      400,    -340,    -850,    400,    -850} /* UG,UG,E,U,G */
05650      , {     -100,    -100,    -850,    -850,    -850} /* UG,UG,E,U,U */
05651      }
05652      }
05653      ,{{{      910,      910,      400,    -850,      400} /* UG,UG,A,E,E */
05654      , {      170,      170,    -340,    -850,    -340} /* UG,UG,A,E,A */
05655      , {     -340,    -340,    -850,    -1120,    -850} /* UG,UG,A,E,C */
05656      , {      910,      910,      400,   -1360,      400} /* UG,UG,A,E,G */
05657      , {     -100,    -100,    -850,    -1120,    -850} /* UG,UG,A,E,U */
05658      }
05659      ,{{{      170,      170,    -340,    -850,    -340} /* UG,UG,A,A,E */
05660      , {      170,      170,    -340,    -850,    -340} /* UG,UG,A,A,A */
05661      , {     -340,    -340,    -850,    -1360,    -850} /* UG,UG,A,A,C */
05662      , {     -680,    -680,   -1190,   -1700,   -1190} /* UG,UG,A,A,G */
05663      , {     -340,    -340,    -850,    -1360,    -850} /* UG,UG,A,A,U */
05664      }
05665      ,{{{     -340,    -340,    -850,    -1120,    -850} /* UG,UG,A,C,E */
05666      , {     -340,    -340,    -850,    -1360,    -850} /* UG,UG,A,C,A */
05667      , {     -340,    -340,    -850,    -1120,    -850} /* UG,UG,A,C,C */
05668      , {     -340,    -340,    -850,    -1360,    -850} /* UG,UG,A,C,G */
05669      , {     -340,    -340,    -850,    -1120,    -850} /* UG,UG,A,C,U */
05670      }
05671      ,{{{      910,      910,      400,   -1360,      400} /* UG,UG,A,G,E */
05672      , {     -850,    -850,   -1360,   -1870,   -1360} /* UG,UG,A,G,A */
05673      , {     -340,    -340,    -850,    -1360,    -850} /* UG,UG,A,G,C */
05674      , {      910,      910,      400,   -1360,      400} /* UG,UG,A,G,G */
05675      , {     -340,    -340,    -850,    -1360,    -850} /* UG,UG,A,G,U */
05676      }
05677      ,{{{     -100,    -100,    -850,    -1120,    -850} /* UG,UG,A,U,E */
05678      , {     -340,    -340,    -850,    -1360,    -850} /* UG,UG,A,U,A */
05679      , {     -340,    -340,    -850,    -1120,    -850} /* UG,UG,A,U,C */
05680      , {     -340,    -340,    -850,    -1360,    -850} /* UG,UG,A,U,G */
05681      , {     -100,    -100,    -850,    -1360,    -850} /* UG,UG,A,U,U */
05682      }
05683      }
05684      ,{{{      400,      400,      400,      400,      400} /* UG,UG,C,E,E */
05685      , {     -340,    -340,    -340,    -340,    -340} /* UG,UG,C,E,A */
05686      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,E,C */
05687      , {      400,      400,      400,      400,      400} /* UG,UG,C,E,G */
05688      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,E,U */
05689      }
05690      ,{{{     -340,    -340,    -340,    -340,    -340} /* UG,UG,C,A,E */
05691      , {     -340,    -340,    -340,    -340,    -340} /* UG,UG,C,A,A */
05692      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,A,C */
05693      , {     -950,   -1190,    -950,   -1190,    -950} /* UG,UG,C,A,G */
05694      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,A,U */
05695      }
05696      ,{{{     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,C,E */
05697      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,C,A */
05698      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,C,C */
05699      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,C,G */
05700      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,C,U */
05701      }
05702      ,{{{      400,      400,      400,      400,      400} /* UG,UG,C,G,E */
05703      , {   -1120,   -1360,   -1120,   -1360,   -1120} /* UG,UG,C,G,A */
05704      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,G,C */
05705      , {      400,      400,      400,      400,      400} /* UG,UG,C,G,G */
05706      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,G,U */
05707      }
05708      ,{{{     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,U,E */
05709      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,U,A */
05710      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,U,C */
05711      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,U,G */
05712      , {     -850,    -850,    -850,    -850,    -850} /* UG,UG,C,U,U */
05713      }
05714      }
05715      ,{{{      910,    -680,      400,      910,      400} /* UG,UG,G,E,E */
05716      , {      910,    -680,    -340,      910,    -340} /* UG,UG,G,E,A */
05717      , {      400,    -950,    -850,      400,    -850} /* UG,UG,G,E,C */
05718      , {      400,   -1190,      400,      400,      400} /* UG,UG,G,E,G */
05719      , {      400,    -950,    -850,      400,    -850} /* UG,UG,G,E,U */
05720      }
05721      ,{{{      910,    -680,    -340,      910,    -340} /* UG,UG,G,A,E */
05722      , {      910,    -680,    -340,      910,    -340} /* UG,UG,G,A,A */
05723      , {      400,   -1190,    -850,      400,    -850} /* UG,UG,G,A,C */
05724      , {   -1190,   -1530,   -1190,   -1190,   -1190} /* UG,UG,G,A,G */
05725      , {      400,   -1190,    -850,      400,    -850} /* UG,UG,G,A,U */
05726      }
05727      ,{{{      400,    -950,    -850,      400,    -850} /* UG,UG,G,C,E */
05728      , {      400,   -1190,    -850,      400,    -850} /* UG,UG,G,C,A */
05729      , {      400,    -950,    -850,      400,    -850} /* UG,UG,G,C,C */
05730      , {      400,   -1190,    -850,      400,    -850} /* UG,UG,G,C,G */
05731      , {      400,    -950,    -850,      400,    -850} /* UG,UG,G,C,U */
05732      }
05733      ,{{{      400,   -1190,      400,      400,      400} /* UG,UG,G,G,E */

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05734 , { -1360, -1700, -1360, -1360, -1360} /* UG,UG,G,G,A */
05735 , { 400, -1190, -850, 400, -850} /* UG,UG,G,G,C */
05736 , { 400, -1190, 400, -850, 400} /* UG,UG,G,G,G */
05737 , { 400, -1190, -850, 400, -850} /* UG,UG,G,G,U */
05738 }
05739 , { { 400, -950, -850, 400, -850} /* UG,UG,G,U,E */
05740 , { 400, -1190, -850, 400, -850} /* UG,UG,G,U,A */
05741 , { 400, -950, -850, 400, -850} /* UG,UG,G,U,C */
05742 , { 400, -1190, -850, 400, -850} /* UG,UG,G,U,G */
05743 , { -850, -1190, -850, -850, -850} /* UG,UG,G,U,U */
05744 }
05745 }
05746 , { { { 400, 400, 400, 400, -100} /* UG,UG,U,E,E */
05747 , { -100, -340, -340, -340, -100} /* UG,UG,U,E,A */
05748 , { -850, -850, -850, -850, -850} /* UG,UG,U,E,C */
05749 , { 400, 400, 400, 400, -850} /* UG,UG,U,E,G */
05750 , { -850, -850, -850, -850, -850} /* UG,UG,U,E,U */
05751 }
05752 , { { -100, -340, -340, -340, -100} /* UG,UG,U,A,E */
05753 , { -100, -340, -340, -340, -100} /* UG,UG,U,A,A */
05754 , { -850, -850, -850, -850, -850} /* UG,UG,U,A,C */
05755 , { -950, -1190, -950, -1190, -1190} /* UG,UG,U,A,G */
05756 , { -850, -850, -850, -850, -850} /* UG,UG,U,A,U */
05757 }
05758 , { { -850, -850, -850, -850, -850} /* UG,UG,U,C,E */
05759 , { -850, -850, -850, -850, -850} /* UG,UG,U,C,A */
05760 , { -850, -850, -850, -850, -850} /* UG,UG,U,C,C */
05761 , { -850, -850, -850, -850, -850} /* UG,UG,U,C,G */
05762 , { -850, -850, -850, -850, -850} /* UG,UG,U,C,U */
05763 }
05764 , { { 400, 400, 400, 400, -850} /* UG,UG,U,G,E */
05765 , { -1120, -1360, -1120, -1360, -1360} /* UG,UG,U,G,A */
05766 , { -850, -850, -850, -850, -850} /* UG,UG,U,G,C */
05767 , { 400, 400, 400, 400, -850} /* UG,UG,U,G,G */
05768 , { -850, -850, -850, -850, -850} /* UG,UG,U,G,U */
05769 }
05770 , { { -850, -850, -850, -850, -850} /* UG,UG,U,U,E */
05771 , { -850, -850, -850, -850, -850} /* UG,UG,U,U,A */
05772 , { -850, -850, -850, -850, -850} /* UG,UG,U,U,C */
05773 , { -850, -850, -850, -850, -850} /* UG,UG,U,U,G */
05774 , { -850, -850, -850, -850, -850} /* UG,UG,U,U,U */
05775 }
05776 }
05777 }
05778 , { { { { 1490, 1280, 780, 1490, 780} /* UG,AU,E,E,E */
05779 , { 1490, 750, 240, 1490, 480} /* UG,AU,E,E,A */
05780 , { 1200, 450, -50, 1200, -50} /* UG,AU,E,E,C */
05781 , { 1280, 1280, 780, 1200, 780} /* UG,AU,E,E,G */
05782 , { 1200, 450, -50, 1200, -50} /* UG,AU,E,E,U */
05783 }
05784 , { { { 1490, 750, 240, 1490, 480} /* UG,AU,E,A,E */
05785 , { 1490, 750, 240, 1490, 480} /* UG,AU,E,A,A */
05786 , { 1190, 440, -60, 1190, -60} /* UG,AU,E,A,C */
05787 , { -630, -630, -900, -1140, -900} /* UG,AU,E,A,G */
05788 , { 1190, 440, -60, 1190, -60} /* UG,AU,E,A,U */
05789 }
05790 , { { { 1200, 460, -50, 1200, -50} /* UG,AU,E,C,E */
05791 , { 1200, 460, -50, 1200, -50} /* UG,AU,E,C,A */
05792 , { 1200, 450, -50, 1200, -50} /* UG,AU,E,C,C */
05793 , { 1200, 460, -50, 1200, -50} /* UG,AU,E,C,G */
05794 , { 1200, 450, -50, 1200, -50} /* UG,AU,E,C,U */
05795 }
05796 , { { { 1280, 1280, 780, 1190, 780} /* UG,AU,E,G,E */
05797 , { -450, -450, -720, -960, -720} /* UG,AU,E,G,A */
05798 , { 1190, 440, -60, 1190, -60} /* UG,AU,E,G,C */
05799 , { 1280, 1280, 780, 780, 780} /* UG,AU,E,G,G */
05800 , { 1190, 440, -60, 1190, -60} /* UG,AU,E,G,U */
05801 }
05802 , { { { 1200, 460, -50, 1200, -50} /* UG,AU,E,U,E */
05803 , { 1200, 460, -50, 1200, -50} /* UG,AU,E,U,A */
05804 , { 1200, 450, -50, 1200, -50} /* UG,AU,E,U,C */
05805 , { 1200, 460, -50, 1200, -50} /* UG,AU,E,U,G */
05806 , { -280, -280, -1030, -1030, -1030} /* UG,AU,E,U,U */
05807 }
05808 }
05809 , { { { { 1280, 1280, 780, -260, 780} /* UG,AU,A,E,E */
05810 , { 750, 750, 240, -260, 240} /* UG,AU,A,E,A */
05811 , { 450, 450, -50, -320, -50} /* UG,AU,A,E,C */
05812 , { 1280, 1280, 780, -560, 780} /* UG,AU,A,E,G */
05813 , { 450, 450, -50, -320, -50} /* UG,AU,A,E,U */
05814 }
05815 , { { { 750, 750, 240, -260, 240} /* UG,AU,A,A,E */
05816 , { 750, 750, 240, -260, 240} /* UG,AU,A,A,A */
05817 , { 440, 440, -60, -570, -60} /* UG,AU,A,A,C */
05818 , { -630, -630, -1140, -1650, -1140} /* UG,AU,A,A,G */
05819 , { 440, 440, -60, -570, -60} /* UG,AU,A,A,U */
05820 }
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05821 ,{{ 460, 460, -50, -320, -50} /* UG,AU,A,C,E */
05822 ,{ 460, 460, -50, -560, -50} /* UG,AU,A,C,A */
05823 ,{ 450, 450, -50, -320, -50} /* UG,AU,A,C,C */
05824 ,{ 460, 460, -50, -560, -50} /* UG,AU,A,C,G */
05825 ,{ 450, 450, -50, -320, -50} /* UG,AU,A,C,U */
05826 }
05827 ,{{ 1280, 1280, 780, -570, 780} /* UG,AU,A,G,E */
05828 ,{ -450, -450, -960, -1470, -960} /* UG,AU,A,G,A */
05829 ,{ 440, 440, -60, -570, -60} /* UG,AU,A,G,C */
05830 ,{ 1280, 1280, 780, -980, 780} /* UG,AU,A,G,G */
05831 ,{ 440, 440, -60, -570, -60} /* UG,AU,A,G,U */
05832 }
05833 ,{{ 460, 460, -50, -320, -50} /* UG,AU,A,U,E */
05834 ,{ 460, 460, -50, -560, -50} /* UG,AU,A,U,A */
05835 ,{ 450, 450, -50, -320, -50} /* UG,AU,A,U,C */
05836 ,{ 460, 460, -50, -560, -50} /* UG,AU,A,U,G */
05837 ,{ -280, -280, -1030, -1540, -1030} /* UG,AU,A,U,U */
05838 }
05839 }
05840 ,{{{ 780, 780, 780, 780, 780} /* UG,AU,C,E,E */
05841 ,{ 240, 240, 240, 240, 240} /* UG,AU,C,E,A */
05842 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,E,C */
05843 ,{ 780, 780, 780, 780, 780} /* UG,AU,C,E,G */
05844 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,E,U */
05845 }
05846 ,{{ 240, 240, 240, 240, 240} /* UG,AU,C,A,E */
05847 ,{ 240, 240, 240, 240, 240} /* UG,AU,C,A,A */
05848 ,{ -60, -60, -60, -60, -60} /* UG,AU,C,A,C */
05849 ,{ -900, -1140, -900, -1140, -900} /* UG,AU,C,A,G */
05850 ,{ -60, -60, -60, -60, -60} /* UG,AU,C,A,U */
05851 }
05852 ,{{ -50, -50, -50, -50, -50} /* UG,AU,C,C,E */
05853 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,C,A */
05854 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,C,C */
05855 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,C,G */
05856 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,C,U */
05857 }
05858 ,{{{ 780, 780, 780, 780, 780} /* UG,AU,C,G,E */
05859 ,{ -720, -960, -720, -960, -720} /* UG,AU,C,G,A */
05860 ,{ -60, -60, -60, -60, -60} /* UG,AU,C,G,C */
05861 ,{ 780, 780, 780, 780, 780} /* UG,AU,C,G,G */
05862 ,{ -60, -60, -60, -60, -60} /* UG,AU,C,G,U */
05863 }
05864 ,{{ -50, -50, -50, -50, -50} /* UG,AU,C,U,E */
05865 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,U,A */
05866 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,U,C */
05867 ,{ -50, -50, -50, -50, -50} /* UG,AU,C,U,G */
05868 ,{ -1030, -1030, -1030, -1030, -1030} /* UG,AU,C,U,U */
05869 }
05870 }
05871 ,{{{ 1490, -90, 780, 1490, 780} /* UG,AU,G,E,E */
05872 ,{ 1490, -90, 240, 1490, 240} /* UG,AU,G,E,A */
05873 ,{ 1200, -150, -50, 1200, -50} /* UG,AU,G,E,C */
05874 ,{ 1200, -390, 780, 1200, 780} /* UG,AU,G,E,G */
05875 ,{ 1200, -150, -50, 1200, -50} /* UG,AU,G,E,U */
05876 }
05877 ,{{{ 1490, -90, 240, 1490, 240} /* UG,AU,G,A,E */
05878 ,{ 1490, -90, 240, 1490, 240} /* UG,AU,G,A,A */
05879 ,{ 1190, -400, -60, 1190, -60} /* UG,AU,G,A,C */
05880 ,{ -1140, -1480, -1140, -1140, -1140} /* UG,AU,G,A,G */
05881 ,{ 1190, -400, -60, 1190, -60} /* UG,AU,G,A,U */
05882 }
05883 ,{{{ 1200, -150, -50, 1200, -50} /* UG,AU,G,C,E */
05884 ,{ 1200, -390, -50, 1200, -50} /* UG,AU,G,C,A */
05885 ,{ 1200, -150, -50, 1200, -50} /* UG,AU,G,C,C */
05886 ,{ 1200, -390, -50, 1200, -50} /* UG,AU,G,C,G */
05887 ,{ 1200, -150, -50, 1200, -50} /* UG,AU,G,C,U */
05888 }
05889 ,{{{ 1190, -400, 780, 1190, 780} /* UG,AU,G,G,E */
05890 ,{ -960, -1300, -960, -960, -960} /* UG,AU,G,G,A */
05891 ,{ 1190, -400, -60, 1190, -60} /* UG,AU,G,G,C */
05892 ,{ 780, -810, 780, -470, 780} /* UG,AU,G,G,G */
05893 ,{ 1190, -400, -60, 1190, -60} /* UG,AU,G,G,U */
05894 }
05895 ,{{{ 1200, -150, -50, 1200, -50} /* UG,AU,G,U,E */
05896 ,{ 1200, -390, -50, 1200, -50} /* UG,AU,G,U,A */
05897 ,{ 1200, -150, -50, 1200, -50} /* UG,AU,G,U,C */
05898 ,{ 1200, -390, -50, 1200, -50} /* UG,AU,G,U,G */
05899 ,{ -1030, -1370, -1030, -1030, -1030} /* UG,AU,G,U,U */
05900 }
05901 }
05902 ,{{{ 780, 780, 780, 780, 480} /* UG,AU,U,E,E */
05903 ,{ 480, 240, 240, 240, 480} /* UG,AU,U,E,A */
05904 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,E,C */
05905 ,{ 780, 780, 780, 780, -50} /* UG,AU,U,E,G */
05906 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,E,U */
05907 }

```

```
05908 ,{{ 480, 240, 240, 240, 480} /* UG,AU,U,A,E */
05909 ,{ 480, 240, 240, 240, 480} /* UG,AU,U,A,A */
05910 ,{ -60, -60, -60, -60, -60} /* UG,AU,U,A,C */
05911 ,{ -900, -1140, -900, -1140, -1140} /* UG,AU,U,A,G */
05912 ,{ -60, -60, -60, -60, -60} /* UG,AU,U,A,U */
05913 }
05914 ,{{ -50, -50, -50, -50, -50} /* UG,AU,U,C,E */
05915 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,C,A */
05916 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,C,C */
05917 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,C,G */
05918 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,C,U */
05919 }
05920 ,{{ 780, 780, 780, 780, -60} /* UG,AU,U,G,E */
05921 ,{ -720, -960, -720, -960, -960} /* UG,AU,U,G,A */
05922 ,{ -60, -60, -60, -60, -60} /* UG,AU,U,G,C */
05923 ,{ 780, 780, 780, 780, -470} /* UG,AU,U,G,G */
05924 ,{ -60, -60, -60, -60, -60} /* UG,AU,U,G,U */
05925 }
05926 ,{{ -50, -50, -50, -50, -50} /* UG,AU,U,U,E */
05927 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,U,A */
05928 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,U,C */
05929 ,{ -50, -50, -50, -50, -50} /* UG,AU,U,U,G */
05930 ,{ -1030, -1030, -1030, -1030, -1030} /* UG,AU,U,U,U */
05931 }
05932 }
05933 }
05934 ,{{{ 1560, 1470, 960, 1560, 960} /* UG,UA,E,E,E */
05935 ,{ 1560, 820, 310, 1560, 550} /* UG,UA,E,E,A */
05936 ,{ 1430, 690, 180, 1430, 180} /* UG,UA,E,E,C */
05937 ,{ 1470, 1470, 960, 1430, 960} /* UG,UA,E,E,G */
05938 ,{ 1300, 560, 50, 1300, 50} /* UG,UA,E,E,U */
05939 }
05940 ,{{ 1560, 820, 310, 1560, 550} /* UG,UA,E,A,E */
05941 ,{ 1560, 820, 310, 1560, 550} /* UG,UA,E,A,A */
05942 ,{ 1280, 540, 30, 1280, 30} /* UG,UA,E,A,C */
05943 ,{ -580, -580, -850, -1090, -850} /* UG,UA,E,A,G */
05944 ,{ 1280, 540, 30, 1280, 30} /* UG,UA,E,A,U */
05945 }
05946 ,{{{ 1430, 690, 180, 1430, 180} /* UG,UA,E,C,E */
05947 ,{ 1430, 690, 180, 1430, 180} /* UG,UA,E,C,A */
05948 ,{ 1430, 690, 180, 1430, 180} /* UG,UA,E,C,C */
05949 ,{ 1430, 690, 180, 1430, 180} /* UG,UA,E,C,G */
05950 ,{ 1300, 560, 50, 1300, 50} /* UG,UA,E,C,U */
05951 }
05952 ,{{{ 1470, 1470, 960, 1280, 960} /* UG,UA,E,G,E */
05953 ,{ -880, -880, -1150, -1390, -1150} /* UG,UA,E,G,A */
05954 ,{ 1280, 540, 30, 1280, 30} /* UG,UA,E,G,C */
05955 ,{ 1470, 1470, 960, 960, 960} /* UG,UA,E,G,G */
05956 ,{ 1280, 540, 30, 1280, 30} /* UG,UA,E,G,U */
05957 }
05958 ,{{{ 1430, 690, 180, 1430, 180} /* UG,UA,E,U,E */
05959 ,{ 1430, 690, 180, 1430, 180} /* UG,UA,E,U,A */
05960 ,{ 990, 250, -260, 990, -260} /* UG,UA,E,U,C */
05961 ,{ 1430, 690, 180, 1430, 180} /* UG,UA,E,U,G */
05962 ,{ -10, -10, -760, -760, -760} /* UG,UA,E,U,U */
05963 }
05964 }
05965 ,{{{ 1470, 1470, 960, -90, 960} /* UG,UA,A,E,E */
05966 ,{ 820, 820, 310, -200, 310} /* UG,UA,A,E,A */
05967 ,{ 690, 690, 180, -90, 180} /* UG,UA,A,E,C */
05968 ,{ 1470, 1470, 960, -330, 960} /* UG,UA,A,E,G */
05969 ,{ 560, 560, 50, -220, 50} /* UG,UA,A,E,U */
05970 }
05971 ,{{{ 820, 820, 310, -200, 310} /* UG,UA,A,A,E */
05972 ,{ 820, 820, 310, -200, 310} /* UG,UA,A,A,A */
05973 ,{ 540, 540, 30, -480, 30} /* UG,UA,A,A,C */
05974 ,{ -580, -580, -1090, -1600, -1090} /* UG,UA,A,A,G */
05975 ,{ 540, 540, 30, -480, 30} /* UG,UA,A,A,U */
05976 }
05977 ,{{{ 690, 690, 180, -90, 180} /* UG,UA,A,C,E */
05978 ,{ 690, 690, 180, -330, 180} /* UG,UA,A,C,A */
05979 ,{ 690, 690, 180, -90, 180} /* UG,UA,A,C,C */
05980 ,{ 690, 690, 180, -330, 180} /* UG,UA,A,C,G */
05981 ,{ 560, 560, 50, -220, 50} /* UG,UA,A,C,U */
05982 }
05983 ,{{{ 1470, 1470, 960, -480, 960} /* UG,UA,A,G,E */
05984 ,{ -880, -880, -1390, -1900, -1390} /* UG,UA,A,G,A */
05985 ,{ 540, 540, 30, -480, 30} /* UG,UA,A,G,C */
05986 ,{ 1470, 1470, 960, -800, 960} /* UG,UA,A,G,G */
05987 ,{ 540, 540, 30, -480, 30} /* UG,UA,A,G,U */
05988 }
05989 ,{{{ 690, 690, 180, -330, 180} /* UG,UA,A,U,E */
05990 ,{ 690, 690, 180, -330, 180} /* UG,UA,A,U,A */
05991 ,{ 250, 250, -260, -530, -260} /* UG,UA,A,U,C */
05992 ,{ 690, 690, 180, -330, 180} /* UG,UA,A,U,G */
05993 ,{ -10, -10, -760, -1270, -760} /* UG,UA,A,U,U */
05994 }
```

```

05995      }
05996      ,{{{      960,      960,      960,      960,      960} /* UG,UA,C,E,E */
05997      ,{      310,      310,      310,      310,      310} /* UG,UA,C,E,A */
05998      ,{      180,      180,      180,      180,      180} /* UG,UA,C,E,C */
05999      ,{      960,      960,      960,      960,      960} /* UG,UA,C,E,G */
06000      ,{      50,      50,      50,      50,      50} /* UG,UA,C,E,U */
06001      }
06002      ,{{{      310,      310,      310,      310,      310} /* UG,UA,C,A,E */
06003      ,{      310,      310,      310,      310,      310} /* UG,UA,C,A,A */
06004      ,{      30,      30,      30,      30,      30} /* UG,UA,C,A,C */
06005      ,{     -850,     -1090,     -850,     -1090,     -850} /* UG,UA,C,A,G */
06006      ,{      30,      30,      30,      30,      30} /* UG,UA,C,A,U */
06007      }
06008      ,{{{      180,      180,      180,      180,      180} /* UG,UA,C,C,E */
06009      ,{      180,      180,      180,      180,      180} /* UG,UA,C,C,A */
06010      ,{      180,      180,      180,      180,      180} /* UG,UA,C,C,C */
06011      ,{      180,      180,      180,      180,      180} /* UG,UA,C,C,G */
06012      ,{      50,      50,      50,      50,      50} /* UG,UA,C,C,U */
06013      }
06014      ,{{{      960,      960,      960,      960,      960} /* UG,UA,C,G,E */
06015      ,{     -1150,     -1390,     -1150,     -1390,     -1150} /* UG,UA,C,G,A */
06016      ,{      30,      30,      30,      30,      30} /* UG,UA,C,G,C */
06017      ,{      960,      960,      960,      960,      960} /* UG,UA,C,G,G */
06018      ,{      30,      30,      30,      30,      30} /* UG,UA,C,G,U */
06019      }
06020      ,{{{      180,      180,      180,      180,      180} /* UG,UA,C,U,E */
06021      ,{      180,      180,      180,      180,      180} /* UG,UA,C,U,A */
06022      ,{     -260,     -260,     -260,     -260,     -260} /* UG,UA,C,U,C */
06023      ,{      180,      180,      180,      180,      180} /* UG,UA,C,U,G */
06024      ,{     -760,     -760,     -760,     -760,     -760} /* UG,UA,C,U,U */
06025      }
06026      }
06027      ,{{{      1560,      80,      960,      1560,      960} /* UG,UA,G,E,E */
06028      ,{      1560,     -30,      310,      1560,      310} /* UG,UA,G,E,A */
06029      ,{      1430,      80,      180,      1430,      180} /* UG,UA,G,E,C */
06030      ,{      1430,     -160,      960,      1430,      960} /* UG,UA,G,E,G */
06031      ,{      1300,     -50,      50,      1300,      50} /* UG,UA,G,E,U */
06032      }
06033      ,{{{      1560,     -30,      310,      1560,      310} /* UG,UA,G,A,E */
06034      ,{      1560,     -30,      310,      1560,      310} /* UG,UA,G,A,A */
06035      ,{      1280,     -310,      30,      1280,      30} /* UG,UA,G,A,C */
06036      ,{     -1090,     -1430,     -1090,     -1090,     -1090} /* UG,UA,G,A,G */
06037      ,{      1280,     -310,      30,      1280,      30} /* UG,UA,G,A,U */
06038      }
06039      ,{{{      1430,      80,      180,      1430,      180} /* UG,UA,G,C,E */
06040      ,{      1430,     -160,      180,      1430,      180} /* UG,UA,G,C,A */
06041      ,{      1430,      80,      180,      1430,      180} /* UG,UA,G,C,C */
06042      ,{      1430,     -160,      180,      1430,      180} /* UG,UA,G,C,G */
06043      ,{      1300,     -50,      50,      1300,      50} /* UG,UA,G,C,U */
06044      }
06045      ,{{{      1280,     -310,      960,      1280,      960} /* UG,UA,G,G,E */
06046      ,{     -1390,     -1730,     -1390,     -1390,     -1390} /* UG,UA,G,G,A */
06047      ,{      1280,     -310,      30,      1280,      30} /* UG,UA,G,G,C */
06048      ,{      960,     -630,      960,      960,      960} /* UG,UA,G,G,G */
06049      ,{      1280,     -310,      30,      1280,      30} /* UG,UA,G,G,U */
06050      }
06051      ,{{{      1430,     -160,      180,      1430,      180} /* UG,UA,G,U,E */
06052      ,{      1430,     -160,      180,      1430,      180} /* UG,UA,G,U,A */
06053      ,{      990,     -360,     -260,      990,     -260} /* UG,UA,G,U,C */
06054      ,{      1430,     -160,      180,      1430,      180} /* UG,UA,G,U,G */
06055      ,{     -760,     -1100,     -760,     -760,     -760} /* UG,UA,G,U,U */
06056      }
06057      }
06058      ,{{{      960,      960,      960,      960,      550} /* UG,UA,U,E,E */
06059      ,{      550,      310,      310,      310,      550} /* UG,UA,U,E,A */
06060      ,{      180,      180,      180,      180,      180} /* UG,UA,U,E,C */
06061      ,{      960,      960,      960,      960,      180} /* UG,UA,U,E,G */
06062      ,{      50,      50,      50,      50,      50} /* UG,UA,U,E,U */
06063      }
06064      ,{{{      550,      310,      310,      310,      550} /* UG,UA,U,A,E */
06065      ,{      550,      310,      310,      310,      550} /* UG,UA,U,A,A */
06066      ,{      30,      30,      30,      30,      30} /* UG,UA,U,A,C */
06067      ,{     -850,     -1090,     -850,     -1090,     -1090} /* UG,UA,U,A,G */
06068      ,{      30,      30,      30,      30,      30} /* UG,UA,U,A,U */
06069      }
06070      ,{{{      180,      180,      180,      180,      180} /* UG,UA,U,C,E */
06071      ,{      180,      180,      180,      180,      180} /* UG,UA,U,C,A */
06072      ,{      180,      180,      180,      180,      180} /* UG,UA,U,C,C */
06073      ,{      180,      180,      180,      180,      180} /* UG,UA,U,C,G */
06074      ,{      50,      50,      50,      50,      50} /* UG,UA,U,C,U */
06075      }
06076      ,{{{      960,      960,      960,      960,      30} /* UG,UA,U,G,E */
06077      ,{     -1150,     -1390,     -1150,     -1390,     -1390} /* UG,UA,U,G,A */
06078      ,{      30,      30,      30,      30,      30} /* UG,UA,U,G,C */
06079      ,{      960,      960,      960,      960,     -290} /* UG,UA,U,G,G */
06080      ,{      30,      30,      30,      30,      30} /* UG,UA,U,G,U */
06081      }

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06082 ,{{ 180, 180, 180, 180, 180} /* UG,UA,U,U,E */
06083 ,{ 180, 180, 180, 180, 180} /* UG,UA,U,U,A */
06084 ,{ -260, -260, -260, -260, -260} /* UG,UA,U,U,C */
06085 ,{ 180, 180, 180, 180, 180} /* UG,UA,U,U,G */
06086 ,{ -760, -760, -760, -760, -760} /* UG,UA,U,U,U */
06087 }
06088 }
06089 }
06090 ,{{{ 1560, 1470, 960, 1560, 960} /* UG,NN,E,E,E */
06091 ,{ 1560, 820, 310, 1560, 550} /* UG,NN,E,E,A */
06092 ,{ 1430, 690, 180, 1430, 180} /* UG,NN,E,E,C */
06093 ,{ 1470, 1470, 960, 1430, 960} /* UG,NN,E,E,G */
06094 ,{ 1300, 560, 50, 1300, 50} /* UG,NN,E,E,U */
06095 }
06096 ,{{{ 1560, 820, 310, 1560, 550} /* UG,NN,E,A,E */
06097 ,{ 1560, 820, 310, 1560, 550} /* UG,NN,E,A,A */
06098 ,{ 1280, 540, 30, 1280, 30} /* UG,NN,E,A,C */
06099 ,{ -360, -360, -630, -870, -630} /* UG,NN,E,A,G */
06100 ,{ 1280, 540, 30, 1280, 30} /* UG,NN,E,A,U */
06101 }
06102 ,{{{ 1430, 690, 180, 1430, 180} /* UG,NN,E,C,E */
06103 ,{ 1430, 690, 180, 1430, 180} /* UG,NN,E,C,A */
06104 ,{ 1430, 690, 180, 1430, 180} /* UG,NN,E,C,C */
06105 ,{ 1430, 690, 180, 1430, 180} /* UG,NN,E,C,G */
06106 ,{ 1300, 560, 50, 1300, 50} /* UG,NN,E,C,U */
06107 }
06108 ,{{{ 1470, 1470, 960, 1280, 960} /* UG,NN,E,G,E */
06109 ,{ -30, -30, -720, -960, -720} /* UG,NN,E,G,A */
06110 ,{ 1280, 540, 30, 1280, 30} /* UG,NN,E,G,C */
06111 ,{ 1470, 1470, 960, 960, 960} /* UG,NN,E,G,G */
06112 ,{ 1280, 540, 30, 1280, 30} /* UG,NN,E,G,U */
06113 }
06114 ,{{{ 1430, 690, 180, 1430, 180} /* UG,NN,E,U,E */
06115 ,{ 1430, 690, 180, 1430, 180} /* UG,NN,E,U,A */
06116 ,{ 1200, 450, -50, 1200, -50} /* UG,NN,E,U,C */
06117 ,{ 1430, 690, 180, 1430, 180} /* UG,NN,E,U,G */
06118 ,{ -10, -10, -760, -760, -760} /* UG,NN,E,U,U */
06119 }
06120 }
06121 ,{{{ 1470, 1470, 960, -90, 960} /* UG,NN,A,E,E */
06122 ,{ 820, 820, 310, -200, 310} /* UG,NN,A,E,A */
06123 ,{ 690, 690, 180, -90, 180} /* UG,NN,A,E,C */
06124 ,{ 1470, 1470, 960, -330, 960} /* UG,NN,A,E,G */
06125 ,{ 560, 560, 50, -220, 50} /* UG,NN,A,E,U */
06126 }
06127 ,{{{ 820, 820, 310, -200, 310} /* UG,NN,A,A,E */
06128 ,{ 820, 820, 310, -200, 310} /* UG,NN,A,A,A */
06129 ,{ 540, 540, 30, -480, 30} /* UG,NN,A,A,C */
06130 ,{ -360, -360, -870, -1380, -870} /* UG,NN,A,A,G */
06131 ,{ 540, 540, 30, -480, 30} /* UG,NN,A,A,U */
06132 }
06133 ,{{{ 690, 690, 180, -90, 180} /* UG,NN,A,C,E */
06134 ,{ 690, 690, 180, -330, 180} /* UG,NN,A,C,A */
06135 ,{ 690, 690, 180, -90, 180} /* UG,NN,A,C,C */
06136 ,{ 690, 690, 180, -330, 180} /* UG,NN,A,C,G */
06137 ,{ 560, 560, 50, -220, 50} /* UG,NN,A,C,U */
06138 }
06139 ,{{{ 1470, 1470, 960, -480, 960} /* UG,NN,A,G,E */
06140 ,{ -30, -30, -960, -1470, -960} /* UG,NN,A,G,A */
06141 ,{ 540, 540, 30, -480, 30} /* UG,NN,A,G,C */
06142 ,{ 1470, 1470, 960, -800, 960} /* UG,NN,A,G,G */
06143 ,{ 540, 540, 30, -480, 30} /* UG,NN,A,G,U */
06144 }
06145 ,{{{ 690, 690, 180, -320, 180} /* UG,NN,A,U,E */
06146 ,{ 690, 690, 180, -330, 180} /* UG,NN,A,U,A */
06147 ,{ 450, 450, -50, -320, -50} /* UG,NN,A,U,C */
06148 ,{ 690, 690, 180, -330, 180} /* UG,NN,A,U,G */
06149 ,{ -10, -10, -760, -1270, -760} /* UG,NN,A,U,U */
06150 }
06151 }
06152 ,{{{ 960, 960, 960, 960, 960} /* UG,NN,C,E,E */
06153 ,{ 310, 310, 310, 310, 310} /* UG,NN,C,E,A */
06154 ,{ 180, 180, 180, 180, 180} /* UG,NN,C,E,C */
06155 ,{ 960, 960, 960, 960, 960} /* UG,NN,C,E,G */
06156 ,{ 50, 50, 50, 50, 50} /* UG,NN,C,E,U */
06157 }
06158 ,{{{ 310, 310, 310, 310, 310} /* UG,NN,C,A,E */
06159 ,{ 310, 310, 310, 310, 310} /* UG,NN,C,A,A */
06160 ,{ 30, 30, 30, 30, 30} /* UG,NN,C,A,C */
06161 ,{ -630, -870, -630, -870, -630} /* UG,NN,C,A,G */
06162 ,{ 30, 30, 30, 30, 30} /* UG,NN,C,A,U */
06163 }
06164 ,{{{ 180, 180, 180, 180, 180} /* UG,NN,C,C,E */
06165 ,{ 180, 180, 180, 180, 180} /* UG,NN,C,C,A */
06166 ,{ 180, 180, 180, 180, 180} /* UG,NN,C,C,C */
06167 ,{ 180, 180, 180, 180, 180} /* UG,NN,C,C,G */
06168 ,{ 50, 50, 50, 50, 50} /* UG,NN,C,C,U */
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06169      }
06170      ,{{      960,      960,      960,      960,      960} /* UG,NN,C,G,E */
06171      ,{{      -720,     -960,     -720,     -960,     -720} /* UG,NN,C,G,A */
06172      ,{{       30,       30,       30,       30,       30} /* UG,NN,C,G,C */
06173      ,{{       960,      960,      960,      960,      960} /* UG,NN,C,G,G */
06174      ,{{       30,       30,       30,       30,       30} /* UG,NN,C,G,U */
06175      }
06176      ,{{       180,      180,      180,      180,      180} /* UG,NN,C,U,E */
06177      ,{{       180,      180,      180,      180,      180} /* UG,NN,C,U,A */
06178      ,{{      -50,      -50,      -50,      -50,      -50} /* UG,NN,C,U,C */
06179      ,{{       180,      180,      180,      180,      180} /* UG,NN,C,U,G */
06180      ,{{      -760,     -760,     -760,     -760,     -760} /* UG,NN,C,U,U */
06181      }
06182      }
06183      ,{{{      1560,       80,      960,      1560,      960} /* UG,NN,G,E,E */
06184      ,{{      1560,      -30,      310,      1560,      310} /* UG,NN,G,E,A */
06185      ,{{      1430,       80,      180,      1430,      180} /* UG,NN,G,E,C */
06186      ,{{      1430,     -160,      960,      1430,      960} /* UG,NN,G,E,G */
06187      ,{{      1300,      -50,       50,      1300,       50} /* UG,NN,G,E,U */
06188      }
06189      ,{{{      1560,      -30,      310,      1560,      310} /* UG,NN,G,A,E */
06190      ,{{      1560,      -30,      310,      1560,      310} /* UG,NN,G,A,A */
06191      ,{{      1280,     -310,       30,      1280,       30} /* UG,NN,G,A,C */
06192      ,{{      -870,    -1210,     -870,     -870,    -870} /* UG,NN,G,A,G */
06193      ,{{      1280,     -310,       30,      1280,       30} /* UG,NN,G,A,U */
06194      }
06195      ,{{{      1430,       80,      180,      1430,      180} /* UG,NN,G,C,E */
06196      ,{{      1430,     -160,      180,      1430,      180} /* UG,NN,G,C,A */
06197      ,{{      1430,       80,      180,      1430,      180} /* UG,NN,G,C,C */
06198      ,{{      1430,     -160,      180,      1430,      180} /* UG,NN,G,C,G */
06199      ,{{      1300,      -50,       50,      1300,       50} /* UG,NN,G,C,U */
06200      }
06201      ,{{{      1280,     -310,      960,      1280,      960} /* UG,NN,G,G,E */
06202      ,{{      -960,    -1300,     -960,     -960,    -960} /* UG,NN,G,G,A */
06203      ,{{      1280,     -310,       30,      1280,       30} /* UG,NN,G,G,C */
06204      ,{{       960,      -630,      960,      -290,      960} /* UG,NN,G,G,G */
06205      ,{{      1280,     -310,       30,      1280,       30} /* UG,NN,G,G,U */
06206      }
06207      ,{{{      1430,     -150,      180,      1430,      180} /* UG,NN,G,U,E */
06208      ,{{      1430,     -160,      180,      1430,      180} /* UG,NN,G,U,A */
06209      ,{{      1200,     -150,      -50,      1200,      -50} /* UG,NN,G,U,C */
06210      ,{{      1430,     -160,      180,      1430,      180} /* UG,NN,G,U,G */
06211      ,{{      -760,    -1100,     -760,     -760,    -760} /* UG,NN,G,U,U */
06212      }
06213      }
06214      ,{{{      960,      960,      960,      960,      550} /* UG,NN,U,E,E */
06215      ,{{      550,      310,      310,      310,      550} /* UG,NN,U,E,A */
06216      ,{{      180,      180,      180,      180,      180} /* UG,NN,U,E,C */
06217      ,{{      960,      960,      960,      960,      180} /* UG,NN,U,E,G */
06218      ,{{       50,       50,       50,       50,       50} /* UG,NN,U,E,U */
06219      }
06220      ,{{{      550,      310,      310,      310,      550} /* UG,NN,U,A,E */
06221      ,{{      550,      310,      310,      310,      550} /* UG,NN,U,A,A */
06222      ,{{       30,       30,       30,       30,       30} /* UG,NN,U,A,C */
06223      ,{{     -630,     -870,     -630,     -870,     -870} /* UG,NN,U,A,G */
06224      ,{{       30,       30,       30,       30,       30} /* UG,NN,U,A,U */
06225      }
06226      ,{{{      180,      180,      180,      180,      180} /* UG,NN,U,C,E */
06227      ,{{      180,      180,      180,      180,      180} /* UG,NN,U,C,A */
06228      ,{{      180,      180,      180,      180,      180} /* UG,NN,U,C,C */
06229      ,{{      180,      180,      180,      180,      180} /* UG,NN,U,C,G */
06230      ,{{       50,       50,       50,       50,       50} /* UG,NN,U,C,U */
06231      }
06232      ,{{{      960,      960,      960,      960,       30} /* UG,NN,U,G,E */
06233      ,{{     -720,     -960,     -720,     -960,     -960} /* UG,NN,U,G,A */
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06235      ,{{      960,      960,      960,      960,    -290} /* UG,NN,U,G,G */
06236      ,{{       30,       30,       30,       30,       30} /* UG,NN,U,G,U */
06237      }
06238      ,{{{      180,      180,      180,      180,      180} /* UG,NN,U,U,E */
06239      ,{{      180,      180,      180,      180,      180} /* UG,NN,U,U,A */
06240      ,{{     -50,     -50,     -50,     -50,     -50} /* UG,NN,U,U,C */
06241      ,{{      180,      180,      180,      180,      180} /* UG,NN,U,U,G */
06242      ,{{     -760,     -760,     -760,     -760,     -760} /* UG,NN,U,U,U */
06243      }
06244      }
06245      }
06246      }
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06248      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,A */
06249      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,C */
06250      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,G */
06251      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,E,U */
06252      }
06253      ,{{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,A,E */
06254      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,A,A */
06255      ,{{      INF,      INF,      INF,      INF,      INF} /* AU,NP,E,A,C */

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06260 , { INF, INF, INF, INF, INF} /* AU, NP, E, C, A */
06261 , { INF, INF, INF, INF, INF} /* AU, NP, E, C, C */
06262 , { INF, INF, INF, INF, INF} /* AU, NP, E, C, G */
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06268 , { INF, INF, INF, INF, INF} /* AU, NP, E, G, G */
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06273 , { INF, INF, INF, INF, INF} /* AU, NP, E, U, C */
06274 , { INF, INF, INF, INF, INF} /* AU, NP, E, U, G */
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06277 }
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06293 , { INF, INF, INF, INF, INF} /* AU, NP, A, C, G */
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06312 , { INF, INF, INF, INF, INF} /* AU, NP, C, E, G */
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06341 , { INF, INF, INF, INF, INF} /* AU, NP, G, E, A */
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06397 , { INF, INF, INF, INF, INF} /* AU, NP, U, U, C */
06398 , { INF, INF, INF, INF, INF} /* AU, NP, U, U, G */
06399 , { INF, INF, INF, INF, INF} /* AU, NP, U, U, U */
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06401 }
06402 }
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06404 , { 1120, 580, 290, 1120, 290} /* AU, CG, E, E, A */
06405 , { 1170, 640, 340, 1170, 340} /* AU, CG, E, E, C */
06406 , { 1120, 780, 490, 1120, 490} /* AU, CG, E, E, G */
06407 , { 1060, 530, 230, 1060, 230} /* AU, CG, E, E, U */
06408 }
06409 , { { { 970, 440, 170, 970, 170} /* AU, CG, E, A, E */
06410 , { 970, 440, 140, 970, 140} /* AU, CG, E, A, A */
06411 , { 660, 130, -160, 660, -160} /* AU, CG, E, A, C */
06412 , { 220, 220, 170, -80, 170} /* AU, CG, E, A, G */
06413 , { 660, 130, -160, 660, -160} /* AU, CG, E, A, U */
06414 }
06415 , { { { 1120, 580, 290, 1120, 290} /* AU, CG, E, C, E */
06416 , { 1120, 580, 290, 1120, 290} /* AU, CG, E, C, A */
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06418 , { 1120, 580, 290, 1120, 290} /* AU, CG, E, C, G */
06419 , { 1060, 530, 230, 1060, 230} /* AU, CG, E, C, U */
06420 }
06421 , { { { 780, 780, 490, 660, 490} /* AU, CG, E, G, E */
06422 , { -60, -60, -120, -370, -120} /* AU, CG, E, G, A */
06423 , { 660, 130, -160, 660, -160} /* AU, CG, E, G, C */
06424 , { 780, 780, 490, 470, 490} /* AU, CG, E, G, G */
06425 , { 660, 130, -160, 660, -160} /* AU, CG, E, G, U */
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06428 , { 1120, 580, 290, 1120, 290} /* AU, CG, E, U, A */
06429 , { 1170, 640, 340, 1170, 340} /* AU, CG, E, U, C */

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06433
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06435 , { 580, 580, 290, -620, 290} /* AU,CG,A,E,A */
06436 , { 640, 640, 340, -330, 340} /* AU,CG,A,E,C */
06437 , { 780, 780, 490, -620, 490} /* AU,CG,A,E,G */
06438 , { 530, 530, 230, -440, 230} /* AU,CG,A,E,U */
06439 }
06440 , {{ { 440, 440, 140, -770, 140} /* AU,CG,A,A,E */
06441 , { 440, 440, 140, -770, 140} /* AU,CG,A,A,A */
06442 , { 130, 130, -160, -1080, -160} /* AU,CG,A,A,C */
06443 , { 220, 220, -70, -980, -70} /* AU,CG,A,A,G */
06444 , { 130, 130, -160, -1080, -160} /* AU,CG,A,A,U */
06445 }
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06447 , { 580, 580, 290, -620, 290} /* AU,CG,A,C,A */
06448 , { 580, 580, 280, -390, 280} /* AU,CG,A,C,C */
06449 , { 580, 580, 290, -620, 290} /* AU,CG,A,C,G */
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06463 }
06464 }
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06467 , { 340, 330, 340, 330, 340} /* AU,CG,C,E,C */
06468 , { 480, 470, 480, 470, 480} /* AU,CG,C,E,G */
06469 , { 230, 220, 230, 220, 230} /* AU,CG,C,E,U */
06470 }
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06473 , { -170, -180, -170, -180, -170} /* AU,CG,C,A,C */
06474 , { 170, -80, 170, -80, 170} /* AU,CG,C,A,G */
06475 , { -170, -180, -170, -180, -170} /* AU,CG,C,A,U */
06476 }
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06479 , { 280, 270, 280, 270, 280} /* AU,CG,C,C,C */
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06481 , { 230, 220, 230, 220, 230} /* AU,CG,C,C,U */
06482 }
06483 , {{ { 480, 470, 480, 470, 480} /* AU,CG,C,G,E */
06484 , { -120, -370, -120, -370, -120} /* AU,CG,C,G,A */
06485 , { -170, -180, -170, -180, -170} /* AU,CG,C,G,C */
06486 , { 480, 470, 480, 470, 480} /* AU,CG,C,G,G */
06487 , { -170, -180, -170, -180, -170} /* AU,CG,C,G,U */
06488 }
06489 , {{ { 340, 330, 340, 330, 340} /* AU,CG,C,U,E */
06490 , { 280, 270, 280, 270, 280} /* AU,CG,C,U,A */
06491 , { 340, 330, 340, 330, 340} /* AU,CG,C,U,C */
06492 , { 280, 270, 280, 270, 280} /* AU,CG,C,U,G */
06493 , { -500, -510, -500, -510, -500} /* AU,CG,C,U,U */
06494 }
06495 }
06496 , {{ { 1170, -510, 490, 1170, 490} /* AU,CG,G,E,E */
06497 , { 1120, -800, 290, 1120, 290} /* AU,CG,G,E,A */
06498 , { 1170, -510, 340, 1170, 340} /* AU,CG,G,E,C */
06499 , { 1120, -800, 490, 1120, 490} /* AU,CG,G,E,G */
06500 , { 1060, -620, 230, 1060, 230} /* AU,CG,G,E,U */
06501 }
06502 , {{ { 970, -950, 140, 970, 140} /* AU,CG,G,A,E */
06503 , { 970, -950, 140, 970, 140} /* AU,CG,G,A,A */
06504 , { 660, -1260, -160, 660, -160} /* AU,CG,G,A,C */
06505 , { -70, -1160, -70, -490, -70} /* AU,CG,G,A,G */
06506 , { 660, -1260, -160, 660, -160} /* AU,CG,G,A,U */
06507 }
06508 , {{ { 1120, -570, 290, 1120, 290} /* AU,CG,G,C,E */
06509 , { 1120, -800, 290, 1120, 290} /* AU,CG,G,C,A */
06510 , { 1110, -570, 280, 1110, 280} /* AU,CG,G,C,C */
06511 , { 1120, -800, 290, 1120, 290} /* AU,CG,G,C,G */
06512 , { 1060, -620, 230, 1060, 230} /* AU,CG,G,C,U */
06513 }
06514 , {{ { 660, -1260, 490, 660, 490} /* AU,CG,G,G,E */
06515 , { -350, -1450, -350, -780, -350} /* AU,CG,G,G,A */
06516 , { 660, -1260, -160, 660, -160} /* AU,CG,G,G,C */
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06517      , {      490,   -1860,    490,   -1190,    490} /* AU,CG,G,G,G */
06518      , {      660,   -1260,   -160,    660,   -160} /* AU,CG,G,G,U */
06519      }
06520      , {{      1170,    -510,    340,    1170,    340} /* AU,CG,G,U,E */
06521      , {      1120,    -800,    290,    1120,    290} /* AU,CG,G,U,A */
06522      , {      1170,    -510,    340,    1170,    340} /* AU,CG,G,U,C */
06523      , {      1120,    -800,    290,    1120,    290} /* AU,CG,G,U,G */
06524      , {     -500,   -1590,   -500,   -920,   -500} /* AU,CG,G,U,U */
06525      }
06526      }
06527      , {{{      480,    470,    480,    470,   -600} /* AU,CG,U,E,E */
06528      , {      280,    270,    280,    270,   -600} /* AU,CG,U,E,A */
06529      , {      340,    330,    340,    330,   -640} /* AU,CG,U,E,C */
06530      , {      480,    470,    480,    470,   -690} /* AU,CG,U,E,G */
06531      , {      230,    220,    230,    220,   -750} /* AU,CG,U,E,U */
06532      }
06533      , {{      170,    130,    170,    130,   -600} /* AU,CG,U,A,E */
06534      , {      140,    130,    140,    130,   -600} /* AU,CG,U,A,A */
06535      , {     -170,   -180,   -170,   -180,  -1150} /* AU,CG,U,A,C */
06536      , {      170,    -80,    170,    -80,  -1050} /* AU,CG,U,A,G */
06537      , {     -170,   -180,   -170,   -180,  -1150} /* AU,CG,U,A,U */
06538      }
06539      , {{      280,    270,    280,    270,   -690} /* AU,CG,U,C,E */
06540      , {      280,    270,    280,    270,   -690} /* AU,CG,U,C,A */
06541      , {      280,    270,    280,    270,   -700} /* AU,CG,U,C,C */
06542      , {      280,    270,    280,    270,   -690} /* AU,CG,U,C,G */
06543      , {      230,    220,    230,    220,   -750} /* AU,CG,U,C,U */
06544      }
06545      , {{      480,    470,    480,    470,  -1150} /* AU,CG,U,G,E */
06546      , {     -120,   -370,   -120,   -370,  -1340} /* AU,CG,U,G,A */
06547      , {     -170,   -180,   -170,   -180,  -1150} /* AU,CG,U,G,C */
06548      , {      480,    470,    480,    470,  -1750} /* AU,CG,U,G,G */
06549      , {     -170,   -180,   -170,   -180,  -1150} /* AU,CG,U,G,U */
06550      }
06551      , {{      340,    330,    340,    330,   -640} /* AU,CG,U,U,E */
06552      , {      280,    270,    280,    270,   -690} /* AU,CG,U,U,A */
06553      , {      340,    330,    340,    330,   -640} /* AU,CG,U,U,C */
06554      , {      280,    270,    280,    270,   -690} /* AU,CG,U,U,G */
06555      , {     -500,   -510,   -500,   -510,  -1480} /* AU,CG,U,U,U */
06556      }
06557      }
06558      }
06559      , {{{      1140,    780,    490,    1140,    490} /* AU,GC,E,E,E */
06560      , {      1140,    600,    310,    1140,    310} /* AU,GC,E,E,A */
06561      , {      690,    150,   -140,    690,   -140} /* AU,GC,E,E,C */
06562      , {      780,    780,    490,    770,    490} /* AU,GC,E,E,G */
06563      , {      690,    190,   -140,    690,   -140} /* AU,GC,E,E,U */
06564      }
06565      , {{      1140,    600,    310,    1140,    310} /* AU,GC,E,A,E */
06566      , {      1140,    600,    310,    1140,    310} /* AU,GC,E,A,A */
06567      , {      690,    150,   -140,    690,   -140} /* AU,GC,E,A,C */
06568      , {     -580,   -580,   -640,   -890,   -640} /* AU,GC,E,A,G */
06569      , {      690,    150,   -140,    690,   -140} /* AU,GC,E,A,U */
06570      }
06571      , {{      770,    240,    -50,    770,    -50} /* AU,GC,E,C,E */
06572      , {      770,    240,    -50,    770,    -50} /* AU,GC,E,C,A */
06573      , {      470,    -60,   -360,    470,   -360} /* AU,GC,E,C,C */
06574      , {      770,    240,    -50,    770,    -50} /* AU,GC,E,C,G */
06575      , {      470,    -60,   -360,    470,   -360} /* AU,GC,E,C,U */
06576      }
06577      , {{      780,    780,    490,    690,    490} /* AU,GC,E,G,E */
06578      , {     -110,   -110,   -170,   -420,   -170} /* AU,GC,E,G,A */
06579      , {      690,    150,   -140,    690,   -140} /* AU,GC,E,G,C */
06580      , {      780,    780,    490,    470,    490} /* AU,GC,E,G,G */
06581      , {      690,    150,   -140,    690,   -140} /* AU,GC,E,G,U */
06582      }
06583      , {{      770,    240,    -50,    770,    -50} /* AU,GC,E,U,E */
06584      , {      770,    240,    -50,    770,    -50} /* AU,GC,E,U,A */
06585      , {      160,   -370,   -670,    160,   -670} /* AU,GC,E,U,C */
06586      , {      770,    240,    -50,    770,    -50} /* AU,GC,E,U,G */
06587      , {      190,    190,   -340,   -360,   -340} /* AU,GC,E,U,U */
06588      }
06589      }
06590      , {{{      780,    780,    490,   -600,    490} /* AU,GC,A,E,E */
06591      , {      600,    600,    310,   -600,    310} /* AU,GC,A,E,A */
06592      , {      150,    150,   -140,  -1030,   -140} /* AU,GC,A,E,C */
06593      , {      780,    780,    490,   -970,    490} /* AU,GC,A,E,G */
06594      , {      190,    190,   -140,  -1030,   -140} /* AU,GC,A,E,U */
06595      }
06596      , {{      600,    600,    310,   -600,    310} /* AU,GC,A,A,E */
06597      , {      600,    600,    310,   -600,    310} /* AU,GC,A,A,A */
06598      , {      150,    150,   -140,  -1050,   -140} /* AU,GC,A,A,C */
06599      , {     -580,   -580,   -880,  -1790,   -880} /* AU,GC,A,A,G */
06600      , {      150,    150,   -140,  -1050,   -140} /* AU,GC,A,A,U */
06601      }
06602      , {{      240,    240,    -50,   -970,    -50} /* AU,GC,A,C,E */
06603      , {      240,    240,    -50,   -970,    -50} /* AU,GC,A,C,A */

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06604 , { -60, -60, -360, -1030, -360} /* AU,GC,A,C,C */
06605 , { 240, 240, -50, -970, -50} /* AU,GC,A,C,G */
06606 , { -60, -60, -360, -1030, -360} /* AU,GC,A,C,U */
06607 }
06608 , { { 780, 780, 490, -1050, 490} /* AU,GC,A,G,E */
06609 , { -110, -110, -400, -1320, -400} /* AU,GC,A,G,A */
06610 , { 150, 150, -140, -1050, -140} /* AU,GC,A,G,C */
06611 , { 780, 780, 490, -1680, 490} /* AU,GC,A,G,G */
06612 , { 150, 150, -140, -1050, -140} /* AU,GC,A,G,U */
06613 }
06614 , { { 240, 240, -50, -970, -50} /* AU,GC,A,U,E */
06615 , { 240, 240, -50, -970, -50} /* AU,GC,A,U,A */
06616 , { -370, -370, -670, -1340, -670} /* AU,GC,A,U,C */
06617 , { 240, 240, -50, -970, -50} /* AU,GC,A,U,G */
06618 , { 190, 190, -340, -1260, -340} /* AU,GC,A,U,U */
06619 }
06620 }
06621 , { { { 480, 470, 480, 470, 480} /* AU,GC,C,E,E */
06622 , { 300, 290, 300, 290, 300} /* AU,GC,C,E,A */
06623 , { -140, -150, -140, -150, -140} /* AU,GC,C,E,C */
06624 , { 480, 470, 480, 470, 480} /* AU,GC,C,E,G */
06625 , { -140, -150, -140, -150, -140} /* AU,GC,C,E,U */
06626 }
06627 , { { 300, 290, 300, 290, 300} /* AU,GC,C,A,E */
06628 , { 300, 290, 300, 290, 300} /* AU,GC,C,A,A */
06629 , { -140, -150, -140, -150, -140} /* AU,GC,C,A,C */
06630 , { -640, -890, -640, -890, -640} /* AU,GC,C,A,G */
06631 , { -140, -150, -140, -150, -140} /* AU,GC,C,A,U */
06632 }
06633 , { { -60, -70, -60, -70, -60} /* AU,GC,C,C,E */
06634 , { -60, -70, -60, -70, -60} /* AU,GC,C,C,A */
06635 , { -360, -370, -360, -370, -360} /* AU,GC,C,C,C */
06636 , { -60, -70, -60, -70, -60} /* AU,GC,C,C,G */
06637 , { -360, -370, -360, -370, -360} /* AU,GC,C,C,U */
06638 }
06639 , { { 480, 470, 480, 470, 480} /* AU,GC,C,G,E */
06640 , { -170, -420, -170, -420, -170} /* AU,GC,C,G,A */
06641 , { -140, -150, -140, -150, -140} /* AU,GC,C,G,C */
06642 , { 480, 470, 480, 470, 480} /* AU,GC,C,G,G */
06643 , { -140, -150, -140, -150, -140} /* AU,GC,C,G,U */
06644 }
06645 , { { -60, -70, -60, -70, -60} /* AU,GC,C,U,E */
06646 , { -60, -70, -60, -70, -60} /* AU,GC,C,U,A */
06647 , { -670, -680, -670, -680, -670} /* AU,GC,C,U,C */
06648 , { -60, -70, -60, -70, -60} /* AU,GC,C,U,G */
06649 , { -350, -360, -350, -360, -350} /* AU,GC,C,U,U */
06650 }
06651 }
06652 , { { { 1140, -780, 490, 1140, 490} /* AU,GC,G,E,E */
06653 , { 1140, -780, 310, 1140, 310} /* AU,GC,G,E,A */
06654 , { 690, -1210, -140, 690, -140} /* AU,GC,G,E,C */
06655 , { 770, -1150, 490, 770, 490} /* AU,GC,G,E,G */
06656 , { 690, -1210, -140, 690, -140} /* AU,GC,G,E,U */
06657 }
06658 , { { 1140, -780, 310, 1140, 310} /* AU,GC,G,A,E */
06659 , { 1140, -780, 310, 1140, 310} /* AU,GC,G,A,A */
06660 , { 690, -1230, -140, 690, -140} /* AU,GC,G,A,C */
06661 , { -880, -1970, -880, -1300, -880} /* AU,GC,G,A,G */
06662 , { 690, -1230, -140, 690, -140} /* AU,GC,G,A,U */
06663 }
06664 , { { 770, -1150, -50, 770, -50} /* AU,GC,G,C,E */
06665 , { 770, -1150, -50, 770, -50} /* AU,GC,G,C,A */
06666 , { 470, -1210, -360, 470, -360} /* AU,GC,G,C,C */
06667 , { 770, -1150, -50, 770, -50} /* AU,GC,G,C,G */
06668 , { 470, -1210, -360, 470, -360} /* AU,GC,G,C,U */
06669 }
06670 , { { 690, -1230, 490, 690, 490} /* AU,GC,G,G,E */
06671 , { -400, -1500, -400, -830, -400} /* AU,GC,G,G,A */
06672 , { 690, -1230, -140, 690, -140} /* AU,GC,G,G,C */
06673 , { 490, -1860, 490, -1190, 490} /* AU,GC,G,G,G */
06674 , { 690, -1230, -140, 690, -140} /* AU,GC,G,G,U */
06675 }
06676 , { { 770, -1150, -50, 770, -50} /* AU,GC,G,U,E */
06677 , { 770, -1150, -50, 770, -50} /* AU,GC,G,U,A */
06678 , { 160, -1520, -670, 160, -670} /* AU,GC,G,U,C */
06679 , { 770, -1150, -50, 770, -50} /* AU,GC,G,U,G */
06680 , { -340, -1440, -340, -770, -340} /* AU,GC,G,U,U */
06681 }
06682 }
06683 , { { { 480, 470, 480, 470, -430} /* AU,GC,U,E,E */
06684 , { 300, 290, 300, 290, -430} /* AU,GC,U,E,A */
06685 , { -140, -150, -140, -150, -1120} /* AU,GC,U,E,C */
06686 , { 480, 470, 480, 470, -1040} /* AU,GC,U,E,G */
06687 , { -140, -150, -140, -150, -1120} /* AU,GC,U,E,U */
06688 }
06689 , { { 300, 290, 300, 290, -430} /* AU,GC,U,A,E */
06690 , { 300, 290, 300, 290, -430} /* AU,GC,U,A,A */
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06691 , { -140, -150, -140, -150, -1120} /* AU,GC,U,A,C */
06692 , { -640, -890, -640, -890, -1860} /* AU,GC,U,A,G */
06693 , { -140, -150, -140, -150, -1120} /* AU,GC,U,A,U */
06694 }
06695 , { { -60, -70, -60, -70, -1040} /* AU,GC,U,C,E */
06696 , { -60, -70, -60, -70, -1040} /* AU,GC,U,C,A */
06697 , { -360, -370, -360, -370, -1340} /* AU,GC,U,C,C */
06698 , { -60, -70, -60, -70, -1040} /* AU,GC,U,C,G */
06699 , { -360, -370, -360, -370, -1340} /* AU,GC,U,C,U */
06700 }
06701 , { { 480, 470, 480, 470, -1120} /* AU,GC,U,G,E */
06702 , { -170, -420, -170, -420, -1390} /* AU,GC,U,G,A */
06703 , { -140, -150, -140, -150, -1120} /* AU,GC,U,G,C */
06704 , { 480, 470, 480, 470, -1750} /* AU,GC,U,G,G */
06705 , { -140, -150, -140, -150, -1120} /* AU,GC,U,G,U */
06706 }
06707 , { { -60, -70, -60, -70, -1040} /* AU,GC,U,U,E */
06708 , { -60, -70, -60, -70, -1040} /* AU,GC,U,U,A */
06709 , { -670, -680, -670, -680, -1650} /* AU,GC,U,U,C */
06710 , { -60, -70, -60, -70, -1040} /* AU,GC,U,U,G */
06711 , { -350, -360, -350, -360, -1330} /* AU,GC,U,U,U */
06712 }
06713 }
06714 }
06715 , { { { 940, 940, 650, 630, 650} /* AU,GU,E,E,E */
06716 , { 220, -130, -190, 220, -190} /* AU,GU,E,E,A */
06717 , { 220, -600, -600, 220, -600} /* AU,GU,E,E,C */
06718 , { 940, 940, 650, 630, 650} /* AU,GU,E,E,G */
06719 , { 220, -70, -600, 220, -600} /* AU,GU,E,E,U */
06720 }
06721 , { { 220, -310, -380, 220, -380} /* AU,GU,E,A,E */
06722 , { 40, -490, -780, 40, -780} /* AU,GU,E,A,A */
06723 , { 220, -310, -600, 220, -600} /* AU,GU,E,A,C */
06724 , { -320, -320, -380, -630, -380} /* AU,GU,E,A,G */
06725 , { 220, -310, -600, 220, -600} /* AU,GU,E,A,U */
06726 }
06727 , { { 220, -310, -600, 220, -600} /* AU,GU,E,C,E */
06728 , { 220, -310, -600, 220, -600} /* AU,GU,E,C,A */
06729 , { 220, -310, -600, 220, -600} /* AU,GU,E,C,C */
06730 , { 220, -310, -600, 220, -600} /* AU,GU,E,C,G */
06731 , { 220, -310, -600, 220, -600} /* AU,GU,E,C,U */
06732 }
06733 , { { 940, 940, 650, 630, 650} /* AU,GU,E,G,E */
06734 , { -130, -130, -190, -440, -190} /* AU,GU,E,G,A */
06735 , { 220, -310, -600, 220, -600} /* AU,GU,E,G,C */
06736 , { 940, 940, 650, 630, 650} /* AU,GU,E,G,G */
06737 , { 220, -310, -600, 220, -600} /* AU,GU,E,G,U */
06738 }
06739 , { { 220, -70, -600, 220, -600} /* AU,GU,E,U,E */
06740 , { 220, -310, -600, 220, -600} /* AU,GU,E,U,A */
06741 , { 220, -310, -600, 220, -600} /* AU,GU,E,U,C */
06742 , { 220, -310, -600, 220, -600} /* AU,GU,E,U,G */
06743 , { -70, -70, -600, -620, -600} /* AU,GU,E,U,U */
06744 }
06745 }
06746 , { { { 940, 940, 650, -1280, 650} /* AU,GU,A,E,E */
06747 , { -130, -130, -430, -1340, -430} /* AU,GU,A,E,A */
06748 , { -310, -310, -600, -1280, -600} /* AU,GU,A,E,C */
06749 , { 940, 940, 650, -1520, 650} /* AU,GU,A,E,G */
06750 , { -70, -70, -600, -1280, -600} /* AU,GU,A,E,U */
06751 }
06752 , { { -310, -310, -600, -1520, -600} /* AU,GU,A,A,E */
06753 , { -490, -490, -780, -1700, -780} /* AU,GU,A,A,A */
06754 , { -310, -310, -600, -1520, -600} /* AU,GU,A,A,C */
06755 , { -320, -320, -620, -1530, -620} /* AU,GU,A,A,G */
06756 , { -310, -310, -600, -1520, -600} /* AU,GU,A,A,U */
06757 }
06758 , { { -310, -310, -600, -1280, -600} /* AU,GU,A,C,E */
06759 , { -310, -310, -600, -1520, -600} /* AU,GU,A,C,A */
06760 , { -310, -310, -600, -1280, -600} /* AU,GU,A,C,C */
06761 , { -310, -310, -600, -1520, -600} /* AU,GU,A,C,G */
06762 , { -310, -310, -600, -1280, -600} /* AU,GU,A,C,U */
06763 }
06764 , { { 940, 940, 650, -1340, 650} /* AU,GU,A,G,E */
06765 , { -130, -130, -430, -1340, -430} /* AU,GU,A,G,A */
06766 , { -310, -310, -600, -1520, -600} /* AU,GU,A,G,C */
06767 , { 940, 940, 650, -1520, 650} /* AU,GU,A,G,G */
06768 , { -310, -310, -600, -1520, -600} /* AU,GU,A,G,U */
06769 }
06770 , { { -70, -70, -600, -1280, -600} /* AU,GU,A,U,E */
06771 , { -310, -310, -600, -1520, -600} /* AU,GU,A,U,A */
06772 , { -310, -310, -600, -1280, -600} /* AU,GU,A,U,C */
06773 , { -310, -310, -600, -1520, -600} /* AU,GU,A,U,G */
06774 , { -70, -70, -600, -1520, -600} /* AU,GU,A,U,U */
06775 }
06776 }
06777 , { { { 640, 630, 640, 630, 640} /* AU,GU,C,E,E */

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06778 , { -190, -440, -190, -440, -190} /* AU, GU, C, E, A */
06779 , { -610, -620, -610, -620, -610} /* AU, GU, C, E, C */
06780 , { 640, 630, 640, 630, 640} /* AU, GU, C, E, G */
06781 , { -610, -620, -610, -620, -610} /* AU, GU, C, E, U */
06782 }
06783 , { { -380, -620, -380, -620, -380} /* AU, GU, C, A, E */
06784 , { -790, -800, -790, -800, -790} /* AU, GU, C, A, A */
06785 , { -610, -620, -610, -620, -610} /* AU, GU, C, A, C */
06786 , { -380, -630, -380, -630, -380} /* AU, GU, C, A, G */
06787 , { -610, -620, -610, -620, -610} /* AU, GU, C, A, U */
06788 }
06789 , { { -610, -620, -610, -620, -610} /* AU, GU, C, C, E */
06790 , { -610, -620, -610, -620, -610} /* AU, GU, C, C, A */
06791 , { -610, -620, -610, -620, -610} /* AU, GU, C, C, C */
06792 , { -610, -620, -610, -620, -610} /* AU, GU, C, C, G */
06793 , { -610, -620, -610, -620, -610} /* AU, GU, C, C, U */
06794 }
06795 , { { 640, 630, 640, 630, 640} /* AU, GU, C, G, E */
06796 , { -190, -440, -190, -440, -190} /* AU, GU, C, G, A */
06797 , { -610, -620, -610, -620, -610} /* AU, GU, C, G, C */
06798 , { 640, 630, 640, 630, 640} /* AU, GU, C, G, G */
06799 , { -610, -620, -610, -620, -610} /* AU, GU, C, G, U */
06800 }
06801 , { { -610, -620, -610, -620, -610} /* AU, GU, C, U, E */
06802 , { -610, -620, -610, -620, -610} /* AU, GU, C, U, A */
06803 , { -610, -620, -610, -620, -610} /* AU, GU, C, U, C */
06804 , { -610, -620, -610, -620, -610} /* AU, GU, C, U, G */
06805 , { -610, -620, -610, -620, -610} /* AU, GU, C, U, U */
06806 }
06807 }
06808 , { { { 650, -1460, 650, 220, 650} /* AU, GU, G, E, E */
06809 , { 220, -1520, -430, 220, -430} /* AU, GU, G, E, A */
06810 , { 220, -1460, -600, 220, -600} /* AU, GU, G, E, C */
06811 , { 650, -1700, 650, 220, 650} /* AU, GU, G, E, G */
06812 , { 220, -1460, -600, 220, -600} /* AU, GU, G, E, U */
06813 }
06814 , { { 220, -1700, -600, 220, -600} /* AU, GU, G, A, E */
06815 , { 40, -1880, -780, 40, -780} /* AU, GU, G, A, A */
06816 , { 220, -1700, -600, 220, -600} /* AU, GU, G, A, C */
06817 , { -620, -1710, -620, -1040, -620} /* AU, GU, G, A, G */
06818 , { 220, -1700, -600, 220, -600} /* AU, GU, G, A, U */
06819 }
06820 , { { 220, -1460, -600, 220, -600} /* AU, GU, G, C, E */
06821 , { 220, -1700, -600, 220, -600} /* AU, GU, G, C, A */
06822 , { 220, -1460, -600, 220, -600} /* AU, GU, G, C, C */
06823 , { 220, -1700, -600, 220, -600} /* AU, GU, G, C, G */
06824 , { 220, -1460, -600, 220, -600} /* AU, GU, G, C, U */
06825 }
06826 , { { 650, -1520, 650, 220, 650} /* AU, GU, G, G, E */
06827 , { -430, -1520, -430, -850, -430} /* AU, GU, G, G, A */
06828 , { 220, -1700, -600, 220, -600} /* AU, GU, G, G, C */
06829 , { 650, -1700, 650, -1030, 650} /* AU, GU, G, G, G */
06830 , { 220, -1700, -600, 220, -600} /* AU, GU, G, G, U */
06831 }
06832 , { { 220, -1460, -600, 220, -600} /* AU, GU, G, U, E */
06833 , { 220, -1700, -600, 220, -600} /* AU, GU, G, U, A */
06834 , { 220, -1460, -600, 220, -600} /* AU, GU, G, U, C */
06835 , { 220, -1700, -600, 220, -600} /* AU, GU, G, U, G */
06836 , { -600, -1700, -600, -1030, -600} /* AU, GU, G, U, U */
06837 }
06838 }
06839 , { { { 640, 630, 640, 630, -1410} /* AU, GU, U, E, E */
06840 , { -190, -440, -190, -440, -1410} /* AU, GU, U, E, A */
06841 , { -610, -620, -610, -620, -1590} /* AU, GU, U, E, C */
06842 , { 640, 630, 640, 630, -1590} /* AU, GU, U, E, G */
06843 , { -610, -620, -610, -620, -1590} /* AU, GU, U, E, U */
06844 }
06845 , { { -380, -620, -380, -620, -1530} /* AU, GU, U, A, E */
06846 , { -790, -800, -790, -800, -1530} /* AU, GU, U, A, A */
06847 , { -610, -620, -610, -620, -1590} /* AU, GU, U, A, C */
06848 , { -380, -630, -380, -630, -1600} /* AU, GU, U, A, G */
06849 , { -610, -620, -610, -620, -1590} /* AU, GU, U, A, U */
06850 }
06851 , { { -610, -620, -610, -620, -1590} /* AU, GU, U, C, E */
06852 , { -610, -620, -610, -620, -1590} /* AU, GU, U, C, A */
06853 , { -610, -620, -610, -620, -1590} /* AU, GU, U, C, C */
06854 , { -610, -620, -610, -620, -1590} /* AU, GU, U, C, G */
06855 , { -610, -620, -610, -620, -1590} /* AU, GU, U, C, U */
06856 }
06857 , { { 640, 630, 640, 630, -1410} /* AU, GU, U, G, E */
06858 , { -190, -440, -190, -440, -1410} /* AU, GU, U, G, A */
06859 , { -610, -620, -610, -620, -1590} /* AU, GU, U, G, C */
06860 , { 640, 630, 640, 630, -1590} /* AU, GU, U, G, G */
06861 , { -610, -620, -610, -620, -1590} /* AU, GU, U, G, U */
06862 }
06863 , { { -610, -620, -610, -620, -1590} /* AU, GU, U, U, E */
06864 , { -610, -620, -610, -620, -1590} /* AU, GU, U, U, A */
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06865      , { -610, -620, -610, -620, -1590} /* AU, GU, U, U, C */
06866      , { -610, -620, -610, -620, -1590} /* AU, GU, U, U, G */
06867      , { -610, -620, -610, -620, -1590} /* AU, GU, U, U, U */
06868      }
06869      }
06870      }
06871      , {{{ 1490, 1490, 1200, 1280, 1200} /* AU, UG, E, E, E */
06872      , { 1280, 750, 460, 1280, 460} /* AU, UG, E, E, A */
06873      , { 780, 240, -50, 780, -50} /* AU, UG, E, E, C */
06874      , { 1490, 1490, 1200, 1190, 1200} /* AU, UG, E, E, G */
06875      , { 780, 480, -50, 780, -50} /* AU, UG, E, E, U */
06876      }
06877      , {{ 1280, 750, 460, 1280, 460} /* AU, UG, E, A, E */
06878      , { 1280, 750, 460, 1280, 460} /* AU, UG, E, A, A */
06879      , { 780, 240, -50, 780, -50} /* AU, UG, E, A, C */
06880      , { -90, -90, -150, -400, -150} /* AU, UG, E, A, G */
06881      , { 780, 240, -50, 780, -50} /* AU, UG, E, A, U */
06882      }
06883      , {{ 780, 240, -50, 780, -50} /* AU, UG, E, C, E */
06884      , { 780, 240, -50, 780, -50} /* AU, UG, E, C, A */
06885      , { 780, 240, -50, 780, -50} /* AU, UG, E, C, C */
06886      , { 780, 240, -50, 780, -50} /* AU, UG, E, C, G */
06887      , { 780, 240, -50, 780, -50} /* AU, UG, E, C, U */
06888      }
06889      , {{ 1490, 1490, 1200, 1190, 1200} /* AU, UG, E, G, E */
06890      , { -260, -260, -320, -570, -320} /* AU, UG, E, G, A */
06891      , { 780, 240, -50, 780, -50} /* AU, UG, E, G, C */
06892      , { 1490, 1490, 1200, 1190, 1200} /* AU, UG, E, G, G */
06893      , { 780, 240, -50, 780, -50} /* AU, UG, E, G, U */
06894      }
06895      , {{ 780, 480, -50, 780, -50} /* AU, UG, E, U, E */
06896      , { 780, 240, -50, 780, -50} /* AU, UG, E, U, A */
06897      , { 780, 240, -50, 780, -50} /* AU, UG, E, U, C */
06898      , { 780, 240, -50, 780, -50} /* AU, UG, E, U, G */
06899      , { 480, 480, -50, -60, -50} /* AU, UG, E, U, U */
06900      }
06901      }
06902      , {{{ 1490, 1490, 1200, -450, 1200} /* AU, UG, A, E, E */
06903      , { 750, 750, 460, -450, 460} /* AU, UG, A, E, A */
06904      , { 240, 240, -50, -720, -50} /* AU, UG, A, E, C */
06905      , { 1490, 1490, 1200, -960, 1200} /* AU, UG, A, E, G */
06906      , { 480, 480, -50, -720, -50} /* AU, UG, A, E, U */
06907      }
06908      , {{ 750, 750, 460, -450, 460} /* AU, UG, A, A, E */
06909      , { 750, 750, 460, -450, 460} /* AU, UG, A, A, A */
06910      , { 240, 240, -50, -960, -50} /* AU, UG, A, A, C */
06911      , { -90, -90, -390, -1300, -390} /* AU, UG, A, A, G */
06912      , { 240, 240, -50, -960, -50} /* AU, UG, A, A, U */
06913      }
06914      , {{ 240, 240, -50, -720, -50} /* AU, UG, A, C, E */
06915      , { 240, 240, -50, -960, -50} /* AU, UG, A, C, A */
06916      , { 240, 240, -50, -720, -50} /* AU, UG, A, C, C */
06917      , { 240, 240, -50, -960, -50} /* AU, UG, A, C, G */
06918      , { 240, 240, -50, -720, -50} /* AU, UG, A, C, U */
06919      }
06920      , {{ 1490, 1490, 1200, -960, 1200} /* AU, UG, A, G, E */
06921      , { -260, -260, -560, -1470, -560} /* AU, UG, A, G, A */
06922      , { 240, 240, -50, -960, -50} /* AU, UG, A, G, C */
06923      , { 1490, 1490, 1200, -960, 1200} /* AU, UG, A, G, G */
06924      , { 240, 240, -50, -960, -50} /* AU, UG, A, G, U */
06925      }
06926      , {{ 480, 480, -50, -720, -50} /* AU, UG, A, U, E */
06927      , { 240, 240, -50, -960, -50} /* AU, UG, A, U, A */
06928      , { 240, 240, -50, -720, -50} /* AU, UG, A, U, C */
06929      , { 240, 240, -50, -960, -50} /* AU, UG, A, U, G */
06930      , { 480, 480, -50, -960, -50} /* AU, UG, A, U, U */
06931      }
06932      }
06933      , {{{ 1200, 1190, 1200, 1190, 1200} /* AU, UG, C, E, E */
06934      , { 450, 440, 450, 440, 450} /* AU, UG, C, E, A */
06935      , { -50, -60, -50, -60, -50} /* AU, UG, C, E, C */
06936      , { 1200, 1190, 1200, 1190, 1200} /* AU, UG, C, E, G */
06937      , { -50, -60, -50, -60, -50} /* AU, UG, C, E, U */
06938      }
06939      , {{ 450, 440, 450, 440, 450} /* AU, UG, C, A, E */
06940      , { 450, 440, 450, 440, 450} /* AU, UG, C, A, A */
06941      , { -50, -60, -50, -60, -50} /* AU, UG, C, A, C */
06942      , { -150, -400, -150, -400, -150} /* AU, UG, C, A, G */
06943      , { -50, -60, -50, -60, -50} /* AU, UG, C, A, U */
06944      }
06945      , {{ -50, -60, -50, -60, -50} /* AU, UG, C, C, E */
06946      , { -50, -60, -50, -60, -50} /* AU, UG, C, C, A */
06947      , { -50, -60, -50, -60, -50} /* AU, UG, C, C, C */
06948      , { -50, -60, -50, -60, -50} /* AU, UG, C, C, G */
06949      , { -50, -60, -50, -60, -50} /* AU, UG, C, C, U */
06950      }
06951      , {{ 1200, 1190, 1200, 1190, 1200} /* AU, UG, C, G, E */

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06952 , { -320, -570, -320, -570, -320} /* AU,UG,C,G,A */
06953 , { -50, -60, -50, -60, -50} /* AU,UG,C,G,C */
06954 , { 1200, 1190, 1200, 1190, 1200} /* AU,UG,C,G,G */
06955 , { -50, -60, -50, -60, -50} /* AU,UG,C,G,U */
06956 }
06957 , { { -50, -60, -50, -60, -50} /* AU,UG,C,U,E */
06958 , { -50, -60, -50, -60, -50} /* AU,UG,C,U,A */
06959 , { -50, -60, -50, -60, -50} /* AU,UG,C,U,C */
06960 , { -50, -60, -50, -60, -50} /* AU,UG,C,U,G */
06961 , { -50, -60, -50, -60, -50} /* AU,UG,C,U,U */
06962 }
06963 }
06964 , { { { 1280, -630, 1200, 1280, 1200} /* AU,UG,G,E,E */
06965 , { 1280, -630, 460, 1280, 460} /* AU,UG,G,E,A */
06966 , { 780, -900, -50, 780, -50} /* AU,UG,G,E,C */
06967 , { 1200, -1140, 1200, 780, 1200} /* AU,UG,G,E,G */
06968 , { 780, -900, -50, 780, -50} /* AU,UG,G,E,U */
06969 }
06970 , { { 1280, -630, 460, 1280, 460} /* AU,UG,G,A,E */
06971 , { 1280, -630, 460, 1280, 460} /* AU,UG,G,A,A */
06972 , { 780, -1140, -50, 780, -50} /* AU,UG,G,A,C */
06973 , { -390, -1480, -390, -810, -390} /* AU,UG,G,A,G */
06974 , { 780, -1140, -50, 780, -50} /* AU,UG,G,A,U */
06975 }
06976 , { { 780, -900, -50, 780, -50} /* AU,UG,G,C,E */
06977 , { 780, -1140, -50, 780, -50} /* AU,UG,G,C,A */
06978 , { 780, -900, -50, 780, -50} /* AU,UG,G,C,C */
06979 , { 780, -1140, -50, 780, -50} /* AU,UG,G,C,G */
06980 , { 780, -900, -50, 780, -50} /* AU,UG,G,C,U */
06981 }
06982 , { { 1200, -1140, 1200, 780, 1200} /* AU,UG,G,G,E */
06983 , { -560, -1650, -560, -980, -560} /* AU,UG,G,G,A */
06984 , { 780, -1140, -50, 780, -50} /* AU,UG,G,G,C */
06985 , { 1200, -1140, 1200, -470, 1200} /* AU,UG,G,G,G */
06986 , { 780, -1140, -50, 780, -50} /* AU,UG,G,G,U */
06987 }
06988 , { { 780, -900, -50, 780, -50} /* AU,UG,G,U,E */
06989 , { 780, -1140, -50, 780, -50} /* AU,UG,G,U,A */
06990 , { 780, -900, -50, 780, -50} /* AU,UG,G,U,C */
06991 , { 780, -1140, -50, 780, -50} /* AU,UG,G,U,G */
06992 , { -50, -1140, -50, -470, -50} /* AU,UG,G,U,U */
06993 }
06994 }
06995 , { { { 1200, 1190, 1200, 1190, -280} /* AU,UG,U,E,E */
06996 , { 450, 440, 450, 440, -280} /* AU,UG,U,E,A */
06997 , { -50, -60, -50, -60, -1030} /* AU,UG,U,E,C */
06998 , { 1200, 1190, 1200, 1190, -1030} /* AU,UG,U,E,G */
06999 , { -50, -60, -50, -60, -1030} /* AU,UG,U,E,U */
07000 }
07001 , { { 450, 440, 450, 440, -280} /* AU,UG,U,A,E */
07002 , { 450, 440, 450, 440, -280} /* AU,UG,U,A,A */
07003 , { -50, -60, -50, -60, -1030} /* AU,UG,U,A,C */
07004 , { -150, -400, -150, -400, -1370} /* AU,UG,U,A,G */
07005 , { -50, -60, -50, -60, -1030} /* AU,UG,U,A,U */
07006 }
07007 , { { -50, -60, -50, -60, -1030} /* AU,UG,U,C,E */
07008 , { -50, -60, -50, -60, -1030} /* AU,UG,U,C,A */
07009 , { -50, -60, -50, -60, -1030} /* AU,UG,U,C,C */
07010 , { -50, -60, -50, -60, -1030} /* AU,UG,U,C,G */
07011 , { -50, -60, -50, -60, -1030} /* AU,UG,U,C,U */
07012 }
07013 , { { 1200, 1190, 1200, 1190, -1030} /* AU,UG,U,G,E */
07014 , { -320, -570, -320, -570, -1540} /* AU,UG,U,G,A */
07015 , { -50, -60, -50, -60, -1030} /* AU,UG,U,G,C */
07016 , { 1200, 1190, 1200, 1190, -1030} /* AU,UG,U,G,G */
07017 , { -50, -60, -50, -60, -1030} /* AU,UG,U,G,U */
07018 }
07019 , { { -50, -60, -50, -60, -1030} /* AU,UG,U,U,E */
07020 , { -50, -60, -50, -60, -1030} /* AU,UG,U,U,A */
07021 , { -50, -60, -50, -60, -1030} /* AU,UG,U,U,C */
07022 , { -50, -60, -50, -60, -1030} /* AU,UG,U,U,G */
07023 , { -50, -60, -50, -60, -1030} /* AU,UG,U,U,U */
07024 }
07025 }
07026 }
07027 , { { { 1870, 1870, 1570, 1870, 1570} /* AU,AU,E,E,E */
07028 , { 1870, 1340, 1040, 1870, 1040} /* AU,AU,E,E,A */
07029 , { 1570, 1040, 740, 1570, 740} /* AU,AU,E,E,C */
07030 , { 1870, 1870, 1570, 1570, 1570} /* AU,AU,E,E,G */
07031 , { 1570, 1040, 740, 1570, 740} /* AU,AU,E,E,U */
07032 }
07033 , { { 1870, 1340, 1040, 1870, 1040} /* AU,AU,E,A,E */
07034 , { 1870, 1340, 1040, 1870, 1040} /* AU,AU,E,A,A */
07035 , { 1560, 1030, 730, 1560, 730} /* AU,AU,E,A,C */
07036 , { -50, -50, -110, -360, -110} /* AU,AU,E,A,G */
07037 , { 1560, 1030, 730, 1560, 730} /* AU,AU,E,A,U */
07038 }
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07039 ,{{ 1570, 1040, 750, 1570, 750} /* AU,AU,E,C,E */
07040 ,{ 1570, 1040, 750, 1570, 750} /* AU,AU,E,C,A */
07041 ,{ 1570, 1040, 740, 1570, 740} /* AU,AU,E,C,C */
07042 ,{ 1570, 1040, 750, 1570, 750} /* AU,AU,E,C,G */
07043 ,{ 1570, 1040, 740, 1570, 740} /* AU,AU,E,C,U */
07044 }
07045 ,{{ 1870, 1870, 1570, 1560, 1570} /* AU,AU,E,G,E */
07046 ,{ 130, 130, 70, -180, 70} /* AU,AU,E,G,A */
07047 ,{ 1560, 1030, 730, 1560, 730} /* AU,AU,E,G,C */
07048 ,{ 1870, 1870, 1570, 1560, 1570} /* AU,AU,E,G,G */
07049 ,{ 1560, 1030, 730, 1560, 730} /* AU,AU,E,G,U */
07050 }
07051 ,{{ 1570, 1040, 750, 1570, 750} /* AU,AU,E,U,E */
07052 ,{ 1570, 1040, 750, 1570, 750} /* AU,AU,E,U,A */
07053 ,{ 1570, 1040, 740, 1570, 740} /* AU,AU,E,U,C */
07054 ,{ 1570, 1040, 750, 1570, 750} /* AU,AU,E,U,G */
07055 ,{ 300, 300, -230, -250, -230} /* AU,AU,E,U,U */
07056 }
07057 }
07058 ,{{{ 1870, 1870, 1570, 130, 1570} /* AU,AU,A,E,E */
07059 ,{ 1340, 1340, 1040, 130, 1040} /* AU,AU,A,E,A */
07060 ,{ 1040, 1040, 740, 70, 740} /* AU,AU,A,E,C */
07061 ,{ 1870, 1870, 1570, -160, 1570} /* AU,AU,A,E,G */
07062 ,{ 1040, 1040, 740, 70, 740} /* AU,AU,A,E,U */
07063 }
07064 ,{{ 1340, 1340, 1040, 130, 1040} /* AU,AU,A,A,E */
07065 ,{ 1340, 1340, 1040, 130, 1040} /* AU,AU,A,A,A */
07066 ,{ 1030, 1030, 730, -180, 730} /* AU,AU,A,A,C */
07067 ,{ -50, -50, -340, -1260, -340} /* AU,AU,A,A,G */
07068 ,{ 1030, 1030, 730, -180, 730} /* AU,AU,A,A,U */
07069 }
07070 ,{{ 1040, 1040, 750, 70, 750} /* AU,AU,A,C,E */
07071 ,{ 1040, 1040, 750, -160, 750} /* AU,AU,A,C,A */
07072 ,{ 1040, 1040, 740, 70, 740} /* AU,AU,A,C,C */
07073 ,{ 1040, 1040, 750, -160, 750} /* AU,AU,A,C,G */
07074 ,{ 1040, 1040, 740, 70, 740} /* AU,AU,A,C,U */
07075 }
07076 ,{{ 1870, 1870, 1570, -180, 1570} /* AU,AU,A,G,E */
07077 ,{ 130, 130, -160, -1080, -160} /* AU,AU,A,G,A */
07078 ,{ 1030, 1030, 730, -180, 730} /* AU,AU,A,G,C */
07079 ,{ 1870, 1870, 1570, -590, 1570} /* AU,AU,A,G,G */
07080 ,{ 1030, 1030, 730, -180, 730} /* AU,AU,A,G,U */
07081 }
07082 ,{{ 1040, 1040, 750, 70, 750} /* AU,AU,A,U,E */
07083 ,{ 1040, 1040, 750, -160, 750} /* AU,AU,A,U,A */
07084 ,{ 1040, 1040, 740, 70, 740} /* AU,AU,A,U,C */
07085 ,{ 1040, 1040, 750, -160, 750} /* AU,AU,A,U,G */
07086 ,{ 300, 300, -230, -1150, -230} /* AU,AU,A,U,U */
07087 }
07088 }
07089 ,{{{ 1570, 1560, 1570, 1560, 1570} /* AU,AU,C,E,E */
07090 ,{ 1040, 1030, 1040, 1030, 1040} /* AU,AU,C,E,A */
07091 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,E,C */
07092 ,{ 1570, 1560, 1570, 1560, 1570} /* AU,AU,C,E,G */
07093 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,E,U */
07094 }
07095 ,{{ 1040, 1030, 1040, 1030, 1040} /* AU,AU,C,A,E */
07096 ,{ 1040, 1030, 1040, 1030, 1040} /* AU,AU,C,A,A */
07097 ,{ 730, 720, 730, 720, 730} /* AU,AU,C,A,C */
07098 ,{ -110, -360, -110, -360, -110} /* AU,AU,C,A,G */
07099 ,{ 730, 720, 730, 720, 730} /* AU,AU,C,A,U */
07100 }
07101 ,{{ 740, 730, 740, 730, 740} /* AU,AU,C,C,E */
07102 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,C,A */
07103 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,C,C */
07104 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,C,G */
07105 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,C,U */
07106 }
07107 ,{{ 1570, 1560, 1570, 1560, 1570} /* AU,AU,C,G,E */
07108 ,{ 70, -180, 70, -180, 70} /* AU,AU,C,G,A */
07109 ,{ 730, 720, 730, 720, 730} /* AU,AU,C,G,C */
07110 ,{ 1570, 1560, 1570, 1560, 1570} /* AU,AU,C,G,G */
07111 ,{ 730, 720, 730, 720, 730} /* AU,AU,C,G,U */
07112 }
07113 ,{{ 740, 730, 740, 730, 740} /* AU,AU,C,U,E */
07114 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,U,A */
07115 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,U,C */
07116 ,{ 740, 730, 740, 730, 740} /* AU,AU,C,U,G */
07117 ,{ -240, -250, -240, -250, -240} /* AU,AU,C,U,U */
07118 }
07119 }
07120 ,{{{ 1870, -50, 1570, 1870, 1570} /* AU,AU,G,E,E */
07121 ,{ 1870, -50, 1040, 1870, 1040} /* AU,AU,G,E,A */
07122 ,{ 1570, -110, 740, 1570, 740} /* AU,AU,G,E,C */
07123 ,{ 1570, -340, 1570, 1570, 1570} /* AU,AU,G,E,G */
07124 ,{ 1570, -110, 740, 1570, 740} /* AU,AU,G,E,U */
07125 }

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07126 ,{{ 1870, -50, 1040, 1870, 1040} /* AU,AU,G,A,E */
07127 ,{ 1870, -50, 1040, 1870, 1040} /* AU,AU,G,A,A */
07128 ,{ 1560, -360, 730, 1560, 730} /* AU,AU,G,A,C */
07129 ,{ -340, -1440, -340, -770, -340} /* AU,AU,G,A,G */
07130 ,{ 1560, -360, 730, 1560, 730} /* AU,AU,G,A,U */
07131 }
07132 ,{{ 1570, -110, 750, 1570, 750} /* AU,AU,G,C,E */
07133 ,{ 1570, -340, 750, 1570, 750} /* AU,AU,G,C,A */
07134 ,{ 1570, -110, 740, 1570, 740} /* AU,AU,G,C,C */
07135 ,{ 1570, -340, 750, 1570, 750} /* AU,AU,G,C,G */
07136 ,{ 1570, -110, 740, 1570, 740} /* AU,AU,G,C,U */
07137 }
07138 ,{{ 1570, -360, 1570, 1560, 1570} /* AU,AU,G,G,E */
07139 ,{ -160, -1260, -160, -590, -160} /* AU,AU,G,G,A */
07140 ,{ 1560, -360, 730, 1560, 730} /* AU,AU,G,G,C */
07141 ,{ 1570, -770, 1570, -100, 1570} /* AU,AU,G,G,G */
07142 ,{ 1560, -360, 730, 1560, 730} /* AU,AU,G,G,U */
07143 }
07144 ,{{ 1570, -110, 750, 1570, 750} /* AU,AU,G,U,E */
07145 ,{ 1570, -340, 750, 1570, 750} /* AU,AU,G,U,A */
07146 ,{ 1570, -110, 740, 1570, 740} /* AU,AU,G,U,C */
07147 ,{ 1570, -340, 750, 1570, 750} /* AU,AU,G,U,G */
07148 ,{ -230, -1330, -230, -660, -230} /* AU,AU,G,U,U */
07149 }
07150 }
07151 ,{{{ 1570, 1560, 1570, 1560, 300} /* AU,AU,U,E,E */
07152 ,{ 1040, 1030, 1040, 1030, 300} /* AU,AU,U,E,A */
07153 ,{ 740, 730, 740, 730, -240} /* AU,AU,U,E,C */
07154 ,{ 1570, 1560, 1570, 1560, -230} /* AU,AU,U,E,G */
07155 ,{ 740, 730, 740, 730, -240} /* AU,AU,U,E,U */
07156 }
07157 ,{{{ 1040, 1030, 1040, 1030, 300} /* AU,AU,U,A,E */
07158 ,{ 1040, 1030, 1040, 1030, 300} /* AU,AU,U,A,A */
07159 ,{ 730, 720, 730, 720, -250} /* AU,AU,U,A,C */
07160 ,{ -110, -360, -110, -360, -1330} /* AU,AU,U,A,G */
07161 ,{ 730, 720, 730, 720, -250} /* AU,AU,U,A,U */
07162 }
07163 ,{{{ 740, 730, 740, 730, -230} /* AU,AU,U,C,E */
07164 ,{ 740, 730, 740, 730, -230} /* AU,AU,U,C,A */
07165 ,{ 740, 730, 740, 730, -240} /* AU,AU,U,C,C */
07166 ,{ 740, 730, 740, 730, -230} /* AU,AU,U,C,G */
07167 ,{ 740, 730, 740, 730, -240} /* AU,AU,U,C,U */
07168 }
07169 ,{{{ 1570, 1560, 1570, 1560, -250} /* AU,AU,U,G,E */
07170 ,{ 70, -180, 70, -180, -1150} /* AU,AU,U,G,A */
07171 ,{ 730, 720, 730, 720, -250} /* AU,AU,U,G,C */
07172 ,{ 1570, 1560, 1570, 1560, -660} /* AU,AU,U,G,G */
07173 ,{ 730, 720, 730, 720, -250} /* AU,AU,U,G,U */
07174 }
07175 ,{{{ 740, 730, 740, 730, -230} /* AU,AU,U,U,E */
07176 ,{ 740, 730, 740, 730, -230} /* AU,AU,U,U,A */
07177 ,{ 740, 730, 740, 730, -240} /* AU,AU,U,U,C */
07178 ,{ 740, 730, 740, 730, -230} /* AU,AU,U,U,G */
07179 ,{ -240, -250, -240, -250, -1220} /* AU,AU,U,U,U */
07180 }
07181 }
07182 }
07183 ,{{{ 2050, 2050, 1760, 1930, 1760} /* AU,UA,E,E,E */
07184 ,{ 1930, 1400, 1110, 1930, 1110} /* AU,UA,E,E,A */
07185 ,{ 1800, 1270, 980, 1800, 980} /* AU,UA,E,E,C */
07186 ,{ 2050, 2050, 1760, 1800, 1760} /* AU,UA,E,E,G */
07187 ,{ 1670, 1140, 850, 1670, 850} /* AU,UA,E,E,U */
07188 }
07189 ,{{{ 1930, 1400, 1110, 1930, 1110} /* AU,UA,E,A,E */
07190 ,{ 1930, 1400, 1110, 1930, 1110} /* AU,UA,E,A,A */
07191 ,{ 1650, 1120, 830, 1650, 830} /* AU,UA,E,A,C */
07192 ,{ 0, 0, -60, -310, -60} /* AU,UA,E,A,G */
07193 ,{ 1650, 1120, 830, 1650, 830} /* AU,UA,E,A,U */
07194 }
07195 ,{{{ 1800, 1270, 980, 1800, 980} /* AU,UA,E,C,E */
07196 ,{ 1800, 1270, 980, 1800, 980} /* AU,UA,E,C,A */
07197 ,{ 1800, 1270, 980, 1800, 980} /* AU,UA,E,C,C */
07198 ,{ 1800, 1270, 980, 1800, 980} /* AU,UA,E,C,G */
07199 ,{ 1670, 1140, 850, 1670, 850} /* AU,UA,E,C,U */
07200 }
07201 ,{{{ 2050, 2050, 1760, 1740, 1760} /* AU,UA,E,G,E */
07202 ,{ -300, -300, -360, -610, -360} /* AU,UA,E,G,A */
07203 ,{ 1650, 1120, 830, 1650, 830} /* AU,UA,E,G,C */
07204 ,{ 2050, 2050, 1760, 1740, 1760} /* AU,UA,E,G,G */
07205 ,{ 1650, 1120, 830, 1650, 830} /* AU,UA,E,G,U */
07206 }
07207 ,{{{ 1800, 1270, 980, 1800, 980} /* AU,UA,E,U,E */
07208 ,{ 1800, 1270, 980, 1800, 980} /* AU,UA,E,U,A */
07209 ,{ 1360, 830, 540, 1360, 540} /* AU,UA,E,U,C */
07210 ,{ 1800, 1270, 980, 1800, 980} /* AU,UA,E,U,G */
07211 ,{ 570, 570, 40, 20, 40} /* AU,UA,E,U,U */
07212 }
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07213    }
07214    ,{{{ 2050, 2050, 1760, 300, 1760} /* AU,UA,A,E,E */
07215    ,{ 1400, 1400, 1110, 190, 1110} /* AU,UA,A,E,A */
07216    ,{ 1270, 1270, 980, 300, 980} /* AU,UA,A,E,C */
07217    ,{ 2050, 2050, 1760, 60, 1760} /* AU,UA,A,E,G */
07218    ,{ 1140, 1140, 850, 180, 850} /* AU,UA,A,E,U */
07219    }
07220    ,{{{ 1400, 1400, 1110, 190, 1110} /* AU,UA,A,A,E */
07221    ,{ 1400, 1400, 1110, 190, 1110} /* AU,UA,A,A,A */
07222    ,{ 1120, 1120, 830, -80, 830} /* AU,UA,A,A,C */
07223    ,{ 0, 0, -290, -1210, -290} /* AU,UA,A,A,G */
07224    ,{ 1120, 1120, 830, -80, 830} /* AU,UA,A,A,U */
07225    }
07226    ,{{{ 1270, 1270, 980, 300, 980} /* AU,UA,A,C,E */
07227    ,{ 1270, 1270, 980, 60, 980} /* AU,UA,A,C,A */
07228    ,{ 1270, 1270, 980, 300, 980} /* AU,UA,A,C,C */
07229    ,{ 1270, 1270, 980, 60, 980} /* AU,UA,A,C,G */
07230    ,{ 1140, 1140, 850, 180, 850} /* AU,UA,A,C,U */
07231    }
07232    ,{{{ 2050, 2050, 1760, -80, 1760} /* AU,UA,A,G,E */
07233    ,{ -300, -300, -590, -1510, -590} /* AU,UA,A,G,A */
07234    ,{ 1120, 1120, 830, -80, 830} /* AU,UA,A,G,C */
07235    ,{ 2050, 2050, 1760, -400, 1760} /* AU,UA,A,G,G */
07236    ,{ 1120, 1120, 830, -80, 830} /* AU,UA,A,G,U */
07237    }
07238    ,{{{ 1270, 1270, 980, 60, 980} /* AU,UA,A,U,E */
07239    ,{ 1270, 1270, 980, 60, 980} /* AU,UA,A,U,A */
07240    ,{ 830, 830, 540, -130, 540} /* AU,UA,A,U,C */
07241    ,{ 1270, 1270, 980, 60, 980} /* AU,UA,A,U,G */
07242    ,{ 570, 570, 40, -870, 40} /* AU,UA,A,U,U */
07243    }
07244    }
07245    ,{{{ 1750, 1740, 1750, 1740, 1750} /* AU,UA,C,E,E */
07246    ,{ 1100, 1090, 1100, 1090, 1100} /* AU,UA,C,E,A */
07247    ,{ 970, 960, 970, 960, 970} /* AU,UA,C,E,C */
07248    ,{ 1750, 1740, 1750, 1740, 1750} /* AU,UA,C,E,G */
07249    ,{ 840, 830, 840, 830, 840} /* AU,UA,C,E,U */
07250    }
07251    ,{{{ 1100, 1090, 1100, 1090, 1100} /* AU,UA,C,A,E */
07252    ,{ 1100, 1090, 1100, 1090, 1100} /* AU,UA,C,A,A */
07253    ,{ 820, 810, 820, 810, 820} /* AU,UA,C,A,C */
07254    ,{ -60, -310, -60, -310, -60} /* AU,UA,C,A,G */
07255    ,{ 820, 810, 820, 810, 820} /* AU,UA,C,A,U */
07256    }
07257    ,{{{ 970, 960, 970, 960, 970} /* AU,UA,C,C,E */
07258    ,{ 970, 960, 970, 960, 970} /* AU,UA,C,C,A */
07259    ,{ 970, 960, 970, 960, 970} /* AU,UA,C,C,C */
07260    ,{ 970, 960, 970, 960, 970} /* AU,UA,C,C,G */
07261    ,{ 840, 830, 840, 830, 840} /* AU,UA,C,C,U */
07262    }
07263    ,{{{ 1750, 1740, 1750, 1740, 1750} /* AU,UA,C,G,E */
07264    ,{ -360, -610, -360, -610, -360} /* AU,UA,C,G,A */
07265    ,{ 820, 810, 820, 810, 820} /* AU,UA,C,G,C */
07266    ,{ 1750, 1740, 1750, 1740, 1750} /* AU,UA,C,G,G */
07267    ,{ 820, 810, 820, 810, 820} /* AU,UA,C,G,U */
07268    }
07269    ,{{{ 970, 960, 970, 960, 970} /* AU,UA,C,U,E */
07270    ,{ 970, 960, 970, 960, 970} /* AU,UA,C,U,A */
07271    ,{ 530, 520, 530, 520, 530} /* AU,UA,C,U,C */
07272    ,{ 970, 960, 970, 960, 970} /* AU,UA,C,U,G */
07273    ,{ 30, 20, 30, 20, 30} /* AU,UA,C,U,U */
07274    }
07275    }
07276    ,{{{ 1930, 130, 1760, 1930, 1760} /* AU,UA,G,E,E */
07277    ,{ 1930, 10, 1110, 1930, 1110} /* AU,UA,G,E,A */
07278    ,{ 1800, 130, 980, 1800, 980} /* AU,UA,G,E,C */
07279    ,{ 1800, -110, 1760, 1800, 1760} /* AU,UA,G,E,G */
07280    ,{ 1670, 0, 850, 1670, 850} /* AU,UA,G,E,U */
07281    }
07282    ,{{{ 1930, 10, 1110, 1930, 1110} /* AU,UA,G,A,E */
07283    ,{ 1930, 10, 1110, 1930, 1110} /* AU,UA,G,A,A */
07284    ,{ 1650, -260, 830, 1650, 830} /* AU,UA,G,A,C */
07285    ,{ -290, -1390, -290, -720, -290} /* AU,UA,G,A,G */
07286    ,{ 1650, -260, 830, 1650, 830} /* AU,UA,G,A,U */
07287    }
07288    ,{{{ 1800, 130, 980, 1800, 980} /* AU,UA,G,C,E */
07289    ,{ 1800, -110, 980, 1800, 980} /* AU,UA,G,C,A */
07290    ,{ 1800, 130, 980, 1800, 980} /* AU,UA,G,C,C */
07291    ,{ 1800, -110, 980, 1800, 980} /* AU,UA,G,C,G */
07292    ,{ 1670, 0, 850, 1670, 850} /* AU,UA,G,C,U */
07293    }
07294    ,{{{ 1760, -260, 1760, 1650, 1760} /* AU,UA,G,G,E */
07295    ,{ -590, -1690, -590, -1020, -590} /* AU,UA,G,G,A */
07296    ,{ 1650, -260, 830, 1650, 830} /* AU,UA,G,G,C */
07297    ,{ 1760, -580, 1760, 80, 1760} /* AU,UA,G,G,G */
07298    ,{ 1650, -260, 830, 1650, 830} /* AU,UA,G,G,U */
07299    }

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07300 ,{{ 1800, -110, 980, 1800, 980} /* AU,UA,G,U,E */
07301 ,{ 1800, -110, 980, 1800, 980} /* AU,UA,G,U,A */
07302 ,{ 1360, -310, 540, 1360, 540} /* AU,UA,G,U,C */
07303 ,{ 1800, -110, 980, 1800, 980} /* AU,UA,G,U,G */
07304 ,{ 40, -1050, 40, -380, 40} /* AU,UA,G,U,U */
07305 }
07306 }
07307 ,{{{ 1750, 1740, 1750, 1740, 360} /* AU,UA,U,E,E */
07308 ,{ 1100, 1090, 1100, 1090, 360} /* AU,UA,U,E,A */
07309 ,{ 970, 960, 970, 960, 0} /* AU,UA,U,E,C */
07310 ,{ 1750, 1740, 1750, 1740, 0} /* AU,UA,U,E,G */
07311 ,{ 840, 830, 840, 830, -130} /* AU,UA,U,E,U */
07312 }
07313 ,{{{ 1100, 1090, 1100, 1090, 360} /* AU,UA,U,A,E */
07314 ,{ 1100, 1090, 1100, 1090, 360} /* AU,UA,U,A,A */
07315 ,{ 820, 810, 820, 810, -150} /* AU,UA,U,A,C */
07316 ,{ -60, -310, -60, -310, -1280} /* AU,UA,U,A,G */
07317 ,{ 820, 810, 820, 810, -150} /* AU,UA,U,A,U */
07318 }
07319 ,{{{ 970, 960, 970, 960, 0} /* AU,UA,U,C,E */
07320 ,{ 970, 960, 970, 960, 0} /* AU,UA,U,C,A */
07321 ,{ 970, 960, 970, 960, 0} /* AU,UA,U,C,C */
07322 ,{ 970, 960, 970, 960, 0} /* AU,UA,U,C,G */
07323 ,{ 840, 830, 840, 830, -130} /* AU,UA,U,C,U */
07324 }
07325 ,{{{ 1750, 1740, 1750, 1740, -150} /* AU,UA,U,G,E */
07326 ,{ -360, -610, -360, -610, -1580} /* AU,UA,U,G,A */
07327 ,{ 820, 810, 820, 810, -150} /* AU,UA,U,G,C */
07328 ,{ 1750, 1740, 1750, 1740, -470} /* AU,UA,U,G,G */
07329 ,{ 820, 810, 820, 810, -150} /* AU,UA,U,G,U */
07330 }
07331 ,{{{ 970, 960, 970, 960, 0} /* AU,UA,U,U,E */
07332 ,{ 970, 960, 970, 960, 0} /* AU,UA,U,U,A */
07333 ,{ 530, 520, 530, 520, -440} /* AU,UA,U,U,C */
07334 ,{ 970, 960, 970, 960, 0} /* AU,UA,U,U,G */
07335 ,{ 30, 20, 30, 20, -940} /* AU,UA,U,U,U */
07336 }
07337 }
07338 }
07339 ,{{{ 2050, 2050, 1760, 1930, 1760} /* AU,NN,E,E,E */
07340 ,{ 1930, 1400, 1110, 1930, 1110} /* AU,NN,E,E,A */
07341 ,{ 1800, 1270, 980, 1800, 980} /* AU,NN,E,E,C */
07342 ,{ 2050, 2050, 1760, 1800, 1760} /* AU,NN,E,E,G */
07343 ,{ 1670, 1140, 850, 1670, 850} /* AU,NN,E,E,U */
07344 }
07345 ,{{{ 1930, 1400, 1110, 1930, 1110} /* AU,NN,E,A,E */
07346 ,{ 1930, 1400, 1110, 1930, 1110} /* AU,NN,E,A,A */
07347 ,{ 1650, 1120, 830, 1650, 830} /* AU,NN,E,A,C */
07348 ,{ 220, 220, 170, -80, 170} /* AU,NN,E,A,G */
07349 ,{ 1650, 1120, 830, 1650, 830} /* AU,NN,E,A,U */
07350 }
07351 ,{{{ 1800, 1270, 980, 1800, 980} /* AU,NN,E,C,E */
07352 ,{ 1800, 1270, 980, 1800, 980} /* AU,NN,E,C,A */
07353 ,{ 1800, 1270, 980, 1800, 980} /* AU,NN,E,C,C */
07354 ,{ 1800, 1270, 980, 1800, 980} /* AU,NN,E,C,G */
07355 ,{ 1670, 1140, 850, 1670, 850} /* AU,NN,E,C,U */
07356 }
07357 ,{{{ 2050, 2050, 1760, 1740, 1760} /* AU,NN,E,G,E */
07358 ,{ 130, 130, 70, -180, 70} /* AU,NN,E,G,A */
07359 ,{ 1650, 1120, 830, 1650, 830} /* AU,NN,E,G,C */
07360 ,{ 2050, 2050, 1760, 1740, 1760} /* AU,NN,E,G,G */
07361 ,{ 1650, 1120, 830, 1650, 830} /* AU,NN,E,G,U */
07362 }
07363 ,{{{ 1800, 1270, 980, 1800, 980} /* AU,NN,E,U,E */
07364 ,{ 1800, 1270, 980, 1800, 980} /* AU,NN,E,U,A */
07365 ,{ 1570, 1040, 740, 1570, 740} /* AU,NN,E,U,C */
07366 ,{ 1800, 1270, 980, 1800, 980} /* AU,NN,E,U,G */
07367 ,{ 570, 570, 40, 20, 40} /* AU,NN,E,U,U */
07368 }
07369 }
07370 ,{{{ 2050, 2050, 1760, 300, 1760} /* AU,NN,A,E,E */
07371 ,{ 1400, 1400, 1110, 190, 1110} /* AU,NN,A,E,A */
07372 ,{ 1270, 1270, 980, 300, 980} /* AU,NN,A,E,C */
07373 ,{ 2050, 2050, 1760, 60, 1760} /* AU,NN,A,E,G */
07374 ,{ 1140, 1140, 850, 180, 850} /* AU,NN,A,E,U */
07375 }
07376 ,{{{ 1400, 1400, 1110, 190, 1110} /* AU,NN,A,A,E */
07377 ,{ 1400, 1400, 1110, 190, 1110} /* AU,NN,A,A,A */
07378 ,{ 1120, 1120, 830, -80, 830} /* AU,NN,A,A,C */
07379 ,{ 220, 220, -70, -980, -70} /* AU,NN,A,A,G */
07380 ,{ 1120, 1120, 830, -80, 830} /* AU,NN,A,A,U */
07381 }
07382 ,{{{ 1270, 1270, 980, 300, 980} /* AU,NN,A,C,E */
07383 ,{ 1270, 1270, 980, 60, 980} /* AU,NN,A,C,A */
07384 ,{ 1270, 1270, 980, 300, 980} /* AU,NN,A,C,C */
07385 ,{ 1270, 1270, 980, 60, 980} /* AU,NN,A,C,G */
07386 ,{ 1140, 1140, 850, 180, 850} /* AU,NN,A,C,U */
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07387      }
07388      ,{{ 2050, 2050, 1760, -80, 1760} /* AU,NN,A,G,E */
07389      ,{ 130, 130, -160, -1080, -160} /* AU,NN,A,G,A */
07390      ,{ 1120, 1120, 830, -80, 830} /* AU,NN,A,G,C */
07391      ,{ 2050, 2050, 1760, -400, 1760} /* AU,NN,A,G,G */
07392      ,{ 1120, 1120, 830, -80, 830} /* AU,NN,A,G,U */
07393      }
07394      ,{{ 1270, 1270, 980, 70, 980} /* AU,NN,A,U,E */
07395      ,{ 1270, 1270, 980, 60, 980} /* AU,NN,A,U,A */
07396      ,{ 1040, 1040, 740, 70, 740} /* AU,NN,A,U,C */
07397      ,{ 1270, 1270, 980, 60, 980} /* AU,NN,A,U,G */
07398      ,{ 570, 570, 40, -870, 40} /* AU,NN,A,U,U */
07399      }
07400      }
07401      ,{{{ 1750, 1740, 1750, 1740, 1750} /* AU,NN,C,E,E */
07402      ,{ 1100, 1090, 1100, 1090, 1100} /* AU,NN,C,E,A */
07403      ,{ 970, 960, 970, 960, 970} /* AU,NN,C,E,C */
07404      ,{ 1750, 1740, 1750, 1740, 1750} /* AU,NN,C,E,G */
07405      ,{ 840, 830, 840, 830, 840} /* AU,NN,C,E,U */
07406      }
07407      ,{{{ 1100, 1090, 1100, 1090, 1100} /* AU,NN,C,A,E */
07408      ,{ 1100, 1090, 1100, 1090, 1100} /* AU,NN,C,A,A */
07409      ,{ 820, 810, 820, 810, 820} /* AU,NN,C,A,C */
07410      ,{ 170, -80, 170, -80, 170} /* AU,NN,C,A,G */
07411      ,{ 820, 810, 820, 810, 820} /* AU,NN,C,A,U */
07412      }
07413      ,{{{ 970, 960, 970, 960, 970} /* AU,NN,C,C,E */
07414      ,{ 970, 960, 970, 960, 970} /* AU,NN,C,C,A */
07415      ,{ 970, 960, 970, 960, 970} /* AU,NN,C,C,C */
07416      ,{ 970, 960, 970, 960, 970} /* AU,NN,C,C,G */
07417      ,{ 840, 830, 840, 830, 840} /* AU,NN,C,C,U */
07418      }
07419      ,{{{ 1750, 1740, 1750, 1740, 1750} /* AU,NN,C,G,E */
07420      ,{ 70, -180, 70, -180, 70} /* AU,NN,C,G,A */
07421      ,{ 820, 810, 820, 810, 820} /* AU,NN,C,G,C */
07422      ,{ 1750, 1740, 1750, 1740, 1750} /* AU,NN,C,G,G */
07423      ,{ 820, 810, 820, 810, 820} /* AU,NN,C,G,U */
07424      }
07425      ,{{{ 970, 960, 970, 960, 970} /* AU,NN,C,U,E */
07426      ,{ 970, 960, 970, 960, 970} /* AU,NN,C,U,A */
07427      ,{ 740, 730, 740, 730, 740} /* AU,NN,C,U,C */
07428      ,{ 970, 960, 970, 960, 970} /* AU,NN,C,U,G */
07429      ,{ 30, 20, 30, 20, 30} /* AU,NN,C,U,U */
07430      }
07431      }
07432      ,{{{ 1930, 130, 1760, 1930, 1760} /* AU,NN,G,E,E */
07433      ,{ 1930, 10, 1110, 1930, 1110} /* AU,NN,G,E,A */
07434      ,{ 1800, 130, 980, 1800, 980} /* AU,NN,G,E,C */
07435      ,{ 1800, -110, 1760, 1800, 1760} /* AU,NN,G,E,G */
07436      ,{ 1670, 0, 850, 1670, 850} /* AU,NN,G,E,U */
07437      }
07438      ,{{{ 1930, 10, 1110, 1930, 1110} /* AU,NN,G,A,E */
07439      ,{ 1930, 10, 1110, 1930, 1110} /* AU,NN,G,A,A */
07440      ,{ 1650, -260, 830, 1650, 830} /* AU,NN,G,A,C */
07441      ,{ -70, -1160, -70, -490, -70} /* AU,NN,G,A,G */
07442      ,{ 1650, -260, 830, 1650, 830} /* AU,NN,G,A,U */
07443      }
07444      ,{{{ 1800, 130, 980, 1800, 980} /* AU,NN,G,C,E */
07445      ,{ 1800, -110, 980, 1800, 980} /* AU,NN,G,C,A */
07446      ,{ 1800, 130, 980, 1800, 980} /* AU,NN,G,C,C */
07447      ,{ 1800, -110, 980, 1800, 980} /* AU,NN,G,C,G */
07448      ,{ 1670, 0, 850, 1670, 850} /* AU,NN,G,C,U */
07449      }
07450      ,{{{ 1760, -260, 1760, 1650, 1760} /* AU,NN,G,G,E */
07451      ,{ -160, -1260, -160, -590, -160} /* AU,NN,G,G,A */
07452      ,{ 1650, -260, 830, 1650, 830} /* AU,NN,G,G,C */
07453      ,{ 1760, -580, 1760, 80, 1760} /* AU,NN,G,G,G */
07454      ,{ 1650, -260, 830, 1650, 830} /* AU,NN,G,G,U */
07455      }
07456      ,{{{ 1800, -110, 980, 1800, 980} /* AU,NN,G,U,E */
07457      ,{ 1800, -110, 980, 1800, 980} /* AU,NN,G,U,A */
07458      ,{ 1570, -110, 740, 1570, 740} /* AU,NN,G,U,C */
07459      ,{ 1800, -110, 980, 1800, 980} /* AU,NN,G,U,G */
07460      ,{ 40, -1050, 40, -380, 40} /* AU,NN,G,U,U */
07461      }
07462      }
07463      ,{{{ 1750, 1740, 1750, 1740, 360} /* AU,NN,U,E,E */
07464      ,{ 1100, 1090, 1100, 1090, 360} /* AU,NN,U,E,A */
07465      ,{ 970, 960, 970, 960, 0} /* AU,NN,U,E,C */
07466      ,{ 1750, 1740, 1750, 1740, 0} /* AU,NN,U,E,G */
07467      ,{ 840, 830, 840, 830, -130} /* AU,NN,U,E,U */
07468      }
07469      ,{{{ 1100, 1090, 1100, 1090, 360} /* AU,NN,U,A,E */
07470      ,{ 1100, 1090, 1100, 1090, 360} /* AU,NN,U,A,A */
07471      ,{ 820, 810, 820, 810, -150} /* AU,NN,U,A,C */
07472      ,{ 170, -80, 170, -80, -1050} /* AU,NN,U,A,G */
07473      ,{ 820, 810, 820, 810, -150} /* AU,NN,U,A,U */

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07474     }
07475     ,{{    970,    960,    970,    960,    0} /* AU,NN,U,C,E */
07476     ,{{    970,    960,    970,    960,    0} /* AU,NN,U,C,A */
07477     ,{{    970,    960,    970,    960,    0} /* AU,NN,U,C,C */
07478     ,{{    970,    960,    970,    960,    0} /* AU,NN,U,C,G */
07479     ,{{    840,    830,    840,    830, -130} /* AU,NN,U,C,U */
07480     }
07481     ,{{   1750,   1740,   1750,   1740, -150} /* AU,NN,U,G,E */
07482     ,{{     70,   -180,     70,   -180, -1150} /* AU,NN,U,G,A */
07483     ,{{    820,    810,    820,    810, -150} /* AU,NN,U,G,C */
07484     ,{{   1750,   1740,   1750,   1740, -470} /* AU,NN,U,G,G */
07485     ,{{    820,    810,    820,    810, -150} /* AU,NN,U,G,U */
07486     }
07487     ,{{    970,    960,    970,    960,    0} /* AU,NN,U,U,E */
07488     ,{{    970,    960,    970,    960,    0} /* AU,NN,U,U,A */
07489     ,{{    740,    730,    740,    730, -240} /* AU,NN,U,U,C */
07490     ,{{    970,    960,    970,    960,    0} /* AU,NN,U,U,G */
07491     ,{{     30,     20,     30,     20, -940} /* AU,NN,U,U,U */
07492     }
07493     }
07494     }
07495     }
07496     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,E,E */
07497     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,E,A */
07498     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,E,C */
07499     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,E,G */
07500     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,E,U */
07501     }
07502     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,A,E */
07503     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,A,A */
07504     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,A,C */
07505     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,A,G */
07506     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,A,U */
07507     }
07508     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,C,E */
07509     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,C,A */
07510     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,C,C */
07511     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,C,G */
07512     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,C,U */
07513     }
07514     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,G,E */
07515     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,G,A */
07516     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,G,C */
07517     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,G,G */
07518     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,G,U */
07519     }
07520     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,U,E */
07521     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,U,A */
07522     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,U,C */
07523     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,U,G */
07524     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,E,U,U */
07525     }
07526     }
07527     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,E,E */
07528     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,E,A */
07529     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,E,C */
07530     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,E,G */
07531     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,E,U */
07532     }
07533     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,A,E */
07534     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,A,A */
07535     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,A,C */
07536     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,A,G */
07537     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,A,U */
07538     }
07539     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,C,E */
07540     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,C,A */
07541     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,C,C */
07542     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,C,G */
07543     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,C,U */
07544     }
07545     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,G,E */
07546     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,G,A */
07547     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,G,C */
07548     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,G,G */
07549     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,G,U */
07550     }
07551     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,U,E */
07552     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,U,A */
07553     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,U,C */
07554     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,U,G */
07555     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,A,U,U */
07556     }
07557     }
07558     ,{{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,C,E,E */
07559     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,C,E,A */
07560     ,{{    INF,    INF,    INF,    INF,    INF} /* UA,NP,C,E,C */
```

```

07561      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,E,G */
07562      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,E,U */
07563      }
07564      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,E */
07565      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,A */
07566      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,C */
07567      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,G */
07568      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,U */
07569      }
07570      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,E */
07571      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,A */
07572      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,C */
07573      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,G */
07574      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,U */
07575      }
07576      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,E */
07577      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,A */
07578      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,C */
07579      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,G */
07580      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,U */
07581      }
07582      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U,E */
07583      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U,A */
07584      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U,C */
07585      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U,G */
07586      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U,U */
07587      }
07588      }
07589      , {{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,E */
07590      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,A */
07591      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,C */
07592      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,G */
07593      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,U */
07594      }
07595      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,E */
07596      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,A */
07597      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,C */
07598      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,G */
07599      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,U */
07600      }
07601      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,E */
07602      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,A */
07603      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,C */
07604      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,G */
07605      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,U */
07606      }
07607      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,E */
07608      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,A */
07609      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,C */
07610      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,G */
07611      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,U */
07612      }
07613      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U,E */
07614      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U,A */
07615      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U,C */
07616      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U,G */
07617      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U,U */
07618      }
07619      }
07620      , {{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,E,E */
07621      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,E,A */
07622      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,E,C */
07623      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,E,G */
07624      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,E,U */
07625      }
07626      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,A,E */
07627      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,A,A */
07628      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,A,C */
07629      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,A,G */
07630      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,A,U */
07631      }
07632      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,E */
07633      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,A */
07634      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,C */
07635      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,G */
07636      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,C,U */
07637      }
07638      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,E */
07639      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,A */
07640      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,C */
07641      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,G */
07642      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,G,U */
07643      }
07644      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,E */
07645      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,A */
07646      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,C */
07647      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U,U,G */

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07648 , { INF, INF, INF, INF, INF} /* UA,NP,U,U,U */
07649 }
07650 }
07651 }
07652 ,{{{ 1350, 850, 720, 1350, 720} /* UA,CG,E,E,E */
07653 , { 1300, 650, 520, 1300, 520} /* UA,CG,E,E,A */
07654 , { 1350, 700, 570, 1350, 570} /* UA,CG,E,E,C */
07655 , { 1300, 850, 720, 1300, 720} /* UA,CG,E,E,G */
07656 , { 1250, 590, 460, 1250, 460} /* UA,CG,E,E,U */
07657 }
07658 , { 1160, 500, 400, 1160, 370} /* UA,CG,E,A,E */
07659 , { 1160, 500, 370, 1160, 370} /* UA,CG,E,A,A */
07660 , { 850, 190, 60, 850, 60} /* UA,CG,E,A,C */
07661 , { 400, 290, 400, 10, 160} /* UA,CG,E,A,G */
07662 , { 850, 190, 60, 850, 60} /* UA,CG,E,A,U */
07663 }
07664 , { 1300, 650, 520, 1300, 520} /* UA,CG,E,C,E */
07665 , { 1300, 650, 520, 1300, 520} /* UA,CG,E,C,A */
07666 , { 1290, 640, 510, 1290, 510} /* UA,CG,E,C,C */
07667 , { 1300, 650, 520, 1300, 520} /* UA,CG,E,C,G */
07668 , { 1250, 590, 460, 1250, 460} /* UA,CG,E,C,U */
07669 }
07670 ,{{{ 850, 850, 720, 850, 720} /* UA,CG,E,G,E */
07671 , { 120, 0, 120, -270, -120} /* UA,CG,E,G,A */
07672 , { 850, 190, 60, 850, 60} /* UA,CG,E,G,C */
07673 , { 850, 850, 720, 570, 720} /* UA,CG,E,G,G */
07674 , { 850, 190, 60, 850, 60} /* UA,CG,E,G,U */
07675 }
07676 ,{{{ 1350, 700, 570, 1350, 570} /* UA,CG,E,U,E */
07677 , { 1300, 650, 520, 1300, 520} /* UA,CG,E,U,A */
07678 , { 1350, 700, 570, 1350, 570} /* UA,CG,E,U,C */
07679 , { 1300, 650, 520, 1300, 520} /* UA,CG,E,U,G */
07680 , { 100, 100, -270, -420, -270} /* UA,CG,E,U,U */
07681 }
07682 }
07683 ,{{{ 850, 850, 720, -760, 720} /* UA,CG,A,E,E */
07684 , { 650, 650, 520, -1050, 520} /* UA,CG,A,E,A */
07685 , { 700, 700, 570, -760, 570} /* UA,CG,A,E,C */
07686 , { 850, 850, 720, -1050, 720} /* UA,CG,A,E,G */
07687 , { 590, 590, 460, -870, 460} /* UA,CG,A,E,U */
07688 }
07689 ,{{{ 500, 500, 370, -1200, 370} /* UA,CG,A,A,E */
07690 , { 500, 500, 370, -1200, 370} /* UA,CG,A,A,A */
07691 , { 190, 190, 60, -1510, 60} /* UA,CG,A,A,C */
07692 , { 290, 290, 160, -1410, 160} /* UA,CG,A,A,G */
07693 , { 190, 190, 60, -1510, 60} /* UA,CG,A,A,U */
07694 }
07695 ,{{{ 650, 650, 520, -820, 520} /* UA,CG,A,C,E */
07696 , { 650, 650, 520, -1050, 520} /* UA,CG,A,C,A */
07697 , { 640, 640, 510, -820, 510} /* UA,CG,A,C,C */
07698 , { 650, 650, 520, -1050, 520} /* UA,CG,A,C,G */
07699 , { 590, 590, 460, -870, 460} /* UA,CG,A,C,U */
07700 }
07701 ,{{{ 850, 850, 720, -1510, 720} /* UA,CG,A,G,E */
07702 , { 0, 0, -120, -1700, -120} /* UA,CG,A,G,A */
07703 , { 190, 190, 60, -1510, 60} /* UA,CG,A,G,C */
07704 , { 850, 850, 720, -2110, 720} /* UA,CG,A,G,G */
07705 , { 190, 190, 60, -1510, 60} /* UA,CG,A,G,U */
07706 }
07707 ,{{{ 700, 700, 570, -760, 570} /* UA,CG,A,U,E */
07708 , { 650, 650, 520, -1050, 520} /* UA,CG,A,U,A */
07709 , { 700, 700, 570, -760, 570} /* UA,CG,A,U,C */
07710 , { 650, 650, 520, -1050, 520} /* UA,CG,A,U,G */
07711 , { 100, 100, -270, -1840, -270} /* UA,CG,A,U,U */
07712 }
07713 }
07714 ,{{{ 720, 570, 720, 570, 280} /* UA,CG,C,E,E */
07715 , { 520, 370, 520, 370, 80} /* UA,CG,C,E,A */
07716 , { 570, 420, 570, 420, 130} /* UA,CG,C,E,C */
07717 , { 720, 570, 720, 570, 280} /* UA,CG,C,E,G */
07718 , { 460, 310, 460, 310, 20} /* UA,CG,C,E,U */
07719 }
07720 ,{{{ 400, 220, 400, 220, -40} /* UA,CG,C,A,E */
07721 , { 370, 220, 370, 220, -60} /* UA,CG,C,A,A */
07722 , { 60, -80, 60, -80, -370} /* UA,CG,C,A,C */
07723 , { 400, 10, 400, 10, -40} /* UA,CG,C,A,G */
07724 , { 60, -80, 60, -80, -370} /* UA,CG,C,A,U */
07725 }
07726 ,{{{ 520, 370, 520, 370, 80} /* UA,CG,C,C,E */
07727 , { 520, 370, 520, 370, 80} /* UA,CG,C,C,A */
07728 , { 510, 360, 510, 360, 70} /* UA,CG,C,C,C */
07729 , { 520, 370, 520, 370, 80} /* UA,CG,C,C,G */
07730 , { 460, 310, 460, 310, 20} /* UA,CG,C,C,U */
07731 }
07732 ,{{{ 720, 570, 720, 570, 280} /* UA,CG,C,G,E */
07733 , { 120, -270, 120, -270, -320} /* UA,CG,C,G,A */
07734 , { 60, -80, 60, -80, -370} /* UA,CG,C,G,C */
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07735 , { 720, 570, 720, 570, 280} /* UA,CG,C,G,G */
07736 , { 60, -80, 60, -80, -370} /* UA,CG,C,G,U */
07737 }
07738 , {{ 570, 420, 570, 420, 130} /* UA,CG,C,U,E */
07739 , { 520, 370, 520, 370, 80} /* UA,CG,C,U,A */
07740 , { 570, 420, 570, 420, 130} /* UA,CG,C,U,C */
07741 , { 520, 370, 520, 370, 80} /* UA,CG,C,U,G */
07742 , { -270, -420, -270, -420, -710} /* UA,CG,C,U,U */
07743 }
07744 }
07745 , {{{ 1350, -460, 720, 1350, 720} /* UA,CG,G,E,E */
07746 , { 1300, -750, 520, 1300, 520} /* UA,CG,G,E,A */
07747 , { 1350, -460, 570, 1350, 570} /* UA,CG,G,E,C */
07748 , { 1300, -750, 720, 1300, 720} /* UA,CG,G,E,G */
07749 , { 1250, -570, 460, 1250, 460} /* UA,CG,G,E,U */
07750 }
07751 , {{ 1160, -900, 370, 1160, 370} /* UA,CG,G,A,E */
07752 , { 1160, -900, 370, 1160, 370} /* UA,CG,G,A,A */
07753 , { 850, -1210, 60, 850, 60} /* UA,CG,G,A,C */
07754 , { 160, -1110, 160, -310, 160} /* UA,CG,G,A,G */
07755 , { 850, -1210, 60, 850, 60} /* UA,CG,G,A,U */
07756 }
07757 , {{ 1300, -520, 520, 1300, 520} /* UA,CG,G,C,E */
07758 , { 1300, -750, 520, 1300, 520} /* UA,CG,G,C,A */
07759 , { 1290, -520, 510, 1290, 510} /* UA,CG,G,C,C */
07760 , { 1300, -750, 520, 1300, 520} /* UA,CG,G,C,G */
07761 , { 1250, -570, 460, 1250, 460} /* UA,CG,G,C,U */
07762 }
07763 , {{ 850, -1210, 720, 850, 720} /* UA,CG,G,G,E */
07764 , { -120, -1400, -120, -590, -120} /* UA,CG,G,G,A */
07765 , { 850, -1210, 60, 850, 60} /* UA,CG,G,G,C */
07766 , { 720, -1810, 720, -1000, 720} /* UA,CG,G,G,G */
07767 , { 850, -1210, 60, 850, 60} /* UA,CG,G,G,U */
07768 }
07769 , {{ 1350, -460, 570, 1350, 570} /* UA,CG,G,U,E */
07770 , { 1300, -750, 520, 1300, 520} /* UA,CG,G,U,A */
07771 , { 1350, -460, 570, 1350, 570} /* UA,CG,G,U,C */
07772 , { 1300, -750, 520, 1300, 520} /* UA,CG,G,U,G */
07773 , { -270, -1540, -270, -740, -270} /* UA,CG,G,U,U */
07774 }
07775 }
07776 , {{{ 590, 570, 590, 570, -320} /* UA,CG,U,E,E */
07777 , { 390, 370, 390, 370, -320} /* UA,CG,U,E,A */
07778 , { 440, 420, 440, 420, -360} /* UA,CG,U,E,C */
07779 , { 590, 570, 590, 570, -420} /* UA,CG,U,E,G */
07780 , { 330, 310, 330, 310, -470} /* UA,CG,U,E,U */
07781 }
07782 , {{ 270, 220, 270, 220, -320} /* UA,CG,U,A,E */
07783 , { 240, 220, 240, 220, -320} /* UA,CG,U,A,A */
07784 , { -60, -80, -60, -80, -870} /* UA,CG,U,A,C */
07785 , { 270, 10, 270, 10, -780} /* UA,CG,U,A,G */
07786 , { -60, -80, -60, -80, -870} /* UA,CG,U,A,U */
07787 }
07788 , {{ 390, 370, 390, 370, -420} /* UA,CG,U,C,E */
07789 , { 390, 370, 390, 370, -420} /* UA,CG,U,C,A */
07790 , { 380, 360, 380, 360, -420} /* UA,CG,U,C,C */
07791 , { 390, 370, 390, 370, -420} /* UA,CG,U,C,G */
07792 , { 330, 310, 330, 310, -470} /* UA,CG,U,C,U */
07793 }
07794 , {{ 590, 570, 590, 570, -870} /* UA,CG,U,G,E */
07795 , { -10, -270, -10, -270, -1060} /* UA,CG,U,G,A */
07796 , { -60, -80, -60, -80, -870} /* UA,CG,U,G,C */
07797 , { 590, 570, 590, 570, -1470} /* UA,CG,U,G,G */
07798 , { -60, -80, -60, -80, -870} /* UA,CG,U,G,U */
07799 }
07800 , {{ 440, 420, 440, 420, -360} /* UA,CG,U,U,E */
07801 , { 390, 370, 390, 370, -420} /* UA,CG,U,U,A */
07802 , { 440, 420, 440, 420, -360} /* UA,CG,U,U,C */
07803 , { 390, 370, 390, 370, -420} /* UA,CG,U,U,G */
07804 , { -400, -420, -400, -420, -1210} /* UA,CG,U,U,U */
07805 }
07806 }
07807 }
07808 , {{{ 1320, 850, 720, 1320, 720} /* UA,GC,E,E,E */
07809 , { 1320, 670, 540, 1320, 540} /* UA,GC,E,E,A */
07810 , { 870, 220, 90, 870, 90} /* UA,GC,E,E,C */
07811 , { 960, 850, 720, 960, 720} /* UA,GC,E,E,G */
07812 , { 870, 250, 90, 870, 90} /* UA,GC,E,E,U */
07813 }
07814 , {{ 1320, 670, 540, 1320, 540} /* UA,GC,E,A,E */
07815 , { 1320, 670, 540, 1320, 540} /* UA,GC,E,A,A */
07816 , { 870, 220, 90, 870, 90} /* UA,GC,E,A,C */
07817 , { -410, -520, -410, -800, -650} /* UA,GC,E,A,G */
07818 , { 870, 220, 90, 870, 90} /* UA,GC,E,A,U */
07819 }
07820 , {{ 960, 300, 170, 960, 170} /* UA,GC,E,C,E */
07821 , { 960, 300, 170, 960, 170} /* UA,GC,E,C,A */

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07822 , { 650, 0, -130, 650, -130} /* UA,GC,E,C,C */
07823 , { 960, 300, 170, 960, 170} /* UA,GC,E,C,G */
07824 , { 650, 0, -130, 650, -130} /* UA,GC,E,C,U */
07825 }
07826 , { { 870, 850, 720, 870, 720} /* UA,GC,E,G,E */
07827 , { 70, -40, 70, -320, -170} /* UA,GC,E,G,A */
07828 , { 870, 220, 90, 870, 90} /* UA,GC,E,G,C */
07829 , { 850, 850, 720, 570, 720} /* UA,GC,E,G,G */
07830 , { 870, 220, 90, 870, 90} /* UA,GC,E,G,U */
07831 }
07832 , { { 960, 300, 170, 960, 170} /* UA,GC,E,U,E */
07833 , { 960, 300, 170, 960, 170} /* UA,GC,E,U,A */
07834 , { 340, -310, -440, 340, -440} /* UA,GC,E,U,C */
07835 , { 960, 300, 170, 960, 170} /* UA,GC,E,U,G */
07836 , { 250, 250, -110, -260, -110} /* UA,GC,E,U,U */
07837 }
07838 }
07839 , { { { 850, 850, 720, -1030, 720} /* UA,GC,A,E,E */
07840 , { 670, 670, 540, -1030, 540} /* UA,GC,A,E,A */
07841 , { 220, 220, 90, -1460, 90} /* UA,GC,A,E,C */
07842 , { 850, 850, 720, -1400, 720} /* UA,GC,A,E,G */
07843 , { 250, 250, 90, -1460, 90} /* UA,GC,A,E,U */
07844 }
07845 , { { 670, 670, 540, -1030, 540} /* UA,GC,A,A,E */
07846 , { 670, 670, 540, -1030, 540} /* UA,GC,A,A,A */
07847 , { 220, 220, 90, -1480, 90} /* UA,GC,A,A,C */
07848 , { -520, -520, -650, -2220, -650} /* UA,GC,A,A,G */
07849 , { 220, 220, 90, -1480, 90} /* UA,GC,A,A,U */
07850 }
07851 , { { 300, 300, 170, -1400, 170} /* UA,GC,A,C,E */
07852 , { 300, 300, 170, -1400, 170} /* UA,GC,A,C,A */
07853 , { 0, 0, -130, -1460, -130} /* UA,GC,A,C,C */
07854 , { 300, 300, 170, -1400, 170} /* UA,GC,A,C,G */
07855 , { 0, 0, -130, -1460, -130} /* UA,GC,A,C,U */
07856 }
07857 , { { 850, 850, 720, -1480, 720} /* UA,GC,A,G,E */
07858 , { -40, -40, -170, -1750, -170} /* UA,GC,A,G,A */
07859 , { 220, 220, 90, -1480, 90} /* UA,GC,A,G,C */
07860 , { 850, 850, 720, -2110, 720} /* UA,GC,A,G,G */
07861 , { 220, 220, 90, -1480, 90} /* UA,GC,A,G,U */
07862 }
07863 , { { 300, 300, 170, -1400, 170} /* UA,GC,A,U,E */
07864 , { 300, 300, 170, -1400, 170} /* UA,GC,A,U,A */
07865 , { -310, -310, -440, -1770, -440} /* UA,GC,A,U,C */
07866 , { 300, 300, 170, -1400, 170} /* UA,GC,A,U,G */
07867 , { 250, 250, -110, -1690, -110} /* UA,GC,A,U,U */
07868 }
07869 }
07870 , { { { 720, 570, 720, 570, 280} /* UA,GC,C,E,E */
07871 , { 540, 390, 540, 390, 100} /* UA,GC,C,E,A */
07872 , { 90, -60, 90, -350, -350} /* UA,GC,C,E,C */
07873 , { 720, 570, 720, 570, 280} /* UA,GC,C,E,G */
07874 , { 90, -60, 90, -60, -350} /* UA,GC,C,E,U */
07875 }
07876 , { { 540, 390, 540, 390, 100} /* UA,GC,C,A,E */
07877 , { 540, 390, 540, 390, 100} /* UA,GC,C,A,A */
07878 , { 90, -60, 90, -350, -350} /* UA,GC,C,A,C */
07879 , { -410, -800, -410, -800, -850} /* UA,GC,C,A,G */
07880 , { 90, -60, 90, -60, -350} /* UA,GC,C,A,U */
07881 }
07882 , { { 170, 20, 170, 20, -260} /* UA,GC,C,C,E */
07883 , { 170, 20, 170, 20, -260} /* UA,GC,C,C,A */
07884 , { -130, -280, -130, -280, -570} /* UA,GC,C,C,C */
07885 , { 170, 20, 170, 20, -260} /* UA,GC,C,C,G */
07886 , { -130, -280, -130, -280, -570} /* UA,GC,C,C,U */
07887 }
07888 , { { 720, 570, 720, 570, 280} /* UA,GC,C,G,E */
07889 , { 70, -320, 70, -320, -370} /* UA,GC,C,G,A */
07890 , { 90, -60, 90, -350, -350} /* UA,GC,C,G,C */
07891 , { 720, 570, 720, 570, 280} /* UA,GC,C,G,G */
07892 , { 90, -60, 90, -60, -350} /* UA,GC,C,G,U */
07893 }
07894 , { { 170, 20, 170, 20, -260} /* UA,GC,C,U,E */
07895 , { 170, 20, 170, 20, -260} /* UA,GC,C,U,A */
07896 , { -440, -590, -440, -590, -880} /* UA,GC,C,U,C */
07897 , { 170, 20, 170, 20, -260} /* UA,GC,C,U,G */
07898 , { -110, -260, -110, -260, -550} /* UA,GC,C,U,U */
07899 }
07900 }
07901 , { { { 1320, -730, 720, 1320, 720} /* UA,GC,G,E,E */
07902 , { 1320, -730, 540, 1320, 540} /* UA,GC,G,E,A */
07903 , { 870, -1160, 90, 870, 90} /* UA,GC,G,E,C */
07904 , { 960, -1100, 720, 960, 720} /* UA,GC,G,E,G */
07905 , { 870, -1160, 90, 870, 90} /* UA,GC,G,E,U */
07906 }
07907 , { { 1320, -730, 540, 1320, 540} /* UA,GC,G,A,E */
07908 , { 1320, -730, 540, 1320, 540} /* UA,GC,G,A,A */
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07909 , { 870, -1180, 90, 870, 90} /* UA,GC,G,A,C */
07910 , { -650, -1920, -650, -1120, -650} /* UA,GC,G,A,G */
07911 , { 870, -1180, 90, 870, 90} /* UA,GC,G,A,U */
07912 }
07913 , {{ 960, -1100, 170, 960, 170} /* UA,GC,G,C,E */
07914 , { 960, -1100, 170, 960, 170} /* UA,GC,G,C,A */
07915 , { 650, -1160, -130, 650, -130} /* UA,GC,G,C,C */
07916 , { 960, -1100, 170, 960, 170} /* UA,GC,G,C,G */
07917 , { 650, -1160, -130, 650, -130} /* UA,GC,G,C,U */
07918 }
07919 , {{ 870, -1180, 720, 870, 720} /* UA,GC,G,G,E */
07920 , { -170, -1450, -170, -640, -170} /* UA,GC,G,G,A */
07921 , { 870, -1180, 90, 870, 90} /* UA,GC,G,G,C */
07922 , { 720, -1810, 720, -1000, 720} /* UA,GC,G,G,G */
07923 , { 870, -1180, 90, 870, 90} /* UA,GC,G,G,U */
07924 }
07925 , {{ 960, -1100, 170, 960, 170} /* UA,GC,G,U,E */
07926 , { 960, -1100, 170, 960, 170} /* UA,GC,G,U,A */
07927 , { 340, -1470, -440, 340, -440} /* UA,GC,G,U,C */
07928 , { 960, -1100, 170, 960, 170} /* UA,GC,G,U,G */
07929 , { -110, -1390, -110, -580, -110} /* UA,GC,G,U,U */
07930 }
07931 }
07932 , {{{ 590, 570, 590, 570, -160} /* UA,GC,U,E,E */
07933 , { 410, 390, 410, 390, -160} /* UA,GC,U,E,A */
07934 , { -40, -60, -40, -60, -850} /* UA,GC,U,E,C */
07935 , { 590, 570, 590, 570, -760} /* UA,GC,U,E,G */
07936 , { -40, -60, -40, -60, -850} /* UA,GC,U,E,U */
07937 }
07938 , {{{ 410, 390, 410, 390, -160} /* UA,GC,U,A,E */
07939 , { 410, 390, 410, 390, -160} /* UA,GC,U,A,A */
07940 , { -40, -60, -40, -60, -850} /* UA,GC,U,A,C */
07941 , { -540, -800, -540, -800, -1590} /* UA,GC,U,A,G */
07942 , { -40, -60, -40, -60, -850} /* UA,GC,U,A,U */
07943 }
07944 , {{{ 40, 20, 40, 20, -760} /* UA,GC,U,C,E */
07945 , { 40, 20, 40, 20, -760} /* UA,GC,U,C,A */
07946 , { -260, -280, -260, -280, -1070} /* UA,GC,U,C,C */
07947 , { 40, 20, 40, 20, -760} /* UA,GC,U,C,G */
07948 , { -260, -280, -260, -280, -1070} /* UA,GC,U,C,U */
07949 }
07950 , {{{ 590, 570, 590, 570, -850} /* UA,GC,U,G,E */
07951 , { -60, -320, -60, -320, -1110} /* UA,GC,U,G,A */
07952 , { -40, -60, -40, -60, -850} /* UA,GC,U,G,C */
07953 , { 590, 570, 590, 570, -1470} /* UA,GC,U,G,G */
07954 , { -40, -60, -40, -60, -850} /* UA,GC,U,G,U */
07955 }
07956 , {{{ 40, 20, 40, 20, -760} /* UA,GC,U,U,E */
07957 , { 40, 20, 40, 20, -760} /* UA,GC,U,U,A */
07958 , { -570, -590, -570, -590, -1380} /* UA,GC,U,U,C */
07959 , { 40, 20, 40, 20, -760} /* UA,GC,U,U,G */
07960 , { -240, -260, -240, -260, -1050} /* UA,GC,U,U,U */
07961 }
07962 }
07963 }
07964 , {{{ 1010, 1010, 880, 730, 880} /* UA,GU,E,E,E */
07965 , { 410, -70, 40, 410, -200} /* UA,GU,E,E,A */
07966 , { 410, -240, -370, 410, -370} /* UA,GU,E,E,C */
07967 , { 1010, 1010, 880, 730, 880} /* UA,GU,E,E,G */
07968 , { 410, 0, -370, 410, -370} /* UA,GU,E,E,U */
07969 }
07970 , {{{ 410, -240, -150, 410, -370} /* UA,GU,E,A,E */
07971 , { 230, -420, -550, 230, -550} /* UA,GU,E,A,A */
07972 , { 410, -240, -370, 410, -370} /* UA,GU,E,A,C */
07973 , { -150, -260, -150, -540, -390} /* UA,GU,E,A,G */
07974 , { 410, -240, -370, 410, -370} /* UA,GU,E,A,U */
07975 }
07976 , {{{ 410, -240, -370, 410, -370} /* UA,GU,E,C,E */
07977 , { 410, -240, -370, 410, -370} /* UA,GU,E,C,A */
07978 , { 410, -240, -370, 410, -370} /* UA,GU,E,C,C */
07979 , { 410, -240, -370, 410, -370} /* UA,GU,E,C,G */
07980 , { 410, -240, -370, 410, -370} /* UA,GU,E,C,U */
07981 }
07982 , {{{ 1010, 1010, 880, 730, 880} /* UA,GU,E,G,E */
07983 , { 40, -70, 40, -350, -200} /* UA,GU,E,G,A */
07984 , { 410, -240, -370, 410, -370} /* UA,GU,E,G,C */
07985 , { 1010, 1010, 880, 730, 880} /* UA,GU,E,G,G */
07986 , { 410, -240, -370, 410, -370} /* UA,GU,E,G,U */
07987 }
07988 , {{{ 410, 0, -370, 410, -370} /* UA,GU,E,U,E */
07989 , { 410, -240, -370, 410, -370} /* UA,GU,E,U,A */
07990 , { 410, -240, -370, 410, -370} /* UA,GU,E,U,C */
07991 , { 410, -240, -370, 410, -370} /* UA,GU,E,U,G */
07992 , { 0, 0, -370, -520, -370} /* UA,GU,E,U,U */
07993 }
07994 }
07995 , {{{ 1010, 1010, 880, -1710, 880} /* UA,GU,A,E,E */

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07996 , { -70, -70, -200, -1770, -200} /* UA, GU, A, E, A */
07997 , { -240, -240, -370, -1710, -370} /* UA, GU, A, E, C */
07998 , { 1010, 1010, 880, -1950, 880} /* UA, GU, A, E, G */
07999 , { 0, 0, -370, -1710, -370} /* UA, GU, A, E, U */
08000 }
08001 , { { -240, -240, -370, -1950, -370} /* UA, GU, A, A, E */
08002 , { -420, -420, -550, -2130, -550} /* UA, GU, A, A, A */
08003 , { -240, -240, -370, -1950, -370} /* UA, GU, A, A, C */
08004 , { -260, -260, -390, -1960, -390} /* UA, GU, A, A, G */
08005 , { -240, -240, -370, -1950, -370} /* UA, GU, A, A, U */
08006 }
08007 , { { -240, -240, -370, -1710, -370} /* UA, GU, A, C, E */
08008 , { -240, -240, -370, -1950, -370} /* UA, GU, A, C, A */
08009 , { -240, -240, -370, -1710, -370} /* UA, GU, A, C, C */
08010 , { -240, -240, -370, -1950, -370} /* UA, GU, A, C, G */
08011 , { -240, -240, -370, -1710, -370} /* UA, GU, A, C, U */
08012 }
08013 , { { 1010, 1010, 880, -1770, 880} /* UA, GU, A, G, E */
08014 , { -70, -70, -200, -1770, -200} /* UA, GU, A, G, A */
08015 , { -240, -240, -370, -1950, -370} /* UA, GU, A, G, C */
08016 , { 1010, 1010, 880, -1950, 880} /* UA, GU, A, G, G */
08017 , { -240, -240, -370, -1950, -370} /* UA, GU, A, G, U */
08018 }
08019 , { { 0, 0, -370, -1710, -370} /* UA, GU, A, U, E */
08020 , { -240, -240, -370, -1950, -370} /* UA, GU, A, U, A */
08021 , { -240, -240, -370, -1710, -370} /* UA, GU, A, U, C */
08022 , { -240, -240, -370, -1950, -370} /* UA, GU, A, U, G */
08023 , { 0, 0, -370, -1950, -370} /* UA, GU, A, U, U */
08024 }
08025 }
08026 , { { { 880, 730, 880, 730, 440} /* UA, GU, C, E, E */
08027 , { 40, -350, 40, -350, -400} /* UA, GU, C, E, A */
08028 , { -370, -520, -370, -520, -810} /* UA, GU, C, E, C */
08029 , { 880, 730, 880, 730, 440} /* UA, GU, C, E, G */
08030 , { -370, -520, -370, -520, -810} /* UA, GU, C, E, U */
08031 }
08032 , { { -150, -520, -150, -520, -590} /* UA, GU, C, A, E */
08033 , { -550, -700, -550, -700, -990} /* UA, GU, C, A, A */
08034 , { -370, -520, -370, -520, -810} /* UA, GU, C, A, C */
08035 , { -150, -540, -150, -540, -590} /* UA, GU, C, A, G */
08036 , { -370, -520, -370, -520, -810} /* UA, GU, C, A, U */
08037 }
08038 , { { -370, -520, -370, -520, -810} /* UA, GU, C, C, E */
08039 , { -370, -520, -370, -520, -810} /* UA, GU, C, C, A */
08040 , { -370, -520, -370, -520, -810} /* UA, GU, C, C, C */
08041 , { -370, -520, -370, -520, -810} /* UA, GU, C, C, G */
08042 , { -370, -520, -370, -520, -810} /* UA, GU, C, C, U */
08043 }
08044 , { { 880, 730, 880, 730, 440} /* UA, GU, C, G, E */
08045 , { 40, -350, 40, -350, -400} /* UA, GU, C, G, A */
08046 , { -370, -520, -370, -520, -810} /* UA, GU, C, G, C */
08047 , { 880, 730, 880, 730, 440} /* UA, GU, C, G, G */
08048 , { -370, -520, -370, -520, -810} /* UA, GU, C, G, U */
08049 }
08050 , { { -370, -520, -370, -520, -810} /* UA, GU, C, U, E */
08051 , { -370, -520, -370, -520, -810} /* UA, GU, C, U, A */
08052 , { -370, -520, -370, -520, -810} /* UA, GU, C, U, C */
08053 , { -370, -520, -370, -520, -810} /* UA, GU, C, U, G */
08054 , { -370, -520, -370, -520, -810} /* UA, GU, C, U, U */
08055 }
08056 }
08057 , { { { 880, -1410, 880, 410, 880} /* UA, GU, G, E, E */
08058 , { 410, -1470, -200, 410, -200} /* UA, GU, G, E, A */
08059 , { 410, -1410, -370, 410, -370} /* UA, GU, G, E, C */
08060 , { 880, -1650, 880, 410, 880} /* UA, GU, G, E, G */
08061 , { 410, -1410, -370, 410, -370} /* UA, GU, G, E, U */
08062 }
08063 , { { 410, -1650, -370, 410, -370} /* UA, GU, G, A, E */
08064 , { 230, -1830, -550, 230, -550} /* UA, GU, G, A, A */
08065 , { 410, -1650, -370, 410, -370} /* UA, GU, G, A, C */
08066 , { -390, -1660, -390, -860, -390} /* UA, GU, G, A, G */
08067 , { 410, -1650, -370, 410, -370} /* UA, GU, G, A, U */
08068 }
08069 , { { 410, -1410, -370, 410, -370} /* UA, GU, G, C, E */
08070 , { 410, -1650, -370, 410, -370} /* UA, GU, G, C, A */
08071 , { 410, -1410, -370, 410, -370} /* UA, GU, G, C, C */
08072 , { 410, -1650, -370, 410, -370} /* UA, GU, G, C, G */
08073 , { 410, -1410, -370, 410, -370} /* UA, GU, G, C, U */
08074 }
08075 , { { 880, -1470, 880, 410, 880} /* UA, GU, G, G, E */
08076 , { -200, -1470, -200, -670, -200} /* UA, GU, G, G, A */
08077 , { 410, -1650, -370, 410, -370} /* UA, GU, G, G, C */
08078 , { 880, -1650, 880, -840, 880} /* UA, GU, G, G, G */
08079 , { 410, -1650, -370, 410, -370} /* UA, GU, G, G, U */
08080 }
08081 , { { 410, -1410, -370, 410, -370} /* UA, GU, G, U, E */
08082 , { 410, -1650, -370, 410, -370} /* UA, GU, G, U, A */
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08083      , {      410,   -1410,   -370,    410,   -370} /* UA, GU, G, U, C */
08084      , {      410,   -1650,   -370,    410,   -370} /* UA, GU, G, U, G */
08085      , {     -370,   -1650,   -370,   -840,   -370} /* UA, GU, G, U, U */
08086      }
08087      }
08088      , { { {      750,    730,    750,    730,   -1140} /* UA, GU, U, E, E */
08089      , {      -90,   -350,    -90,   -350,   -1140} /* UA, GU, U, E, A */
08090      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, E, C */
08091      , {      750,    730,    750,    730,   -1310} /* UA, GU, U, E, G */
08092      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, E, U */
08093      }
08094      , { { {     -280,   -520,   -280,   -520,   -1250} /* UA, GU, U, A, E */
08095      , {     -680,   -700,   -680,   -700,   -1250} /* UA, GU, U, A, A */
08096      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, A, C */
08097      , {     -280,   -540,   -280,   -540,   -1330} /* UA, GU, U, A, G */
08098      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, A, U */
08099      }
08100      , { { {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, C, E */
08101      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, C, A */
08102      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, C, C */
08103      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, C, G */
08104      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, C, U */
08105      }
08106      , { { {      750,    730,    750,    730,   -1140} /* UA, GU, U, G, E */
08107      , {      -90,   -350,    -90,   -350,   -1140} /* UA, GU, U, G, A */
08108      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, G, C */
08109      , {      750,    730,    750,    730,   -1310} /* UA, GU, U, G, G */
08110      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, G, U */
08111      }
08112      , { { {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, U, E */
08113      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, U, A */
08114      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, U, C */
08115      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, U, G */
08116      , {     -500,   -520,   -500,   -520,   -1310} /* UA, GU, U, U, U */
08117      }
08118      }
08119      }
08120      , { { { { 1560, 1560, 1430, 1470, 1430} /* UA, UG, E, E, E */
08121      , { 1470, 820, 690, 1470, 690} /* UA, UG, E, E, A */
08122      , { 960, 310, 180, 960, 180} /* UA, UG, E, E, C */
08123      , { 1560, 1560, 1430, 1280, 1430} /* UA, UG, E, E, G */
08124      , { 960, 550, 180, 960, 180} /* UA, UG, E, E, U */
08125      }
08126      , { { { 1470, 820, 690, 1470, 690} /* UA, UG, E, A, E */
08127      , { 1470, 820, 690, 1470, 690} /* UA, UG, E, A, A */
08128      , { 960, 310, 180, 960, 180} /* UA, UG, E, A, C */
08129      , { 80, -30, 80, -310, -160} /* UA, UG, E, A, G */
08130      , { 960, 310, 180, 960, 180} /* UA, UG, E, A, U */
08131      }
08132      , { { { 960, 310, 180, 960, 180} /* UA, UG, E, C, E */
08133      , { 960, 310, 180, 960, 180} /* UA, UG, E, C, A */
08134      , { 960, 310, 180, 960, 180} /* UA, UG, E, C, C */
08135      , { 960, 310, 180, 960, 180} /* UA, UG, E, C, G */
08136      , { 960, 310, 180, 960, 180} /* UA, UG, E, C, U */
08137      }
08138      , { { { 1560, 1560, 1430, 1280, 1430} /* UA, UG, E, G, E */
08139      , { -90, -200, -90, -480, -330} /* UA, UG, E, G, A */
08140      , { 960, 310, 180, 960, 180} /* UA, UG, E, G, C */
08141      , { 1560, 1560, 1430, 1280, 1430} /* UA, UG, E, G, G */
08142      , { 960, 310, 180, 960, 180} /* UA, UG, E, G, U */
08143      }
08144      , { { { 960, 550, 180, 960, 180} /* UA, UG, E, U, E */
08145      , { 960, 310, 180, 960, 180} /* UA, UG, E, U, A */
08146      , { 960, 310, 180, 960, 180} /* UA, UG, E, U, C */
08147      , { 960, 310, 180, 960, 180} /* UA, UG, E, U, G */
08148      , { 550, 550, 180, 30, 180} /* UA, UG, E, U, U */
08149      }
08150      }
08151      , { { { { 1560, 1560, 1430, -880, 1430} /* UA, UG, A, E, E */
08152      , { 820, 820, 690, -880, 690} /* UA, UG, A, E, A */
08153      , { 310, 310, 180, -1150, 180} /* UA, UG, A, E, C */
08154      , { 1560, 1560, 1430, -1390, 1430} /* UA, UG, A, E, G */
08155      , { 550, 550, 180, -1150, 180} /* UA, UG, A, E, U */
08156      }
08157      , { { { 820, 820, 690, -880, 690} /* UA, UG, A, A, E */
08158      , { 820, 820, 690, -880, 690} /* UA, UG, A, A, A */
08159      , { 310, 310, 180, -1390, 180} /* UA, UG, A, A, C */
08160      , { -30, -30, -160, -1730, -160} /* UA, UG, A, A, G */
08161      , { 310, 310, 180, -1390, 180} /* UA, UG, A, A, U */
08162      }
08163      , { { { 310, 310, 180, -1150, 180} /* UA, UG, A, C, E */
08164      , { 310, 310, 180, -1390, 180} /* UA, UG, A, C, A */
08165      , { 310, 310, 180, -1150, 180} /* UA, UG, A, C, C */
08166      , { 310, 310, 180, -1390, 180} /* UA, UG, A, C, G */
08167      , { 310, 310, 180, -1150, 180} /* UA, UG, A, C, U */
08168      }
08169      , { { { 1560, 1560, 1430, -1390, 1430} /* UA, UG, A, G, E */

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08170 , { -200, -200, -330, -1900, -330} /* UA,UG,A,G,A */
08171 , { 310, 310, 180, -1390, 180} /* UA,UG,A,G,C */
08172 , { 1560, 1560, 1430, -1390, 1430} /* UA,UG,A,G,G */
08173 , { 310, 310, 180, -1390, 180} /* UA,UG,A,G,U */
08174 }
08175 , { { 550, 550, 180, -1150, 180} /* UA,UG,A,U,E */
08176 , { 310, 310, 180, -1390, 180} /* UA,UG,A,U,A */
08177 , { 310, 310, 180, -1150, 180} /* UA,UG,A,U,C */
08178 , { 310, 310, 180, -1390, 180} /* UA,UG,A,U,G */
08179 , { 550, 550, 180, -1390, 180} /* UA,UG,A,U,U */
08180 }
08181 }
08182 , { { { 1430, 1280, 1430, 1280, 990} /* UA,UG,C,E,E */
08183 , { 690, 540, 690, 540, 250} /* UA,UG,C,E,A */
08184 , { 180, 30, 180, 30, -260} /* UA,UG,C,E,C */
08185 , { 1430, 1280, 1430, 1280, 990} /* UA,UG,C,E,G */
08186 , { 180, 30, 180, 30, -260} /* UA,UG,C,E,U */
08187 }
08188 , { { 690, 540, 690, 540, 250} /* UA,UG,C,A,E */
08189 , { 690, 540, 690, 540, 250} /* UA,UG,C,A,A */
08190 , { 180, 30, 180, 30, -260} /* UA,UG,C,A,C */
08191 , { 80, -310, 80, -310, -360} /* UA,UG,C,A,G */
08192 , { 180, 30, 180, 30, -260} /* UA,UG,C,A,U */
08193 }
08194 , { { 180, 30, 180, 30, -260} /* UA,UG,C,C,E */
08195 , { 180, 30, 180, 30, -260} /* UA,UG,C,C,A */
08196 , { 180, 30, 180, 30, -260} /* UA,UG,C,C,C */
08197 , { 180, 30, 180, 30, -260} /* UA,UG,C,C,G */
08198 , { 180, 30, 180, 30, -260} /* UA,UG,C,C,U */
08199 }
08200 , { { 1430, 1280, 1430, 1280, 990} /* UA,UG,C,G,E */
08201 , { -90, -480, -90, -480, -530} /* UA,UG,C,G,A */
08202 , { 180, 30, 180, 30, -260} /* UA,UG,C,G,C */
08203 , { 1430, 1280, 1430, 1280, 990} /* UA,UG,C,G,G */
08204 , { 180, 30, 180, 30, -260} /* UA,UG,C,G,U */
08205 }
08206 , { { 180, 30, 180, 30, -260} /* UA,UG,C,U,E */
08207 , { 180, 30, 180, 30, -260} /* UA,UG,C,U,A */
08208 , { 180, 30, 180, 30, -260} /* UA,UG,C,U,C */
08209 , { 180, 30, 180, 30, -260} /* UA,UG,C,U,G */
08210 , { 180, 30, 180, 30, -260} /* UA,UG,C,U,U */
08211 }
08212 }
08213 , { { { 1470, -580, 1430, 1470, 1430} /* UA,UG,G,E,E */
08214 , { 1470, -580, 690, 1470, 690} /* UA,UG,G,E,A */
08215 , { 960, -850, 180, 960, 180} /* UA,UG,G,E,C */
08216 , { 1430, -1090, 1430, 960, 1430} /* UA,UG,G,E,G */
08217 , { 960, -850, 180, 960, 180} /* UA,UG,G,E,U */
08218 }
08219 , { { 1470, -580, 690, 1470, 690} /* UA,UG,G,A,E */
08220 , { 1470, -580, 690, 1470, 690} /* UA,UG,G,A,A */
08221 , { 960, -1090, 180, 960, 180} /* UA,UG,G,A,C */
08222 , { -160, -1430, -160, -630, -160} /* UA,UG,G,A,G */
08223 , { 960, -1090, 180, 960, 180} /* UA,UG,G,A,U */
08224 }
08225 , { { 960, -850, 180, 960, 180} /* UA,UG,G,C,E */
08226 , { 960, -1090, 180, 960, 180} /* UA,UG,G,C,A */
08227 , { 960, -850, 180, 960, 180} /* UA,UG,G,C,C */
08228 , { 960, -1090, 180, 960, 180} /* UA,UG,G,C,G */
08229 , { 960, -850, 180, 960, 180} /* UA,UG,G,C,U */
08230 }
08231 , { { 1430, -1090, 1430, 960, 1430} /* UA,UG,G,G,E */
08232 , { -330, -1600, -330, -800, -330} /* UA,UG,G,G,A */
08233 , { 960, -1090, 180, 960, 180} /* UA,UG,G,G,C */
08234 , { 1430, -1090, 1430, -290, 1430} /* UA,UG,G,G,G */
08235 , { 960, -1090, 180, 960, 180} /* UA,UG,G,G,U */
08236 }
08237 , { { 960, -850, 180, 960, 180} /* UA,UG,G,U,E */
08238 , { 960, -1090, 180, 960, 180} /* UA,UG,G,U,A */
08239 , { 960, -850, 180, 960, 180} /* UA,UG,G,U,C */
08240 , { 960, -1090, 180, 960, 180} /* UA,UG,G,U,G */
08241 , { 180, -1090, 180, -290, 180} /* UA,UG,G,U,U */
08242 }
08243 }
08244 , { { { 1300, 1280, 1300, 1280, -10} /* UA,UG,U,E,E */
08245 , { 560, 540, 560, 540, -10} /* UA,UG,U,E,A */
08246 , { 50, 30, 50, 30, -760} /* UA,UG,U,E,C */
08247 , { 1300, 1280, 1300, 1280, -760} /* UA,UG,U,E,G */
08248 , { 50, 30, 50, 30, -760} /* UA,UG,U,E,U */
08249 }
08250 , { { 560, 540, 560, 540, -10} /* UA,UG,U,A,E */
08251 , { 560, 540, 560, 540, -10} /* UA,UG,U,A,A */
08252 , { 50, 30, 50, 30, -760} /* UA,UG,U,A,C */
08253 , { -50, -310, -50, -310, -1100} /* UA,UG,U,A,G */
08254 , { 50, 30, 50, 30, -760} /* UA,UG,U,A,U */
08255 }
08256 , { { 50, 30, 50, 30, -760} /* UA,UG,U,C,E */
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08257 , { 50, 30, 50, 30, -760} /* UA,UG,U,C,A */
08258 , { 50, 30, 50, 30, -760} /* UA,UG,U,C,C */
08259 , { 50, 30, 50, 30, -760} /* UA,UG,U,C,G */
08260 , { 50, 30, 50, 30, -760} /* UA,UG,U,C,U */
08261 }
08262 , {{ 1300, 1280, 1300, 1280, -760} /* UA,UG,U,G,E */
08263 , { -220, -480, -220, -480, -1270} /* UA,UG,U,G,A */
08264 , { 50, 30, 50, 30, -760} /* UA,UG,U,G,C */
08265 , { 1300, 1280, 1300, 1280, -760} /* UA,UG,U,G,G */
08266 , { 50, 30, 50, 30, -760} /* UA,UG,U,G,U */
08267 }
08268 , {{ 50, 30, 50, 30, -760} /* UA,UG,U,U,E */
08269 , { 50, 30, 50, 30, -760} /* UA,UG,U,U,A */
08270 , { 50, 30, 50, 30, -760} /* UA,UG,U,U,C */
08271 , { 50, 30, 50, 30, -760} /* UA,UG,U,U,G */
08272 , { 50, 30, 50, 30, -760} /* UA,UG,U,U,U */
08273 }
08274 }
08275 }
08276 , {{{ 2050, 1930, 1800, 2050, 1800} /* UA,AU,E,E,E */
08277 , { 2050, 1400, 1270, 2050, 1270} /* UA,AU,E,E,A */
08278 , { 1750, 1100, 970, 1750, 970} /* UA,AU,E,E,C */
08279 , { 1930, 1930, 1800, 1760, 1800} /* UA,AU,E,E,G */
08280 , { 1750, 1100, 970, 1750, 970} /* UA,AU,E,E,U */
08281 }
08282 , {{ 2050, 1400, 1270, 2050, 1270} /* UA,AU,E,A,E */
08283 , { 2050, 1400, 1270, 2050, 1270} /* UA,AU,E,A,A */
08284 , { 1740, 1090, 960, 1740, 960} /* UA,AU,E,A,C */
08285 , { 130, 10, 130, -260, -110} /* UA,AU,E,A,G */
08286 , { 1740, 1090, 960, 1740, 960} /* UA,AU,E,A,U */
08287 }
08288 , {{ 1760, 1110, 980, 1760, 980} /* UA,AU,E,C,E */
08289 , { 1760, 1110, 980, 1760, 980} /* UA,AU,E,C,A */
08290 , { 1750, 1100, 970, 1750, 970} /* UA,AU,E,C,C */
08291 , { 1760, 1110, 980, 1760, 980} /* UA,AU,E,C,G */
08292 , { 1750, 1100, 970, 1750, 970} /* UA,AU,E,C,U */
08293 }
08294 , {{{ 1930, 1930, 1800, 1740, 1800} /* UA,AU,E,G,E */
08295 , { 300, 190, 300, -80, 60} /* UA,AU,E,G,A */
08296 , { 1740, 1090, 960, 1740, 960} /* UA,AU,E,G,C */
08297 , { 1930, 1930, 1800, 1650, 1800} /* UA,AU,E,G,G */
08298 , { 1740, 1090, 960, 1740, 960} /* UA,AU,E,G,U */
08299 }
08300 , {{{ 1760, 1110, 980, 1760, 980} /* UA,AU,E,U,E */
08301 , { 1760, 1110, 980, 1760, 980} /* UA,AU,E,U,A */
08302 , { 1750, 1100, 970, 1750, 970} /* UA,AU,E,U,C */
08303 , { 1760, 1110, 980, 1760, 980} /* UA,AU,E,U,G */
08304 , { 360, 360, 0, -150, 0} /* UA,AU,E,U,U */
08305 }
08306 }
08307 , {{{ 1930, 1930, 1800, -300, 1800} /* UA,AU,A,E,E */
08308 , { 1400, 1400, 1270, -300, 1270} /* UA,AU,A,E,A */
08309 , { 1100, 1100, 970, -360, 970} /* UA,AU,A,E,C */
08310 , { 1930, 1930, 1800, -590, 1800} /* UA,AU,A,E,G */
08311 , { 1100, 1100, 970, -360, 970} /* UA,AU,A,E,U */
08312 }
08313 , {{ 1400, 1400, 1270, -300, 1270} /* UA,AU,A,A,E */
08314 , { 1400, 1400, 1270, -300, 1270} /* UA,AU,A,A,A */
08315 , { 1090, 1090, 960, -610, 960} /* UA,AU,A,A,C */
08316 , { 10, 10, -110, -1690, -110} /* UA,AU,A,A,G */
08317 , { 1090, 1090, 960, -610, 960} /* UA,AU,A,A,U */
08318 }
08319 , {{{ 1110, 1110, 980, -360, 980} /* UA,AU,A,C,E */
08320 , { 1110, 1110, 980, -590, 980} /* UA,AU,A,C,A */
08321 , { 1100, 1100, 970, -360, 970} /* UA,AU,A,C,C */
08322 , { 1110, 1110, 980, -590, 980} /* UA,AU,A,C,G */
08323 , { 1100, 1100, 970, -360, 970} /* UA,AU,A,C,U */
08324 }
08325 , {{{ 1930, 1930, 1800, -610, 1800} /* UA,AU,A,G,E */
08326 , { 190, 190, 60, -1510, 60} /* UA,AU,A,G,A */
08327 , { 1090, 1090, 960, -610, 960} /* UA,AU,A,G,C */
08328 , { 1930, 1930, 1800, -1020, 1800} /* UA,AU,A,G,G */
08329 , { 1090, 1090, 960, -610, 960} /* UA,AU,A,G,U */
08330 }
08331 , {{{ 1110, 1110, 980, -360, 980} /* UA,AU,A,U,E */
08332 , { 1110, 1110, 980, -590, 980} /* UA,AU,A,U,A */
08333 , { 1100, 1100, 970, -360, 970} /* UA,AU,A,U,C */
08334 , { 1110, 1110, 980, -590, 980} /* UA,AU,A,U,G */
08335 , { 360, 360, 0, -1580, 0} /* UA,AU,A,U,U */
08336 }
08337 }
08338 , {{{ 1800, 1650, 1800, 1650, 1360} /* UA,AU,C,E,E */
08339 , { 1270, 1120, 1270, 830} /* UA,AU,C,E,A */
08340 , { 970, 820, 970, 820, 530} /* UA,AU,C,E,C */
08341 , { 1800, 1650, 1800, 1650, 1360} /* UA,AU,C,E,G */
08342 , { 970, 820, 970, 820, 530} /* UA,AU,C,E,U */
08343 }

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```
08344 ,{{ 1270, 1120, 1270, 1120, 830} /* UA,AU,C,A,E */
08345 ,{ 1270, 1120, 1270, 1120, 830} /* UA,AU,C,A,A */
08346 ,{ 960, 810, 960, 810, 520} /* UA,AU,C,C,C */
08347 ,{ 130, -260, 130, -260, -310} /* UA,AU,C,A,G */
08348 ,{ 960, 810, 960, 810, 520} /* UA,AU,C,A,U */
08349 }
08350 ,{{ 980, 830, 980, 830, 540} /* UA,AU,C,C,E */
08351 ,{ 980, 830, 980, 830, 540} /* UA,AU,C,C,A */
08352 ,{ 970, 820, 970, 820, 530} /* UA,AU,C,C,C */
08353 ,{ 980, 830, 980, 830, 540} /* UA,AU,C,C,G */
08354 ,{ 970, 820, 970, 820, 530} /* UA,AU,C,C,U */
08355 }
08356 ,{{ 1800, 1650, 1800, 1650, 1360} /* UA,AU,C,G,E */
08357 ,{ 300, -80, 300, -80, -130} /* UA,AU,C,G,A */
08358 ,{ 960, 810, 960, 810, 520} /* UA,AU,C,G,C */
08359 ,{ 1800, 1650, 1800, 1650, 1360} /* UA,AU,C,G,G */
08360 ,{ 960, 810, 960, 810, 520} /* UA,AU,C,G,U */
08361 }
08362 ,{{ 980, 830, 980, 830, 540} /* UA,AU,C,U,E */
08363 ,{ 980, 830, 980, 830, 540} /* UA,AU,C,U,A */
08364 ,{ 970, 820, 970, 820, 530} /* UA,AU,C,U,C */
08365 ,{ 980, 830, 980, 830, 540} /* UA,AU,C,U,G */
08366 ,{ 0, -150, 0, -150, -440} /* UA,AU,C,U,U */
08367 }
08368 }
08369 ,{{{ 2050, 0, 1800, 2050, 1800} /* UA,AU,G,E,E */
08370 ,{ 2050, 0, 1270, 2050, 1270} /* UA,AU,G,E,A */
08371 ,{ 1750, -60, 970, 1750, 970} /* UA,AU,G,E,C */
08372 ,{ 1800, -290, 1800, 1760, 1800} /* UA,AU,G,E,G */
08373 ,{ 1750, -60, 970, 1750, 970} /* UA,AU,G,E,U */
08374 }
08375 ,{{ 2050, 0, 1270, 2050, 1270} /* UA,AU,G,A,E */
08376 ,{ 2050, 0, 1270, 2050, 1270} /* UA,AU,G,A,A */
08377 ,{ 1740, -310, 960, 1740, 960} /* UA,AU,G,A,C */
08378 ,{ -110, -1390, -110, -580, -110} /* UA,AU,G,A,G */
08379 ,{ 1740, -310, 960, 1740, 960} /* UA,AU,G,A,U */
08380 }
08381 ,{{ 1760, -60, 980, 1760, 980} /* UA,AU,G,C,E */
08382 ,{ 1760, -290, 980, 1760, 980} /* UA,AU,G,C,A */
08383 ,{ 1750, -60, 970, 1750, 970} /* UA,AU,G,C,C */
08384 ,{ 1760, -290, 980, 1760, 980} /* UA,AU,G,C,G */
08385 ,{ 1750, -60, 970, 1750, 970} /* UA,AU,G,C,U */
08386 }
08387 ,{{ 1800, -310, 1800, 1740, 1800} /* UA,AU,G,G,E */
08388 ,{ 60, -1210, 60, -400, 60} /* UA,AU,G,G,A */
08389 ,{ 1740, -310, 960, 1740, 960} /* UA,AU,G,G,C */
08390 ,{ 1800, -720, 1800, 80, 1800} /* UA,AU,G,G,G */
08391 ,{ 1740, -310, 960, 1740, 960} /* UA,AU,G,G,U */
08392 }
08393 ,{{ 1760, -60, 980, 1760, 980} /* UA,AU,G,U,E */
08394 ,{ 1760, -290, 980, 1760, 980} /* UA,AU,G,U,A */
08395 ,{ 1750, -60, 970, 1750, 970} /* UA,AU,G,U,C */
08396 ,{ 1760, -290, 980, 1760, 980} /* UA,AU,G,U,G */
08397 ,{ 0, -1280, 0, -470, 0} /* UA,AU,G,U,U */
08398 }
08399 }
08400 ,{{{ 1670, 1650, 1670, 1650, 570} /* UA,AU,U,E,E */
08401 ,{ 1140, 1120, 1140, 1120, 570} /* UA,AU,U,E,A */
08402 ,{ 840, 820, 840, 820, 30} /* UA,AU,U,E,C */
08403 ,{ 1670, 1650, 1670, 1650, 40} /* UA,AU,U,E,G */
08404 ,{ 840, 820, 840, 820, 30} /* UA,AU,U,E,U */
08405 }
08406 ,{{ 1140, 1120, 1140, 1120, 570} /* UA,AU,U,A,E */
08407 ,{ 1140, 1120, 1140, 1120, 570} /* UA,AU,U,A,A */
08408 ,{ 830, 810, 830, 810, 20} /* UA,AU,U,A,C */
08409 ,{ 0, -260, 0, -260, -1050} /* UA,AU,U,A,G */
08410 ,{ 830, 810, 830, 810, 20} /* UA,AU,U,A,U */
08411 }
08412 ,{{ 850, 830, 850, 830, 40} /* UA,AU,U,C,E */
08413 ,{ 850, 830, 850, 830, 40} /* UA,AU,U,C,A */
08414 ,{ 840, 820, 840, 820, 30} /* UA,AU,U,C,C */
08415 ,{ 850, 830, 850, 830, 40} /* UA,AU,U,C,G */
08416 ,{ 840, 820, 840, 820, 30} /* UA,AU,U,C,U */
08417 }
08418 ,{{ 1670, 1650, 1670, 1650, 20} /* UA,AU,U,G,E */
08419 ,{ 180, -80, 180, -80, -870} /* UA,AU,U,G,A */
08420 ,{ 830, 810, 830, 810, 20} /* UA,AU,U,G,C */
08421 ,{ 1670, 1650, 1670, 1650, -380} /* UA,AU,U,G,G */
08422 ,{ 830, 810, 830, 810, 20} /* UA,AU,U,G,U */
08423 }
08424 ,{{ 850, 830, 850, 830, 40} /* UA,AU,U,U,E */
08425 ,{ 850, 830, 850, 830, 40} /* UA,AU,U,U,A */
08426 ,{ 840, 820, 840, 820, 30} /* UA,AU,U,U,C */
08427 ,{ 850, 830, 850, 830, 40} /* UA,AU,U,U,G */
08428 ,{ -130, -150, -130, -150, -940} /* UA,AU,U,U,U */
08429 }
08430 }
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08431 }
08432 ,{{{ 2120, 2120, 1990, 2120, 1990} /* UA,UA,E,E,E */
08433 ,{ 2120, 1470, 1340, 2120, 1340} /* UA,UA,E,E,A */
08434 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,UA,E,E,C */
08435 ,{ 2120, 2120, 1990, 1990, 1990} /* UA,UA,E,E,G */
08436 ,{ 1860, 1210, 1080, 1860, 1080} /* UA,UA,E,E,U */
08437 }
08438 ,{{{ 2120, 1470, 1340, 2120, 1340} /* UA,UA,E,A,E */
08439 ,{ 2120, 1470, 1340, 2120, 1340} /* UA,UA,E,A,A */
08440 ,{ 1840, 1190, 1060, 1840, 1060} /* UA,UA,E,A,C */
08441 ,{ 180, 60, 180, -210, -60} /* UA,UA,E,A,G */
08442 ,{ 1840, 1190, 1060, 1840, 1060} /* UA,UA,E,A,U */
08443 }
08444 ,{{{ 1990, 1340, 1210, 1990, 1210} /* UA,UA,E,C,E */
08445 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,UA,E,C,A */
08446 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,UA,E,C,C */
08447 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,UA,E,C,G */
08448 ,{ 1860, 1210, 1080, 1860, 1080} /* UA,UA,E,C,U */
08449 }
08450 ,{{{ 2120, 2120, 1990, 1840, 1990} /* UA,UA,E,G,E */
08451 ,{ -120, -230, -120, -510, -360} /* UA,UA,E,G,A */
08452 ,{ 1840, 1190, 1060, 1840, 1060} /* UA,UA,E,G,C */
08453 ,{ 2120, 2120, 1990, 1840, 1990} /* UA,UA,E,G,G */
08454 ,{ 1840, 1190, 1060, 1840, 1060} /* UA,UA,E,G,U */
08455 }
08456 ,{{{ 1990, 1340, 1210, 1990, 1210} /* UA,UA,E,U,E */
08457 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,UA,E,U,A */
08458 ,{ 1550, 900, 770, 1550, 770} /* UA,UA,E,U,C */
08459 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,UA,E,U,G */
08460 ,{ 640, 640, 270, 120, 270} /* UA,UA,E,U,U */
08461 }
08462 }
08463 ,{{{ 2120, 2120, 1990, -120, 1990} /* UA,UA,A,E,E */
08464 ,{ 1470, 1470, 1340, -230, 1340} /* UA,UA,A,E,A */
08465 ,{ 1340, 1340, 1210, -120, 1210} /* UA,UA,A,E,C */
08466 ,{ 2120, 2120, 1990, -360, 1990} /* UA,UA,A,E,G */
08467 ,{ 1210, 1210, 1080, -250, 1080} /* UA,UA,A,E,U */
08468 }
08469 ,{{{ 1470, 1470, 1340, -230, 1340} /* UA,UA,A,A,E */
08470 ,{ 1470, 1470, 1340, -230, 1340} /* UA,UA,A,A,A */
08471 ,{ 1190, 1190, 1060, -510, 1060} /* UA,UA,A,A,C */
08472 ,{ 60, 60, -60, -1640, -60} /* UA,UA,A,A,G */
08473 ,{ 1190, 1190, 1060, -510, 1060} /* UA,UA,A,A,U */
08474 }
08475 ,{{{ 1340, 1340, 1210, -120, 1210} /* UA,UA,A,C,E */
08476 ,{ 1340, 1340, 1210, -360, 1210} /* UA,UA,A,C,A */
08477 ,{ 1340, 1340, 1210, -120, 1210} /* UA,UA,A,C,C */
08478 ,{ 1340, 1340, 1210, -360, 1210} /* UA,UA,A,C,G */
08479 ,{ 1210, 1210, 1080, -250, 1080} /* UA,UA,A,C,U */
08480 }
08481 ,{{{ 2120, 2120, 1990, -510, 1990} /* UA,UA,A,G,E */
08482 ,{ -230, -230, -360, -1940, -360} /* UA,UA,A,G,A */
08483 ,{ 1190, 1190, 1060, -510, 1060} /* UA,UA,A,G,C */
08484 ,{ 2120, 2120, 1990, -830, 1990} /* UA,UA,A,G,G */
08485 ,{ 1190, 1190, 1060, -510, 1060} /* UA,UA,A,G,U */
08486 }
08487 ,{{{ 1340, 1340, 1210, -360, 1210} /* UA,UA,A,U,E */
08488 ,{ 1340, 1340, 1210, -360, 1210} /* UA,UA,A,U,A */
08489 ,{ 900, 900, 770, -560, 770} /* UA,UA,A,U,C */
08490 ,{ 1340, 1340, 1210, -360, 1210} /* UA,UA,A,U,G */
08491 ,{ 640, 640, 270, -1300, 270} /* UA,UA,A,U,U */
08492 }
08493 }
08494 ,{{{ 1990, 1840, 1990, 1840, 1550} /* UA,UA,C,E,E */
08495 ,{ 1340, 1190, 1340, 1190, 900} /* UA,UA,C,E,A */
08496 ,{ 1210, 1060, 1210, 1060, 770} /* UA,UA,C,E,C */
08497 ,{ 1990, 1840, 1990, 1840, 1550} /* UA,UA,C,E,G */
08498 ,{ 1080, 930, 1080, 930, 640} /* UA,UA,C,E,U */
08499 }
08500 ,{{{ 1340, 1190, 1340, 1190, 900} /* UA,UA,C,A,E */
08501 ,{ 1340, 1190, 1340, 1190, 900} /* UA,UA,C,A,A */
08502 ,{ 1060, 910, 1060, 910, 620} /* UA,UA,C,A,C */
08503 ,{ 180, -210, 180, -210, -260} /* UA,UA,C,A,G */
08504 ,{ 1060, 910, 1060, 910, 620} /* UA,UA,C,A,U */
08505 }
08506 ,{{{ 1210, 1060, 1210, 1060, 770} /* UA,UA,C,C,E */
08507 ,{ 1210, 1060, 1210, 1060, 770} /* UA,UA,C,C,A */
08508 ,{ 1210, 1060, 1210, 1060, 770} /* UA,UA,C,C,C */
08509 ,{ 1210, 1060, 1210, 1060, 770} /* UA,UA,C,C,G */
08510 ,{ 1080, 930, 1080, 930, 640} /* UA,UA,C,C,U */
08511 }
08512 ,{{{ 1990, 1840, 1990, 1840, 1550} /* UA,UA,C,G,E */
08513 ,{ -120, -510, -120, -510, -560} /* UA,UA,C,G,A */
08514 ,{ 1060, 910, 1060, 910, 620} /* UA,UA,C,G,C */
08515 ,{ 1990, 1840, 1990, 1840, 1550} /* UA,UA,C,G,G */
08516 ,{ 1060, 910, 1060, 910, 620} /* UA,UA,C,G,U */
08517 }

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08518 ,{{ 1210, 1060, 1210, 1060, 770} /* UA,UA,C,U,E */
08519 ,{ 1210, 1060, 1210, 1060, 770} /* UA,UA,C,U,A */
08520 ,{ 770, 620, 770, 620, 330} /* UA,UA,C,U,C */
08521 ,{ 1210, 1060, 1210, 1060, 770} /* UA,UA,C,U,G */
08522 ,{ 270, 120, 270, 120, -170} /* UA,UA,C,U,U */
08523 }
08524 }
08525 ,{{{ 2120, 180, 1990, 2120, 1990} /* UA,UA,G,E,E */
08526 ,{ 2120, 60, 1340, 2120, 1340} /* UA,UA,G,E,A */
08527 ,{ 1990, 180, 1210, 1990, 1210} /* UA,UA,G,E,C */
08528 ,{ 1990, -60, 1990, 1990, 1990} /* UA,UA,G,E,G */
08529 ,{ 1860, 50, 1080, 1860, 1080} /* UA,UA,G,E,U */
08530 }
08531 ,{{ 2120, 60, 1340, 2120, 1340} /* UA,UA,G,A,E */
08532 ,{ 2120, 60, 1340, 2120, 1340} /* UA,UA,G,A,A */
08533 ,{ 1840, -210, 1060, 1840, 1060} /* UA,UA,G,A,C */
08534 ,{ -60, -1340, -60, -530, -60} /* UA,UA,G,A,G */
08535 ,{ 1840, -210, 1060, 1840, 1060} /* UA,UA,G,A,U */
08536 }
08537 ,{{ 1990, 180, 1210, 1990, 1210} /* UA,UA,G,C,E */
08538 ,{ 1990, -60, 1210, 1990, 1210} /* UA,UA,G,C,A */
08539 ,{ 1990, 180, 1210, 1990, 1210} /* UA,UA,G,C,C */
08540 ,{ 1990, -60, 1210, 1990, 1210} /* UA,UA,G,C,G */
08541 ,{ 1860, 50, 1080, 1860, 1080} /* UA,UA,G,C,U */
08542 }
08543 ,{{{ 1990, -210, 1990, 1840, 1990} /* UA,UA,G,G,E */
08544 ,{ -360, -1640, -360, -830, -360} /* UA,UA,G,G,A */
08545 ,{ 1840, -210, 1060, 1840, 1060} /* UA,UA,G,G,C */
08546 ,{ 1990, -530, 1990, 270, 1990} /* UA,UA,G,G,G */
08547 ,{ 1840, -210, 1060, 1840, 1060} /* UA,UA,G,G,U */
08548 }
08549 ,{{{ 1990, -60, 1210, 1990, 1210} /* UA,UA,G,U,E */
08550 ,{ 1990, -60, 1210, 1990, 1210} /* UA,UA,G,U,A */
08551 ,{ 1550, -260, 770, 1550, 770} /* UA,UA,G,U,C */
08552 ,{ 1990, -60, 1210, 1990, 1210} /* UA,UA,G,U,G */
08553 ,{ 270, -1000, 270, -200, 270} /* UA,UA,G,U,U */
08554 }
08555 }
08556 ,{{{ 1860, 1840, 1860, 1840, 640} /* UA,UA,U,E,E */
08557 ,{ 1210, 1190, 1210, 1190, 640} /* UA,UA,U,E,A */
08558 ,{ 1080, 1060, 1080, 1060, 270} /* UA,UA,U,E,C */
08559 ,{ 1860, 1840, 1860, 1840, 270} /* UA,UA,U,E,G */
08560 ,{ 950, 930, 950, 930, 140} /* UA,UA,U,E,U */
08561 }
08562 ,{{{ 1210, 1190, 1210, 1190, 640} /* UA,UA,U,A,E */
08563 ,{ 1210, 1190, 1210, 1190, 640} /* UA,UA,U,A,A */
08564 ,{ 930, 910, 930, 910, 120} /* UA,UA,U,A,C */
08565 ,{ 50, -210, 50, -210, -1000} /* UA,UA,U,A,G */
08566 ,{ 930, 910, 930, 910, 120} /* UA,UA,U,A,U */
08567 }
08568 ,{{{ 1080, 1060, 1080, 1060, 270} /* UA,UA,U,C,E */
08569 ,{ 1080, 1060, 1080, 1060, 270} /* UA,UA,U,C,A */
08570 ,{ 1080, 1060, 1080, 1060, 270} /* UA,UA,U,C,C */
08571 ,{ 1080, 1060, 1080, 1060, 270} /* UA,UA,U,C,G */
08572 ,{ 950, 930, 950, 930, 140} /* UA,UA,U,C,U */
08573 }
08574 ,{{{ 1860, 1840, 1860, 1840, 120} /* UA,UA,U,G,E */
08575 ,{ -250, -510, -250, -510, -1300} /* UA,UA,U,G,A */
08576 ,{ 930, 910, 930, 910, 120} /* UA,UA,U,G,C */
08577 ,{ 1860, 1840, 1860, 1840, -200} /* UA,UA,U,G,G */
08578 ,{ 930, 910, 930, 910, 120} /* UA,UA,U,G,U */
08579 }
08580 ,{{{ 1080, 1060, 1080, 1060, 270} /* UA,UA,U,U,E */
08581 ,{ 1080, 1060, 1080, 1060, 270} /* UA,UA,U,U,A */
08582 ,{ 640, 620, 640, 620, -170} /* UA,UA,U,U,C */
08583 ,{ 1080, 1060, 1080, 1060, 270} /* UA,UA,U,U,G */
08584 ,{ 140, 120, 140, 120, -670} /* UA,UA,U,U,U */
08585 }
08586 }
08587 }
08588 ,{{{ 2120, 2120, 1990, 2120, 1990} /* UA,NN,E,E,E */
08589 ,{ 2120, 1470, 1340, 2120, 1340} /* UA,NN,E,E,A */
08590 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,NN,E,E,C */
08591 ,{ 2120, 2120, 1990, 1990, 1990} /* UA,NN,E,E,G */
08592 ,{ 1860, 1210, 1080, 1860, 1080} /* UA,NN,E,E,U */
08593 }
08594 ,{{{ 2120, 1470, 1340, 2120, 1340} /* UA,NN,E,A,E */
08595 ,{ 2120, 1470, 1340, 2120, 1340} /* UA,NN,E,A,A */
08596 ,{ 1840, 1190, 1060, 1840, 1060} /* UA,NN,E,A,C */
08597 ,{ 400, 290, 400, 10, 160} /* UA,NN,E,A,G */
08598 ,{ 1840, 1190, 1060, 1840, 1060} /* UA,NN,E,A,U */
08599 }
08600 ,{{{ 1990, 1340, 1210, 1990, 1210} /* UA,NN,E,C,E */
08601 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,NN,E,C,A */
08602 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,NN,E,C,C */
08603 ,{ 1990, 1340, 1210, 1990, 1210} /* UA,NN,E,C,G */
08604 ,{ 1860, 1210, 1080, 1860, 1080} /* UA,NN,E,C,U */
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08605      }
08606      ,{{ 2120, 2120, 1990, 1840, 1990} /* UA,NN,E,G,E */
08607      ,{ 300, 190, 300, -80, 60} /* UA,NN,E,G,A */
08608      ,{ 1840, 1190, 1060, 1840, 1060} /* UA,NN,E,G,C */
08609      ,{ 2120, 2120, 1990, 1840, 1990} /* UA,NN,E,G,G */
08610      ,{ 1840, 1190, 1060, 1840, 1060} /* UA,NN,E,G,U */
08611      }
08612      ,{{ 1990, 1340, 1210, 1990, 1210} /* UA,NN,E,U,E */
08613      ,{ 1990, 1340, 1210, 1990, 1210} /* UA,NN,E,U,A */
08614      ,{ 1750, 1100, 970, 1750, 970} /* UA,NN,E,U,C */
08615      ,{ 1990, 1340, 1210, 1990, 1210} /* UA,NN,E,U,G */
08616      ,{ 640, 640, 270, 120, 270} /* UA,NN,E,U,U */
08617      }
08618      }
08619      ,{{{ 2120, 2120, 1990, -120, 1990} /* UA,NN,A,E,E */
08620      ,{ 1470, 1470, 1340, -230, 1340} /* UA,NN,A,E,A */
08621      ,{ 1340, 1340, 1210, -120, 1210} /* UA,NN,A,E,C */
08622      ,{ 2120, 2120, 1990, -360, 1990} /* UA,NN,A,E,G */
08623      ,{ 1210, 1210, 1080, -250, 1080} /* UA,NN,A,E,U */
08624      }
08625      ,{{{ 1470, 1470, 1340, -230, 1340} /* UA,NN,A,A,E */
08626      ,{ 1470, 1470, 1340, -230, 1340} /* UA,NN,A,A,A */
08627      ,{ 1190, 1190, 1060, -510, 1060} /* UA,NN,A,A,C */
08628      ,{ 290, 290, 160, -1410, 160} /* UA,NN,A,A,G */
08629      ,{ 1190, 1190, 1060, -510, 1060} /* UA,NN,A,A,U */
08630      }
08631      ,{{{ 1340, 1340, 1210, -120, 1210} /* UA,NN,A,C,E */
08632      ,{ 1340, 1340, 1210, -360, 1210} /* UA,NN,A,C,A */
08633      ,{ 1340, 1340, 1210, -120, 1210} /* UA,NN,A,C,C */
08634      ,{ 1340, 1340, 1210, -360, 1210} /* UA,NN,A,C,G */
08635      ,{ 1210, 1210, 1080, -250, 1080} /* UA,NN,A,C,U */
08636      }
08637      ,{{{ 2120, 2120, 1990, -510, 1990} /* UA,NN,A,G,E */
08638      ,{ 190, 190, 60, -1510, 60} /* UA,NN,A,G,A */
08639      ,{ 1190, 1190, 1060, -510, 1060} /* UA,NN,A,G,C */
08640      ,{ 2120, 2120, 1990, -830, 1990} /* UA,NN,A,G,G */
08641      ,{ 1190, 1190, 1060, -510, 1060} /* UA,NN,A,G,U */
08642      }
08643      ,{{{ 1340, 1340, 1210, -360, 1210} /* UA,NN,A,U,E */
08644      ,{ 1340, 1340, 1210, -360, 1210} /* UA,NN,A,U,A */
08645      ,{ 1100, 1100, 970, -360, 970} /* UA,NN,A,U,C */
08646      ,{ 1340, 1340, 1210, -360, 1210} /* UA,NN,A,U,G */
08647      ,{ 640, 640, 270, -1300, 270} /* UA,NN,A,U,U */
08648      }
08649      }
08650      ,{{{ 1990, 1840, 1990, 1840, 1550} /* UA,NN,C,E,E */
08651      ,{ 1340, 1190, 1340, 1190, 900} /* UA,NN,C,E,A */
08652      ,{ 1210, 1060, 1210, 1060, 770} /* UA,NN,C,E,C */
08653      ,{ 1990, 1840, 1990, 1840, 1550} /* UA,NN,C,E,G */
08654      ,{ 1080, 930, 1080, 930, 640} /* UA,NN,C,E,U */
08655      }
08656      ,{{{ 1340, 1190, 1340, 1190, 900} /* UA,NN,C,A,E */
08657      ,{ 1340, 1190, 1340, 1190, 900} /* UA,NN,C,A,A */
08658      ,{ 1060, 910, 1060, 910, 620} /* UA,NN,C,A,C */
08659      ,{ 400, 10, 400, 10, -40} /* UA,NN,C,A,G */
08660      ,{ 1060, 910, 1060, 910, 620} /* UA,NN,C,A,U */
08661      }
08662      ,{{{ 1210, 1060, 1210, 1060, 770} /* UA,NN,C,C,E */
08663      ,{ 1210, 1060, 1210, 1060, 770} /* UA,NN,C,C,A */
08664      ,{ 1210, 1060, 1210, 1060, 770} /* UA,NN,C,C,C */
08665      ,{ 1210, 1060, 1210, 1060, 770} /* UA,NN,C,C,G */
08666      ,{ 1080, 930, 1080, 930, 640} /* UA,NN,C,C,U */
08667      }
08668      ,{{{ 1990, 1840, 1990, 1840, 1550} /* UA,NN,C,G,E */
08669      ,{ 300, -80, 300, -130, -130} /* UA,NN,C,G,A */
08670      ,{ 1060, 910, 1060, 910, 620} /* UA,NN,C,G,C */
08671      ,{ 1990, 1840, 1990, 1840, 1550} /* UA,NN,C,G,G */
08672      ,{ 1060, 910, 1060, 910, 620} /* UA,NN,C,G,U */
08673      }
08674      ,{{{ 1210, 1060, 1210, 1060, 770} /* UA,NN,C,U,E */
08675      ,{ 1210, 1060, 1210, 1060, 770} /* UA,NN,C,U,A */
08676      ,{ 970, 820, 970, 820, 530} /* UA,NN,C,U,C */
08677      ,{ 1210, 1060, 1210, 1060, 770} /* UA,NN,C,U,G */
08678      ,{ 270, 120, 270, 120, -170} /* UA,NN,C,U,U */
08679      }
08680      }
08681      ,{{{ 2120, 180, 1990, 2120, 1990} /* UA,NN,G,E,E */
08682      ,{ 2120, 60, 1340, 2120, 1340} /* UA,NN,G,E,A */
08683      ,{ 1990, 180, 1210, 1990, 1210} /* UA,NN,G,E,C */
08684      ,{ 1990, -60, 1990, 1990, 1990} /* UA,NN,G,E,G */
08685      ,{ 1860, 50, 1080, 1860, 1080} /* UA,NN,G,E,U */
08686      }
08687      ,{{{ 2120, 60, 1340, 2120, 1340} /* UA,NN,G,A,E */
08688      ,{ 2120, 60, 1340, 2120, 1340} /* UA,NN,G,A,A */
08689      ,{ 1840, -210, 1060, 1840, 1060} /* UA,NN,G,A,C */
08690      ,{ 160, -1110, 160, -310, 160} /* UA,NN,G,A,G */
08691      ,{ 1840, -210, 1060, 1840, 1060} /* UA,NN,G,A,U */

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08692      }
08693      ,{{ 1990, 180, 1210, 1990, 1210} /* UA,NN,G,C,E */
08694      ,{{ 1990, -60, 1210, 1990, 1210} /* UA,NN,G,C,A */
08695      ,{{ 1990, 180, 1210, 1990, 1210} /* UA,NN,G,C,C */
08696      ,{{ 1990, -60, 1210, 1990, 1210} /* UA,NN,G,C,G */
08697      ,{{ 1860, 50, 1080, 1860, 1080} /* UA,NN,G,C,U */
08698      }
08699      ,{{ 1990, -210, 1990, 1840, 1990} /* UA,NN,G,G,E */
08700      ,{{ 60, -1210, 60, -400, 60} /* UA,NN,G,G,A */
08701      ,{{ 1840, -210, 1060, 1840, 1060} /* UA,NN,G,G,C */
08702      ,{{ 1990, -530, 1990, 270, 1990} /* UA,NN,G,G,G */
08703      ,{{ 1840, -210, 1060, 1840, 1060} /* UA,NN,G,G,U */
08704      }
08705      ,{{ 1990, -60, 1210, 1990, 1210} /* UA,NN,G,U,E */
08706      ,{{ 1990, -60, 1210, 1990, 1210} /* UA,NN,G,U,A */
08707      ,{{ 1750, -60, 970, 1750, 970} /* UA,NN,G,U,C */
08708      ,{{ 1990, -60, 1210, 1990, 1210} /* UA,NN,G,U,G */
08709      ,{{ 270, -1000, 270, -200, 270} /* UA,NN,G,U,U */
08710      }
08711      }
08712      ,{{{ 1860, 1840, 1860, 1840, 640} /* UA,NN,U,E,E */
08713      ,{{ 1210, 1190, 1210, 1190, 640} /* UA,NN,U,E,A */
08714      ,{{ 1080, 1060, 1080, 1060, 270} /* UA,NN,U,E,C */
08715      ,{{ 1860, 1840, 1860, 1840, 270} /* UA,NN,U,E,G */
08716      ,{{ 950, 930, 950, 930, 140} /* UA,NN,U,E,U */
08717      }
08718      ,{{{ 1210, 1190, 1210, 1190, 640} /* UA,NN,U,A,E */
08719      ,{{ 1210, 1190, 1210, 1190, 640} /* UA,NN,U,A,A */
08720      ,{{ 930, 910, 930, 910, 120} /* UA,NN,U,A,C */
08721      ,{{ 270, 10, 270, 10, -780} /* UA,NN,U,A,G */
08722      ,{{ 930, 910, 930, 910, 120} /* UA,NN,U,A,U */
08723      }
08724      ,{{{ 1080, 1060, 1080, 1060, 270} /* UA,NN,U,C,E */
08725      ,{{ 1080, 1060, 1080, 1060, 270} /* UA,NN,U,C,A */
08726      ,{{ 1080, 1060, 1080, 1060, 270} /* UA,NN,U,C,C */
08727      ,{{ 1080, 1060, 1080, 1060, 270} /* UA,NN,U,C,G */
08728      ,{{ 950, 930, 950, 930, 140} /* UA,NN,U,C,U */
08729      }
08730      ,{{{ 1860, 1840, 1860, 1840, 120} /* UA,NN,U,G,E */
08731      ,{{ 180, -80, 180, -80, -870} /* UA,NN,U,G,A */
08732      ,{{ 930, 910, 930, 910, 120} /* UA,NN,U,G,C */
08733      ,{{ 1860, 1840, 1860, 1840, -200} /* UA,NN,U,G,G */
08734      ,{{ 930, 910, 930, 910, 120} /* UA,NN,U,G,U */
08735      }
08736      ,{{{ 1080, 1060, 1080, 1060, 270} /* UA,NN,U,U,E */
08737      ,{{ 1080, 1060, 1080, 1060, 270} /* UA,NN,U,U,A */
08738      ,{{ 840, 820, 840, 820, 30} /* UA,NN,U,U,C */
08739      ,{{ 1080, 1060, 1080, 1060, 270} /* UA,NN,U,U,G */
08740      ,{{ 140, 120, 140, 120, -670} /* UA,NN,U,U,U */
08741      }
08742      }
08743      }
08744      }
08745      ,{{{{{ INF, INF, INF, INF, INF} /* NN,NP,E,E,E */
08746      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,E,A */
08747      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,E,C */
08748      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,E,G */
08749      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,E,U */
08750      }
08751      ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E,A,E */
08752      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,A,A */
08753      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,A,C */
08754      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,A,G */
08755      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,A,U */
08756      }
08757      ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E,C,E */
08758      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,C,A */
08759      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,C,C */
08760      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,C,G */
08761      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,C,U */
08762      }
08763      ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E,G,E */
08764      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,G,A */
08765      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,G,C */
08766      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,G,G */
08767      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,G,U */
08768      }
08769      ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E,U,E */
08770      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,U,A */
08771      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,U,C */
08772      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,U,G */
08773      ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,U,U */
08774      }
08775      }
08776      ,{{{ INF, INF, INF, INF, INF} /* NN,NP,A,E,E */
08777      ,{{ INF, INF, INF, INF, INF} /* NN,NP,A,E,A */
08778      ,{{ INF, INF, INF, INF, INF} /* NN,NP,A,E,C */
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08779 , { INF, INF, INF, INF, INF } /* NN,NP,A,E,G */
08780 , { INF, INF, INF, INF, INF } /* NN,NP,A,E,U */
08781 }
08782 , { { INF, INF, INF, INF, INF } /* NN,NP,A,A,E */
08783 , { INF, INF, INF, INF, INF } /* NN,NP,A,A,A */
08784 , { INF, INF, INF, INF, INF } /* NN,NP,A,A,C */
08785 , { INF, INF, INF, INF, INF } /* NN,NP,A,A,G */
08786 , { INF, INF, INF, INF, INF } /* NN,NP,A,A,U */
08787 }
08788 , { { INF, INF, INF, INF, INF } /* NN,NP,A,C,E */
08789 , { INF, INF, INF, INF, INF } /* NN,NP,A,C,A */
08790 , { INF, INF, INF, INF, INF } /* NN,NP,A,C,C */
08791 , { INF, INF, INF, INF, INF } /* NN,NP,A,C,G */
08792 , { INF, INF, INF, INF, INF } /* NN,NP,A,C,U */
08793 }
08794 , { { INF, INF, INF, INF, INF } /* NN,NP,A,G,E */
08795 , { INF, INF, INF, INF, INF } /* NN,NP,A,G,A */
08796 , { INF, INF, INF, INF, INF } /* NN,NP,A,G,C */
08797 , { INF, INF, INF, INF, INF } /* NN,NP,A,G,G */
08798 , { INF, INF, INF, INF, INF } /* NN,NP,A,G,U */
08799 }
08800 , { { INF, INF, INF, INF, INF } /* NN,NP,A,U,E */
08801 , { INF, INF, INF, INF, INF } /* NN,NP,A,U,A */
08802 , { INF, INF, INF, INF, INF } /* NN,NP,A,U,C */
08803 , { INF, INF, INF, INF, INF } /* NN,NP,A,U,G */
08804 , { INF, INF, INF, INF, INF } /* NN,NP,A,U,U */
08805 }
08806 }
08807 , { { { INF, INF, INF, INF, INF } /* NN,NP,C,E,E */
08808 , { INF, INF, INF, INF, INF } /* NN,NP,C,E,A */
08809 , { INF, INF, INF, INF, INF } /* NN,NP,C,E,C */
08810 , { INF, INF, INF, INF, INF } /* NN,NP,C,E,G */
08811 , { INF, INF, INF, INF, INF } /* NN,NP,C,E,U */
08812 }
08813 , { { { INF, INF, INF, INF, INF } /* NN,NP,C,A,E */
08814 , { INF, INF, INF, INF, INF } /* NN,NP,C,A,A */
08815 , { INF, INF, INF, INF, INF } /* NN,NP,C,A,C */
08816 , { INF, INF, INF, INF, INF } /* NN,NP,C,A,G */
08817 , { INF, INF, INF, INF, INF } /* NN,NP,C,A,U */
08818 }
08819 , { { { INF, INF, INF, INF, INF } /* NN,NP,C,C,E */
08820 , { INF, INF, INF, INF, INF } /* NN,NP,C,C,A */
08821 , { INF, INF, INF, INF, INF } /* NN,NP,C,C,C */
08822 , { INF, INF, INF, INF, INF } /* NN,NP,C,C,G */
08823 , { INF, INF, INF, INF, INF } /* NN,NP,C,C,U */
08824 }
08825 , { { { INF, INF, INF, INF, INF } /* NN,NP,C,G,E */
08826 , { INF, INF, INF, INF, INF } /* NN,NP,C,G,A */
08827 , { INF, INF, INF, INF, INF } /* NN,NP,C,G,C */
08828 , { INF, INF, INF, INF, INF } /* NN,NP,C,G,G */
08829 , { INF, INF, INF, INF, INF } /* NN,NP,C,G,U */
08830 }
08831 , { { { INF, INF, INF, INF, INF } /* NN,NP,C,U,E */
08832 , { INF, INF, INF, INF, INF } /* NN,NP,C,U,A */
08833 , { INF, INF, INF, INF, INF } /* NN,NP,C,U,C */
08834 , { INF, INF, INF, INF, INF } /* NN,NP,C,U,G */
08835 , { INF, INF, INF, INF, INF } /* NN,NP,C,U,U */
08836 }
08837 }
08838 , { { { { INF, INF, INF, INF, INF } /* NN,NP,G,E,E */
08839 , { INF, INF, INF, INF, INF } /* NN,NP,G,E,A */
08840 , { INF, INF, INF, INF, INF } /* NN,NP,G,E,C */
08841 , { INF, INF, INF, INF, INF } /* NN,NP,G,E,G */
08842 , { INF, INF, INF, INF, INF } /* NN,NP,G,E,U */
08843 }
08844 , { { { INF, INF, INF, INF, INF } /* NN,NP,G,A,E */
08845 , { INF, INF, INF, INF, INF } /* NN,NP,G,A,A */
08846 , { INF, INF, INF, INF, INF } /* NN,NP,G,A,C */
08847 , { INF, INF, INF, INF, INF } /* NN,NP,G,A,G */
08848 , { INF, INF, INF, INF, INF } /* NN,NP,G,A,U */
08849 }
08850 , { { { INF, INF, INF, INF, INF } /* NN,NP,G,C,E */
08851 , { INF, INF, INF, INF, INF } /* NN,NP,G,C,A */
08852 , { INF, INF, INF, INF, INF } /* NN,NP,G,C,C */
08853 , { INF, INF, INF, INF, INF } /* NN,NP,G,C,G */
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08855 }
08856 , { { { INF, INF, INF, INF, INF } /* NN,NP,G,G,E */
08857 , { INF, INF, INF, INF, INF } /* NN,NP,G,G,A */
08858 , { INF, INF, INF, INF, INF } /* NN,NP,G,G,C */
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08860 , { INF, INF, INF, INF, INF } /* NN,NP,G,G,U */
08861 }
08862 , { { { INF, INF, INF, INF, INF } /* NN,NP,G,U,E */
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08865 , { INF, INF, INF, INF, INF } /* NN,NP,G,U,G */

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08866 , { INF, INF, INF, INF, INF} /* NN,NP,G,U,U */
08867 }
08868 }
08869 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,U,E,E */
08870 , { INF, INF, INF, INF, INF} /* NN,NP,U,E,A */
08871 , { INF, INF, INF, INF, INF} /* NN,NP,U,E,C */
08872 , { INF, INF, INF, INF, INF} /* NN,NP,U,E,G */
08873 , { INF, INF, INF, INF, INF} /* NN,NP,U,E,U */
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08880 }
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08886 }
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08891 , { INF, INF, INF, INF, INF} /* NN,NP,U,G,U */
08892 }
08893 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,U,U,E */
08894 , { INF, INF, INF, INF, INF} /* NN,NP,U,U,A */
08895 , { INF, INF, INF, INF, INF} /* NN,NP,U,U,C */
08896 , { INF, INF, INF, INF, INF} /* NN,NP,U,U,G */
08897 , { INF, INF, INF, INF, INF} /* NN,NP,U,U,U */
08898 }
08899 }
08900 }
08901 ,{{{ 1350, 850, 720, 1350, 720} /* NN,CG,E,E,E */
08902 , { 1300, 650, 540, 1300, 520} /* NN,CG,E,E,A */
08903 , { 1350, 700, 570, 1350, 570} /* NN,CG,E,E,C */
08904 , { 1300, 850, 720, 1300, 720} /* NN,CG,E,E,G */
08905 , { 1250, 590, 460, 1250, 460} /* NN,CG,E,E,U */
08906 }
08907 ,{{{ 1160, 500, 400, 1160, 370} /* NN,CG,E,A,E */
08908 , { 1160, 500, 370, 1160, 370} /* NN,CG,E,A,A */
08909 , { 850, 190, 60, 850, 60} /* NN,CG,E,A,C */
08910 , { 400, 290, 400, 10, 170} /* NN,CG,E,A,G */
08911 , { 850, 190, 60, 850, 60} /* NN,CG,E,A,U */
08912 }
08913 ,{{{ 1300, 650, 520, 1300, 520} /* NN,CG,E,C,E */
08914 , { 1300, 650, 520, 1300, 520} /* NN,CG,E,C,A */
08915 , { 1290, 640, 510, 1290, 510} /* NN,CG,E,C,C */
08916 , { 1300, 650, 520, 1300, 520} /* NN,CG,E,C,G */
08917 , { 1250, 590, 460, 1250, 460} /* NN,CG,E,C,U */
08918 }
08919 ,{{{ 850, 850, 720, 850, 720} /* NN,CG,E,G,E */
08920 , { 540, 0, 540, -270, -120} /* NN,CG,E,G,A */
08921 , { 850, 190, 60, 850, 60} /* NN,CG,E,G,C */
08922 , { 850, 850, 720, 570, 720} /* NN,CG,E,G,G */
08923 , { 850, 190, 60, 850, 60} /* NN,CG,E,G,U */
08924 }
08925 ,{{{ 1350, 700, 570, 1350, 570} /* NN,CG,E,U,E */
08926 , { 1300, 650, 520, 1300, 520} /* NN,CG,E,U,A */
08927 , { 1350, 700, 570, 1350, 570} /* NN,CG,E,U,C */
08928 , { 1300, 650, 520, 1300, 520} /* NN,CG,E,U,G */
08929 , { 100, 100, -270, -230, -270} /* NN,CG,E,U,U */
08930 }
08931 }
08932 ,{{{ 850, 850, 720, -330, 720} /* NN,CG,A,E,E */
08933 , { 650, 650, 520, -620, 520} /* NN,CG,A,E,A */
08934 , { 700, 700, 570, -330, 570} /* NN,CG,A,E,C */
08935 , { 850, 850, 720, -620, 720} /* NN,CG,A,E,G */
08936 , { 590, 590, 460, -440, 460} /* NN,CG,A,E,U */
08937 }
08938 ,{{{ 500, 500, 370, -770, 370} /* NN,CG,A,A,E */
08939 , { 500, 500, 370, -770, 370} /* NN,CG,A,A,A */
08940 , { 190, 190, 60, -1070, 60} /* NN,CG,A,A,C */
08941 , { 290, 290, 160, -980, 160} /* NN,CG,A,A,G */
08942 , { 190, 190, 60, -1080, 60} /* NN,CG,A,A,U */
08943 }
08944 ,{{{ 650, 650, 520, -390, 520} /* NN,CG,A,C,E */
08945 , { 650, 650, 520, -620, 520} /* NN,CG,A,C,A */
08946 , { 640, 640, 510, -390, 510} /* NN,CG,A,C,C */
08947 , { 650, 650, 520, -620, 520} /* NN,CG,A,C,G */
08948 , { 590, 590, 460, -440, 460} /* NN,CG,A,C,U */
08949 }
08950 ,{{{ 850, 850, 720, -1080, 720} /* NN,CG,A,G,E */
08951 , { 10, 0, 10, -1270, -120} /* NN,CG,A,G,A */
08952 , { 190, 190, 60, -1080, 60} /* NN,CG,A,G,C */
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08953      , {      850,      850,      720, -1080,      720} /* NN, CG, A, G, G */
08954      , {      190,      190,        60, -1080,        60} /* NN, CG, A, G, U */
08955      }
08956      , {{      700,      700,      570, -330,      570} /* NN, CG, A, U, E */
08957      , {      650,      650,      520, -620,      520} /* NN, CG, A, U, A */
08958      , {      700,      700,      570, -330,      570} /* NN, CG, A, U, C */
08959      , {      650,      650,      520, -620,      520} /* NN, CG, A, U, G */
08960      , {      100,      100,     -270, -1300,     -270} /* NN, CG, A, U, U */
08961      }
08962      }
08963      , {{{      720,      570,      720,      570,      480} /* NN, CG, C, E, E */
08964      , {      540,      370,      540,      370,      280} /* NN, CG, C, E, A */
08965      , {      570,      420,      570,      420,      340} /* NN, CG, C, E, C */
08966      , {      720,      570,      720,      570,      480} /* NN, CG, C, E, G */
08967      , {      460,      310,      460,      310,      230} /* NN, CG, C, E, U */
08968      }
08969      , {{      400,      220,      400,      220,      170} /* NN, CG, C, A, E */
08970      , {      370,      220,      370,      220,      140} /* NN, CG, C, A, A */
08971      , {      60,      -80,      60,      -80,     -170} /* NN, CG, C, A, C */
08972      , {      400,      10,      400,      10,      170} /* NN, CG, C, A, G */
08973      , {      60,      -80,      60,      -80,     -170} /* NN, CG, C, A, U */
08974      }
08975      , {{      520,      370,      520,      370,      280} /* NN, CG, C, C, E */
08976      , {      520,      370,      520,      370,      280} /* NN, CG, C, C, A */
08977      , {      510,      360,      510,      360,      280} /* NN, CG, C, C, C */
08978      , {      520,      370,      520,      370,      280} /* NN, CG, C, C, G */
08979      , {      460,      310,      460,      310,      230} /* NN, CG, C, C, U */
08980      }
08981      , {{{      720,      570,      720,      570,      480} /* NN, CG, C, G, E */
08982      , {      540,     -100,      540,     -270,     -120} /* NN, CG, C, G, A */
08983      , {      60,      -80,      60,      -80,     -170} /* NN, CG, C, G, C */
08984      , {      720,      570,      720,      570,      480} /* NN, CG, C, G, G */
08985      , {      60,      -80,      60,      -80,     -170} /* NN, CG, C, G, U */
08986      }
08987      , {{{      570,      420,      570,      420,      340} /* NN, CG, C, U, E */
08988      , {      520,      370,      520,      370,      280} /* NN, CG, C, U, A */
08989      , {      570,      420,      570,      420,      340} /* NN, CG, C, U, C */
08990      , {      520,      370,      520,      370,      280} /* NN, CG, C, U, G */
08991      , {     -270,     -420,     -270,     -420,     -500} /* NN, CG, C, U, U */
08992      }
08993      }
08994      , {{{      1350,     -230,      720,      1350,      720} /* NN, CG, G, E, E */
08995      , {      1300,     -530,      520,      1300,      520} /* NN, CG, G, E, A */
08996      , {      1350,     -230,      570,      1350,      570} /* NN, CG, G, E, C */
08997      , {      1300,     -530,      720,      1300,      720} /* NN, CG, G, E, G */
08998      , {      1250,     -340,      460,      1250,      460} /* NN, CG, G, E, U */
08999      }
09000      , {{{      1160,     -670,      370,      1160,      370} /* NN, CG, G, A, E */
09001      , {      1160,     -670,      370,      1160,      370} /* NN, CG, G, A, A */
09002      , {      850,     -980,      60,      850,      60} /* NN, CG, G, A, C */
09003      , {      160,     -890,      160,     -310,      160} /* NN, CG, G, A, G */
09004      , {      850,     -980,      60,      850,      60} /* NN, CG, G, A, U */
09005      }
09006      , {{{      1300,     -290,      520,      1300,      520} /* NN, CG, G, C, E */
09007      , {      1300,     -530,      520,      1300,      520} /* NN, CG, G, C, A */
09008      , {      1290,     -290,      510,      1290,      510} /* NN, CG, G, C, C */
09009      , {      1300,     -530,      520,      1300,      520} /* NN, CG, G, C, G */
09010      , {      1250,     -340,      460,      1250,      460} /* NN, CG, G, C, U */
09011      }
09012      , {{{      850,     -980,      720,      850,      720} /* NN, CG, G, G, E */
09013      , {     -120,    -1170,     -120,     -590,     -120} /* NN, CG, G, G, A */
09014      , {      850,     -980,      60,      850,      60} /* NN, CG, G, G, C */
09015      , {      720,    -1580,      720,    -1000,      720} /* NN, CG, G, G, G */
09016      , {      850,     -980,      60,      850,      60} /* NN, CG, G, G, U */
09017      }
09018      , {{{      1350,     -230,      570,      1350,      570} /* NN, CG, G, U, E */
09019      , {      1300,     -530,      520,      1300,      520} /* NN, CG, G, U, A */
09020      , {      1350,     -230,      570,      1350,      570} /* NN, CG, G, U, C */
09021      , {      1300,     -530,      520,      1300,      520} /* NN, CG, G, U, G */
09022      , {     -230,    -1320,     -270,     -230,     -270} /* NN, CG, G, U, U */
09023      }
09024      }
09025      , {{{      590,      570,      590,      570,     -90} /* NN, CG, U, E, E */
09026      , {      390,      370,      390,      370,     -90} /* NN, CG, U, E, A */
09027      , {      440,      420,      440,      420,    -360} /* NN, CG, U, E, C */
09028      , {      590,      570,      590,      570,    -420} /* NN, CG, U, E, G */
09029      , {      330,      310,      330,      310,   -470} /* NN, CG, U, E, U */
09030      }
09031      , {{{      270,      220,      270,      220,   -320} /* NN, CG, U, A, E */
09032      , {      240,      220,      240,      220,   -320} /* NN, CG, U, A, A */
09033      , {     -60,      -80,     -60,      -80,   -830} /* NN, CG, U, A, C */
09034      , {      270,      10,      270,      10,   -780} /* NN, CG, U, A, G */
09035      , {     -60,      -80,     -60,      -80,   -870} /* NN, CG, U, A, U */
09036      }
09037      , {{{      390,      370,      390,      370,     -90} /* NN, CG, U, C, E */
09038      , {      390,      370,      390,      370,     -90} /* NN, CG, U, C, A */
09039      , {      380,      360,      380,      360,   -420} /* NN, CG, U, C, C */

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09040 , { 390, 370, 390, 370, -420} /* NN,CG,U,C,G */
09041 , { 330, 310, 330, 310, -470} /* NN,CG,U,C,U */
09042 }
09043 , {{ 590, 570, 590, 570, -810} /* NN,CG,U,G,E */
09044 , { -10, -270, -10, -270, -810} /* NN,CG,U,G,A */
09045 , { -60, -80, -60, -80, -870} /* NN,CG,U,G,C */
09046 , { 590, 570, 590, 570, -1470} /* NN,CG,U,G,G */
09047 , { -60, -80, -60, -80, -870} /* NN,CG,U,G,U */
09048 }
09049 , {{ 440, 420, 440, 420, -360} /* NN,CG,U,U,E */
09050 , { 390, 370, 390, 370, -420} /* NN,CG,U,U,A */
09051 , { 440, 420, 440, 420, -360} /* NN,CG,U,U,C */
09052 , { 390, 370, 390, 370, -420} /* NN,CG,U,U,G */
09053 , { -400, -420, -400, -420, -1210} /* NN,CG,U,U,U */
09054 }
09055 }
09056 }
09057 , {{{ 1320, 850, 720, 1320, 720} /* NN,GC,E,E,E */
09058 , { 1320, 670, 540, 1320, 540} /* NN,GC,E,E,A */
09059 , { 870, 220, 90, 870, 90} /* NN,GC,E,E,C */
09060 , { 960, 850, 720, 960, 720} /* NN,GC,E,E,G */
09061 , { 870, 250, 90, 870, 90} /* NN,GC,E,E,U */
09062 }
09063 , {{ 1320, 670, 540, 1320, 540} /* NN,GC,E,A,E */
09064 , { 1320, 670, 540, 1320, 540} /* NN,GC,E,A,A */
09065 , { 870, 220, 90, 870, 90} /* NN,GC,E,A,C */
09066 , { -410, -520, -410, -800, -640} /* NN,GC,E,A,G */
09067 , { 870, 220, 90, 870, 90} /* NN,GC,E,A,U */
09068 }
09069 , {{ 960, 300, 170, 960, 170} /* NN,GC,E,C,E */
09070 , { 960, 300, 170, 960, 170} /* NN,GC,E,C,A */
09071 , { 650, 0, -130, 650, -130} /* NN,GC,E,C,C */
09072 , { 960, 300, 170, 960, 170} /* NN,GC,E,C,G */
09073 , { 650, 0, -130, 650, -130} /* NN,GC,E,C,U */
09074 }
09075 , {{ 870, 850, 720, 870, 720} /* NN,GC,E,G,E */
09076 , { 70, -40, 70, -320, -170} /* NN,GC,E,G,A */
09077 , { 870, 220, 90, 870, 90} /* NN,GC,E,G,C */
09078 , { 850, 850, 720, 570, 720} /* NN,GC,E,G,G */
09079 , { 870, 220, 90, 870, 90} /* NN,GC,E,G,U */
09080 }
09081 , {{ 960, 300, 170, 960, 170} /* NN,GC,E,U,E */
09082 , { 960, 300, 170, 960, 170} /* NN,GC,E,U,A */
09083 , { 340, -310, -440, 340, -440} /* NN,GC,E,U,C */
09084 , { 960, 300, 170, 960, 170} /* NN,GC,E,U,G */
09085 , { 250, 250, -90, -260, -110} /* NN,GC,E,U,U */
09086 }
09087 }
09088 , {{{ 850, 850, 720, 540, 720} /* NN,GC,A,E,E */
09089 , { 670, 670, 540, 10, 540} /* NN,GC,A,E,A */
09090 , { 540, 220, 90, 540, 90} /* NN,GC,A,E,C */
09091 , { 850, 850, 720, -970, 720} /* NN,GC,A,E,G */
09092 , { 250, 250, 90, -810, 90} /* NN,GC,A,E,U */
09093 }
09094 , {{ 670, 670, 540, -100, 540} /* NN,GC,A,A,E */
09095 , { 670, 670, 540, -600, 540} /* NN,GC,A,A,A */
09096 , { 220, 220, 90, -100, 90} /* NN,GC,A,A,C */
09097 , { -520, -520, -650, -1790, -650} /* NN,GC,A,A,G */
09098 , { 220, 220, 90, -1050, 90} /* NN,GC,A,A,U */
09099 }
09100 , {{ 540, 300, 170, 540, 170} /* NN,GC,A,C,E */
09101 , { 300, 300, 170, 10, 170} /* NN,GC,A,C,A */
09102 , { 540, 0, -130, 540, -130} /* NN,GC,A,C,C */
09103 , { 300, 300, 170, -970, 170} /* NN,GC,A,C,G */
09104 , { 0, 0, -130, -1030, -130} /* NN,GC,A,C,U */
09105 }
09106 , {{ 850, 850, 720, -1050, 720} /* NN,GC,A,G,E */
09107 , { -40, -40, -170, -1320, -170} /* NN,GC,A,G,A */
09108 , { 220, 220, 90, -1050, 90} /* NN,GC,A,G,C */
09109 , { 850, 850, 720, -1680, 720} /* NN,GC,A,G,G */
09110 , { 220, 220, 90, -1050, 90} /* NN,GC,A,G,U */
09111 }
09112 , {{ 300, 300, 170, -810, 170} /* NN,GC,A,U,E */
09113 , { 300, 300, 170, -970, 170} /* NN,GC,A,U,A */
09114 , { -310, -310, -440, -1340, -440} /* NN,GC,A,U,C */
09115 , { 300, 300, 170, -970, 170} /* NN,GC,A,U,G */
09116 , { 250, 250, -90, -810, -110} /* NN,GC,A,U,U */
09117 }
09118 }
09119 , {{{ 720, 570, 720, 570, 480} /* NN,GC,C,E,E */
09120 , { 540, 390, 540, 390, 300} /* NN,GC,C,E,A */
09121 , { 90, -60, 90, -60, -140} /* NN,GC,C,E,C */
09122 , { 720, 570, 720, 570, 480} /* NN,GC,C,E,G */
09123 , { 90, -60, 90, -60, -140} /* NN,GC,C,E,U */
09124 }
09125 , {{ 540, 390, 540, 390, 300} /* NN,GC,C,A,E */
09126 , { 540, 390, 540, 390, 300} /* NN,GC,C,A,A */
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09127 , { 90, -60, 90, -60, -140} /* NN,GC,C,A,C */
09128 , { -410, -800, -410, -800, -640} /* NN,GC,C,A,G */
09129 , { 90, -60, 90, -60, -140} /* NN,GC,C,A,U */
09130 }
09131 , {{ 170, 20, 170, 20, -60} /* NN,GC,C,C,E */
09132 , { 170, 20, 170, 20, -60} /* NN,GC,C,C,A */
09133 , { -130, -280, -130, -280, -360} /* NN,GC,C,C,C */
09134 , { 170, 20, 170, 20, -60} /* NN,GC,C,C,G */
09135 , { -130, -280, -130, -280, -360} /* NN,GC,C,C,U */
09136 }
09137 , {{ 720, 570, 720, 570, 480} /* NN,GC,C,G,E */
09138 , { 70, -320, 70, -320, -170} /* NN,GC,C,G,A */
09139 , { 90, -60, 90, -60, -140} /* NN,GC,C,G,C */
09140 , { 720, 570, 720, 570, 480} /* NN,GC,C,G,G */
09141 , { 90, -60, 90, -60, -140} /* NN,GC,C,G,U */
09142 }
09143 , {{ 170, 20, 170, 20, -60} /* NN,GC,C,U,E */
09144 , { 170, 20, 170, 20, -60} /* NN,GC,C,U,A */
09145 , { -440, -590, -440, -590, -670} /* NN,GC,C,U,C */
09146 , { 170, 20, 170, 20, -60} /* NN,GC,C,U,G */
09147 , { -110, -260, -110, -260, -350} /* NN,GC,C,U,U */
09148 }
09149 }
09150 , {{{ 1320, -350, 720, 1320, 720} /* NN,GC,G,E,E */
09151 , { 1320, -730, 540, 1320, 540} /* NN,GC,G,E,A */
09152 , { 870, -350, 90, 870, 90} /* NN,GC,G,E,C */
09153 , { 960, -870, 720, 960, 720} /* NN,GC,G,E,G */
09154 , { 870, -940, 90, 870, 90} /* NN,GC,G,E,U */
09155 }
09156 , {{{ 1320, -350, 540, 1320, 540} /* NN,GC,G,A,E */
09157 , { 1320, -730, 540, 1320, 540} /* NN,GC,G,A,A */
09158 , { 870, -350, 90, 870, 90} /* NN,GC,G,A,C */
09159 , { -650, -1920, -650, -1120, -650} /* NN,GC,G,A,G */
09160 , { 870, -960, 90, 870, 90} /* NN,GC,G,A,U */
09161 }
09162 , {{{ 960, -870, 170, 960, 170} /* NN,GC,G,C,E */
09163 , { 960, -1100, 170, 960, 170} /* NN,GC,G,C,A */
09164 , { 650, -940, -130, 650, -130} /* NN,GC,G,C,C */
09165 , { 960, -870, 170, 960, 170} /* NN,GC,G,C,G */
09166 , { 650, -940, -130, 650, -130} /* NN,GC,G,C,U */
09167 }
09168 , {{{ 870, -960, 720, 870, 720} /* NN,GC,G,G,E */
09169 , { -170, -1450, -170, -640, -170} /* NN,GC,G,G,A */
09170 , { 870, -960, 90, 870, 90} /* NN,GC,G,G,C */
09171 , { 720, -1370, 720, -1000, 720} /* NN,GC,G,G,G */
09172 , { 870, -960, 90, 870, 90} /* NN,GC,G,G,U */
09173 }
09174 , {{{ 960, -870, 170, 960, 170} /* NN,GC,G,U,E */
09175 , { 960, -870, 170, 960, 170} /* NN,GC,G,U,A */
09176 , { 340, -1250, -440, 340, -440} /* NN,GC,G,U,C */
09177 , { 960, -870, 170, 960, 170} /* NN,GC,G,U,G */
09178 , { -110, -1360, -110, -580, -110} /* NN,GC,G,U,U */
09179 }
09180 }
09181 , {{{ 590, 570, 590, 570, -160} /* NN,GC,U,E,E */
09182 , { 410, 390, 410, 390, -160} /* NN,GC,U,E,A */
09183 , { -40, -60, -40, -60, -850} /* NN,GC,U,E,C */
09184 , { 590, 570, 590, 570, -230} /* NN,GC,U,E,G */
09185 , { -40, -60, -40, -60, -850} /* NN,GC,U,E,U */
09186 }
09187 , {{{ 410, 390, 410, 390, -160} /* NN,GC,U,A,E */
09188 , { 410, 390, 410, 390, -160} /* NN,GC,U,A,A */
09189 , { -40, -60, -40, -60, -850} /* NN,GC,U,A,C */
09190 , { -540, -800, -540, -800, -1520} /* NN,GC,U,A,G */
09191 , { -40, -60, -40, -60, -850} /* NN,GC,U,A,U */
09192 }
09193 , {{{ 40, 20, 40, 20, -400} /* NN,GC,U,C,E */
09194 , { 40, 20, 40, 20, -400} /* NN,GC,U,C,A */
09195 , { -260, -280, -260, -280, -1070} /* NN,GC,U,C,C */
09196 , { 40, 20, 40, 20, -760} /* NN,GC,U,C,G */
09197 , { -260, -280, -260, -280, -1070} /* NN,GC,U,C,U */
09198 }
09199 , {{{ 590, 570, 590, 570, -230} /* NN,GC,U,G,E */
09200 , { -60, -320, -60, -320, -1110} /* NN,GC,U,G,A */
09201 , { -40, -60, -40, -60, -850} /* NN,GC,U,G,C */
09202 , { 590, 570, 590, 570, -230} /* NN,GC,U,G,G */
09203 , { -40, -60, -40, -60, -850} /* NN,GC,U,G,U */
09204 }
09205 , {{{ 40, 20, 40, 20, -760} /* NN,GC,U,U,E */
09206 , { 40, 20, 40, 20, -760} /* NN,GC,U,U,A */
09207 , { -570, -590, -570, -590, -1380} /* NN,GC,U,U,C */
09208 , { 40, 20, 40, 20, -760} /* NN,GC,U,U,G */
09209 , { -240, -260, -240, -260, -1050} /* NN,GC,U,U,U */
09210 }
09211 }
09212 }
09213 , {{{ 1010, 1010, 880, 730, 880} /* NN,GU,E,E,E */

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09214 , { 410, -30, 40, 410, -190} /* NN, GU, E, E, A */
09215 , { 410, -240, -370, 410, -370} /* NN, GU, E, E, C */
09216 , { 1010, 1010, 880, 730, 880} /* NN, GU, E, E, G */
09217 , { 410, 0, -370, 410, -370} /* NN, GU, E, E, U */
09218 }
09219 , { { 410, -70, -150, 410, -370} /* NN, GU, E, A, E */
09220 , { 230, -70, -550, 230, -550} /* NN, GU, E, A, A */
09221 , { 410, -240, -370, 410, -370} /* NN, GU, E, A, C */
09222 , { -150, -260, -150, -540, -380} /* NN, GU, E, A, G */
09223 , { 410, -240, -370, 410, -370} /* NN, GU, E, A, U */
09224 }
09225 , { { 410, -240, -370, 410, -370} /* NN, GU, E, C, E */
09226 , { 410, -240, -370, 410, -370} /* NN, GU, E, C, A */
09227 , { 410, -240, -370, 410, -370} /* NN, GU, E, C, C */
09228 , { 410, -240, -370, 410, -370} /* NN, GU, E, C, G */
09229 , { 410, -240, -370, 410, -370} /* NN, GU, E, C, U */
09230 }
09231 , { { 1010, 1010, 880, 730, 880} /* NN, GU, E, G, E */
09232 , { 40, -30, 40, -350, -190} /* NN, GU, E, G, A */
09233 , { 410, -240, -370, 410, -370} /* NN, GU, E, G, C */
09234 , { 1010, 1010, 880, 730, 880} /* NN, GU, E, G, G */
09235 , { 410, -240, -370, 410, -370} /* NN, GU, E, G, U */
09236 }
09237 , { { 410, 0, -370, 410, -370} /* NN, GU, E, U, E */
09238 , { 410, -240, -370, 410, -370} /* NN, GU, E, U, A */
09239 , { 410, -240, -370, 410, -370} /* NN, GU, E, U, C */
09240 , { 410, -240, -370, 410, -370} /* NN, GU, E, U, G */
09241 , { 0, 0, -370, -520, -370} /* NN, GU, E, U, U */
09242 }
09243 }
09244 , { { { 1010, 1010, 880, -1280, 880} /* NN, GU, A, E, E */
09245 , { -30, -30, -200, -1340, -200} /* NN, GU, A, E, A */
09246 , { -240, -240, -370, -1280, -370} /* NN, GU, A, E, C */
09247 , { 1010, 1010, 880, -1520, 880} /* NN, GU, A, E, G */
09248 , { 0, 0, -370, -1280, -370} /* NN, GU, A, E, U */
09249 }
09250 , { { -70, -70, -370, -1520, -370} /* NN, GU, A, A, E */
09251 , { -70, -70, -550, -1700, -550} /* NN, GU, A, A, A */
09252 , { -240, -240, -370, -1520, -370} /* NN, GU, A, A, C */
09253 , { -260, -260, -390, -1530, -390} /* NN, GU, A, A, G */
09254 , { -240, -240, -370, -1520, -370} /* NN, GU, A, A, U */
09255 }
09256 , { { -240, -240, -370, -1280, -370} /* NN, GU, A, C, E */
09257 , { -240, -240, -370, -1520, -370} /* NN, GU, A, C, A */
09258 , { -240, -240, -370, -1280, -370} /* NN, GU, A, C, C */
09259 , { -240, -240, -370, -1520, -370} /* NN, GU, A, C, G */
09260 , { -240, -240, -370, -1280, -370} /* NN, GU, A, C, U */
09261 }
09262 , { { 1010, 1010, 880, -1340, 880} /* NN, GU, A, G, E */
09263 , { -30, -30, -200, -1340, -200} /* NN, GU, A, G, A */
09264 , { -240, -240, -370, -1520, -370} /* NN, GU, A, G, C */
09265 , { 1010, 1010, 880, -1520, 880} /* NN, GU, A, G, G */
09266 , { -240, -240, -370, -1520, -370} /* NN, GU, A, G, U */
09267 }
09268 , { { 0, 0, -370, -1280, -370} /* NN, GU, A, U, E */
09269 , { -240, -240, -370, -1520, -370} /* NN, GU, A, U, A */
09270 , { -240, -240, -370, -1280, -370} /* NN, GU, A, U, C */
09271 , { -240, -240, -370, -1520, -370} /* NN, GU, A, U, G */
09272 , { 0, 0, -370, -1520, -370} /* NN, GU, A, U, U */
09273 }
09274 }
09275 , { { { 880, 730, 880, 730, 640} /* NN, GU, C, E, E */
09276 , { 40, -350, 40, -350, -190} /* NN, GU, C, E, A */
09277 , { -370, -520, -370, -520, -610} /* NN, GU, C, E, C */
09278 , { 880, 730, 880, 730, 640} /* NN, GU, C, E, G */
09279 , { -370, -520, -370, -520, -610} /* NN, GU, C, E, U */
09280 }
09281 , { { -150, -520, -150, -520, -380} /* NN, GU, C, A, E */
09282 , { -550, -700, -550, -700, -790} /* NN, GU, C, A, A */
09283 , { -370, -520, -370, -520, -610} /* NN, GU, C, A, C */
09284 , { -150, -540, -150, -540, -380} /* NN, GU, C, A, G */
09285 , { -370, -520, -370, -520, -610} /* NN, GU, C, A, U */
09286 }
09287 , { { -370, -520, -370, -520, -610} /* NN, GU, C, C, E */
09288 , { -370, -520, -370, -520, -610} /* NN, GU, C, C, A */
09289 , { -370, -520, -370, -520, -610} /* NN, GU, C, C, C */
09290 , { -370, -520, -370, -520, -610} /* NN, GU, C, C, G */
09291 , { -370, -520, -370, -520, -610} /* NN, GU, C, C, U */
09292 }
09293 , { { 880, 730, 880, 730, 640} /* NN, GU, C, G, E */
09294 , { 40, -350, 40, -350, -190} /* NN, GU, C, G, A */
09295 , { -370, -520, -370, -520, -610} /* NN, GU, C, G, C */
09296 , { 880, 730, 880, 730, 640} /* NN, GU, C, G, G */
09297 , { -370, -520, -370, -520, -610} /* NN, GU, C, G, U */
09298 }
09299 , { { -370, -520, -370, -520, -610} /* NN, GU, C, U, E */
09300 , { -370, -520, -370, -520, -610} /* NN, GU, C, U, A */
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09301      , { -370, -520, -370, -520, -610} /* NN, GU, C, U, C */
09302      , { -370, -520, -370, -520, -610} /* NN, GU, C, U, G */
09303      , { -370, -520, -370, -520, -610} /* NN, GU, C, U, U */
09304      }
09305      }
09306      , { { 880, -1180, 880, 410, 880} /* NN, GU, G, E, E */
09307      , { 410, -1250, -200, 410, -200} /* NN, GU, G, E, A */
09308      , { 410, -1180, -370, 410, -370} /* NN, GU, G, E, C */
09309      , { 880, -1420, 880, 410, 880} /* NN, GU, G, E, G */
09310      , { 410, -1180, -370, 410, -370} /* NN, GU, G, E, U */
09311      }
09312      , { { 410, -1420, -370, 410, -370} /* NN, GU, G, A, E */
09313      , { 230, -1600, -550, 230, -550} /* NN, GU, G, A, A */
09314      , { 410, -1420, -370, 410, -370} /* NN, GU, G, A, C */
09315      , { -390, -1440, -390, -860, -390} /* NN, GU, G, A, G */
09316      , { 410, -1420, -370, 410, -370} /* NN, GU, G, A, U */
09317      }
09318      , { { 410, -1180, -370, 410, -370} /* NN, GU, G, C, E */
09319      , { 410, -1420, -370, 410, -370} /* NN, GU, G, C, A */
09320      , { 410, -1180, -370, 410, -370} /* NN, GU, G, C, C */
09321      , { 410, -1420, -370, 410, -370} /* NN, GU, G, C, G */
09322      , { 410, -1180, -370, 410, -370} /* NN, GU, G, C, U */
09323      }
09324      , { { 880, -1250, 880, 410, 880} /* NN, GU, G, G, E */
09325      , { -200, -1250, -200, -670, -200} /* NN, GU, G, G, A */
09326      , { 410, -1420, -370, 410, -370} /* NN, GU, G, G, C */
09327      , { 880, -1420, 880, -840, 880} /* NN, GU, G, G, G */
09328      , { 410, -1420, -370, 410, -370} /* NN, GU, G, G, U */
09329      }
09330      , { { 410, -1180, -370, 410, -370} /* NN, GU, G, U, E */
09331      , { 410, -1420, -370, 410, -370} /* NN, GU, G, U, A */
09332      , { 410, -1180, -370, 410, -370} /* NN, GU, G, U, C */
09333      , { 410, -1420, -370, 410, -370} /* NN, GU, G, U, G */
09334      , { -370, -1420, -370, -840, -370} /* NN, GU, G, U, U */
09335      }
09336      }
09337      , { { { 750, 730, 750, 730, -1140} /* NN, GU, U, E, E */
09338      , { -90, -350, -90, -350, -1140} /* NN, GU, U, E, A */
09339      , { -500, -520, -500, -520, -1310} /* NN, GU, U, E, C */
09340      , { 750, 730, 750, 730, -1310} /* NN, GU, U, E, G */
09341      , { -500, -520, -500, -520, -1310} /* NN, GU, U, E, U */
09342      }
09343      , { { -280, -520, -280, -520, -1250} /* NN, GU, U, A, E */
09344      , { -680, -700, -680, -700, -1250} /* NN, GU, U, A, A */
09345      , { -500, -520, -500, -520, -1310} /* NN, GU, U, A, C */
09346      , { -280, -540, -280, -540, -1330} /* NN, GU, U, A, G */
09347      , { -500, -520, -500, -520, -1310} /* NN, GU, U, A, U */
09348      }
09349      , { { -500, -520, -500, -520, -1310} /* NN, GU, U, C, E */
09350      , { -500, -520, -500, -520, -1310} /* NN, GU, U, C, A */
09351      , { -500, -520, -500, -520, -1310} /* NN, GU, U, C, C */
09352      , { -500, -520, -500, -520, -1310} /* NN, GU, U, C, G */
09353      , { -500, -520, -500, -520, -1310} /* NN, GU, U, C, U */
09354      }
09355      , { { 750, 730, 750, 730, -1140} /* NN, GU, U, G, E */
09356      , { -90, -350, -90, -350, -1140} /* NN, GU, U, G, A */
09357      , { -500, -520, -500, -520, -1310} /* NN, GU, U, G, C */
09358      , { 750, 730, 750, 730, -1310} /* NN, GU, U, G, G */
09359      , { -500, -520, -500, -520, -1310} /* NN, GU, U, G, U */
09360      }
09361      , { { -500, -520, -500, -520, -1310} /* NN, GU, U, U, E */
09362      , { -500, -520, -500, -520, -1310} /* NN, GU, U, U, A */
09363      , { -500, -520, -500, -520, -1310} /* NN, GU, U, U, C */
09364      , { -500, -520, -500, -520, -1310} /* NN, GU, U, U, G */
09365      , { -500, -520, -500, -520, -1310} /* NN, GU, U, U, U */
09366      }
09367      }
09368      }
09369      , { { { { 1560, 1560, 1430, 1470, 1430} /* NN, UG, E, E, E */
09370      , { 1470, 820, 690, 1470, 690} /* NN, UG, E, E, A */
09371      , { 960, 310, 180, 960, 180} /* NN, UG, E, E, C */
09372      , { 1560, 1560, 1430, 1280, 1430} /* NN, UG, E, E, G */
09373      , { 960, 550, 180, 960, 180} /* NN, UG, E, E, U */
09374      }
09375      , { { 1470, 820, 690, 1470, 690} /* NN, UG, E, A, E */
09376      , { 1470, 820, 690, 1470, 690} /* NN, UG, E, A, A */
09377      , { 960, 310, 180, 960, 180} /* NN, UG, E, A, C */
09378      , { 80, -30, 80, -310, -150} /* NN, UG, E, A, G */
09379      , { 960, 310, 180, 960, 180} /* NN, UG, E, A, U */
09380      }
09381      , { { 960, 310, 180, 960, 180} /* NN, UG, E, C, E */
09382      , { 960, 310, 180, 960, 180} /* NN, UG, E, C, A */
09383      , { 960, 310, 180, 960, 180} /* NN, UG, E, C, C */
09384      , { 960, 310, 180, 960, 180} /* NN, UG, E, C, G */
09385      , { 960, 310, 180, 960, 180} /* NN, UG, E, C, U */
09386      }
09387      , { { 1560, 1560, 1430, 1280, 1430} /* NN, UG, E, G, E */

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09388 , { -90, -200, -90, -480, -320} /* NN,UG,E,G,A */
09389 , { 960, 310, 180, 960, 180} /* NN,UG,E,G,C */
09390 , { 1560, 1560, 1430, 1280, 1430} /* NN,UG,E,G,G */
09391 , { 960, 310, 180, 960, 180} /* NN,UG,E,G,U */
09392 }
09393 , { { 960, 550, 180, 960, 180} /* NN,UG,E,U,E */
09394 , { 960, 310, 180, 960, 180} /* NN,UG,E,U,A */
09395 , { 960, 310, 180, 960, 180} /* NN,UG,E,U,C */
09396 , { 960, 310, 180, 960, 180} /* NN,UG,E,U,G */
09397 , { 550, 550, 180, 30, 180} /* NN,UG,E,U,U */
09398 }
09399 }
09400 , { { { 1560, 1560, 1430, -30, 1430} /* NN,UG,A,E,E */
09401 , { 820, 820, 690, -30, 690} /* NN,UG,A,E,A */
09402 , { 310, 310, 180, -720, 180} /* NN,UG,A,E,C */
09403 , { 1560, 1560, 1430, -960, 1430} /* NN,UG,A,E,G */
09404 , { 550, 550, 180, -720, 180} /* NN,UG,A,E,U */
09405 }
09406 , { { 820, 820, 690, -30, 690} /* NN,UG,A,A,E */
09407 , { 820, 820, 690, -30, 690} /* NN,UG,A,A,A */
09408 , { 310, 310, 180, -960, 180} /* NN,UG,A,A,C */
09409 , { -30, -30, -160, -1300, -160} /* NN,UG,A,A,G */
09410 , { 310, 310, 180, -960, 180} /* NN,UG,A,A,U */
09411 }
09412 , { { 310, 310, 180, -720, 180} /* NN,UG,A,C,E */
09413 , { 310, 310, 180, -960, 180} /* NN,UG,A,C,A */
09414 , { 310, 310, 180, -720, 180} /* NN,UG,A,C,C */
09415 , { 310, 310, 180, -960, 180} /* NN,UG,A,C,G */
09416 , { 310, 310, 180, -720, 180} /* NN,UG,A,C,U */
09417 }
09418 , { { 1560, 1560, 1430, -960, 1430} /* NN,UG,A,G,E */
09419 , { -200, -200, -330, -1470, -330} /* NN,UG,A,G,A */
09420 , { 310, 310, 180, -960, 180} /* NN,UG,A,G,C */
09421 , { 1560, 1560, 1430, -960, 1430} /* NN,UG,A,G,G */
09422 , { 310, 310, 180, -960, 180} /* NN,UG,A,G,U */
09423 }
09424 , { { 550, 550, 180, -720, 180} /* NN,UG,A,U,E */
09425 , { 310, 310, 180, -960, 180} /* NN,UG,A,U,A */
09426 , { 310, 310, 180, -720, 180} /* NN,UG,A,U,C */
09427 , { 310, 310, 180, -960, 180} /* NN,UG,A,U,G */
09428 , { 550, 550, 180, -960, 180} /* NN,UG,A,U,U */
09429 }
09430 }
09431 , { { { 1430, 1280, 1430, 1280, 1200} /* NN,UG,C,E,E */
09432 , { 690, 540, 690, 540, 450} /* NN,UG,C,E,A */
09433 , { 180, 30, 180, 30, -50} /* NN,UG,C,E,C */
09434 , { 1430, 1280, 1430, 1280, 1200} /* NN,UG,C,E,G */
09435 , { 180, 30, 180, 30, -50} /* NN,UG,C,E,U */
09436 }
09437 , { { 690, 540, 690, 540, 450} /* NN,UG,C,A,E */
09438 , { 690, 540, 690, 540, 450} /* NN,UG,C,A,A */
09439 , { 180, 30, 180, 30, -50} /* NN,UG,C,A,C */
09440 , { 80, -310, 80, -310, -150} /* NN,UG,C,A,G */
09441 , { 180, 30, 180, 30, -50} /* NN,UG,C,A,U */
09442 }
09443 , { { 180, 30, 180, 30, -50} /* NN,UG,C,C,E */
09444 , { 180, 30, 180, 30, -50} /* NN,UG,C,C,A */
09445 , { 180, 30, 180, 30, -50} /* NN,UG,C,C,C */
09446 , { 180, 30, 180, 30, -50} /* NN,UG,C,C,G */
09447 , { 180, 30, 180, 30, -50} /* NN,UG,C,C,U */
09448 }
09449 , { { { 1430, 1280, 1430, 1280, 1200} /* NN,UG,C,G,E */
09450 , { -90, -480, -90, -480, -320} /* NN,UG,C,G,A */
09451 , { 180, 30, 180, 30, -50} /* NN,UG,C,G,C */
09452 , { 1430, 1280, 1430, 1280, 1200} /* NN,UG,C,G,G */
09453 , { 180, 30, 180, 30, -50} /* NN,UG,C,G,U */
09454 }
09455 , { { 180, 30, 180, 30, -50} /* NN,UG,C,U,E */
09456 , { 180, 30, 180, 30, -50} /* NN,UG,C,U,A */
09457 , { 180, 30, 180, 30, -50} /* NN,UG,C,U,C */
09458 , { 180, 30, 180, 30, -50} /* NN,UG,C,U,G */
09459 , { 180, 30, 180, 30, -50} /* NN,UG,C,U,U */
09460 }
09461 }
09462 , { { { 1470, -360, 1430, 1470, 1430} /* NN,UG,G,E,E */
09463 , { 1470, -360, 690, 1470, 690} /* NN,UG,G,E,A */
09464 , { 960, -630, 180, 960, 180} /* NN,UG,G,E,C */
09465 , { 1430, -870, 1430, 960, 1430} /* NN,UG,G,E,G */
09466 , { 960, -630, 180, 960, 180} /* NN,UG,G,E,U */
09467 }
09468 , { { 1470, -360, 690, 1470, 690} /* NN,UG,G,A,E */
09469 , { 1470, -360, 690, 1470, 690} /* NN,UG,G,A,A */
09470 , { 960, -870, 180, 960, 180} /* NN,UG,G,A,C */
09471 , { -160, -1210, -160, -630, -160} /* NN,UG,G,A,G */
09472 , { 960, -870, 180, 960, 180} /* NN,UG,G,A,U */
09473 }
09474 , { { 960, -630, 180, 960, 180} /* NN,UG,G,C,E */
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09475 , { 960, -870, 180, 960, 180} /* NN,UG,G,C,A */
09476 , { 960, -630, 180, 960, 180} /* NN,UG,G,C,C */
09477 , { 960, -870, 180, 960, 180} /* NN,UG,G,C,G */
09478 , { 960, -630, 180, 960, 180} /* NN,UG,G,C,U */
09479 }
09480 , {{ 1430, -870, 1430, 960, 1430} /* NN,UG,G,G,E */
09481 , { -330, -1380, -330, -800, -330} /* NN,UG,G,G,A */
09482 , { 960, -870, 180, 960, 180} /* NN,UG,G,G,C */
09483 , { 1430, -870, 1430, -290, 1430} /* NN,UG,G,G,G */
09484 , { 960, -870, 180, 960, 180} /* NN,UG,G,G,U */
09485 }
09486 , {{ 960, -630, 180, 960, 180} /* NN,UG,G,U,E */
09487 , { 960, -870, 180, 960, 180} /* NN,UG,G,U,A */
09488 , { 960, -630, 180, 960, 180} /* NN,UG,G,U,C */
09489 , { 960, -870, 180, 960, 180} /* NN,UG,G,U,G */
09490 , { 180, -870, 180, -290, 180} /* NN,UG,G,U,U */
09491 }
09492 }
09493 , {{{ 1300, 1280, 1300, 1280, -10} /* NN,UG,U,E,E */
09494 , { 560, 540, 560, 540, -10} /* NN,UG,U,E,A */
09495 , { 50, 30, 50, 30, -760} /* NN,UG,U,E,C */
09496 , { 1300, 1280, 1300, 1280, -760} /* NN,UG,U,E,G */
09497 , { 50, 30, 50, 30, -760} /* NN,UG,U,E,U */
09498 }
09499 , {{ 560, 540, 560, 540, -10} /* NN,UG,U,A,E */
09500 , { 560, 540, 560, 540, -10} /* NN,UG,U,A,A */
09501 , { 50, 30, 50, 30, -760} /* NN,UG,U,A,C */
09502 , { -50, -310, -50, -310, -1100} /* NN,UG,U,A,G */
09503 , { 50, 30, 50, 30, -760} /* NN,UG,U,A,U */
09504 }
09505 , {{ 50, 30, 50, 30, -760} /* NN,UG,U,C,E */
09506 , { 50, 30, 50, 30, -760} /* NN,UG,U,C,A */
09507 , { 50, 30, 50, 30, -760} /* NN,UG,U,C,C */
09508 , { 50, 30, 50, 30, -760} /* NN,UG,U,C,G */
09509 , { 50, 30, 50, 30, -760} /* NN,UG,U,C,U */
09510 }
09511 , {{ 1300, 1280, 1300, 1280, -760} /* NN,UG,U,G,E */
09512 , { -220, -480, -220, -480, -1270} /* NN,UG,U,G,A */
09513 , { 50, 30, 50, 30, -760} /* NN,UG,U,G,C */
09514 , { 1300, 1280, 1300, 1280, -760} /* NN,UG,U,G,G */
09515 , { 50, 30, 50, 30, -760} /* NN,UG,U,G,U */
09516 }
09517 , {{ 50, 30, 50, 30, -760} /* NN,UG,U,U,E */
09518 , { 50, 30, 50, 30, -760} /* NN,UG,U,U,A */
09519 , { 50, 30, 50, 30, -760} /* NN,UG,U,U,C */
09520 , { 50, 30, 50, 30, -760} /* NN,UG,U,U,G */
09521 , { 50, 30, 50, 30, -760} /* NN,UG,U,U,U */
09522 }
09523 }
09524 }
09525 , {{{ 2050, 1930, 1800, 2050, 1800} /* NN,AU,E,E,E */
09526 , { 2050, 1400, 1270, 2050, 1270} /* NN,AU,E,E,A */
09527 , { 1750, 1100, 970, 1750, 970} /* NN,AU,E,E,C */
09528 , { 1930, 1930, 1800, 1760, 1800} /* NN,AU,E,E,G */
09529 , { 1750, 1100, 970, 1750, 970} /* NN,AU,E,E,U */
09530 }
09531 , {{ 2050, 1400, 1270, 2050, 1270} /* NN,AU,E,A,E */
09532 , { 2050, 1400, 1270, 2050, 1270} /* NN,AU,E,A,A */
09533 , { 1740, 1090, 960, 1740, 960} /* NN,AU,E,A,C */
09534 , { 130, 10, 130, -260, -110} /* NN,AU,E,A,G */
09535 , { 1740, 1090, 960, 1740, 960} /* NN,AU,E,A,U */
09536 }
09537 , {{ 1760, 1110, 980, 1760, 980} /* NN,AU,E,C,E */
09538 , { 1760, 1110, 980, 1760, 980} /* NN,AU,E,C,A */
09539 , { 1750, 1100, 970, 1750, 970} /* NN,AU,E,C,C */
09540 , { 1760, 1110, 980, 1760, 980} /* NN,AU,E,C,G */
09541 , { 1750, 1100, 970, 1750, 970} /* NN,AU,E,C,U */
09542 }
09543 , {{ 1930, 1930, 1800, 1740, 1800} /* NN,AU,E,G,E */
09544 , { 300, 190, 300, -80, 70} /* NN,AU,E,G,A */
09545 , { 1740, 1090, 960, 1740, 960} /* NN,AU,E,G,C */
09546 , { 1930, 1930, 1800, 1650, 1800} /* NN,AU,E,G,G */
09547 , { 1740, 1090, 960, 1740, 960} /* NN,AU,E,G,U */
09548 }
09549 , {{ 1760, 1110, 980, 1760, 980} /* NN,AU,E,U,E */
09550 , { 1760, 1110, 980, 1760, 980} /* NN,AU,E,U,A */
09551 , { 1750, 1100, 970, 1750, 970} /* NN,AU,E,U,C */
09552 , { 1760, 1110, 980, 1760, 980} /* NN,AU,E,U,G */
09553 , { 360, 360, 0, -150, 0} /* NN,AU,E,U,U */
09554 }
09555 }
09556 , {{{ 1930, 1930, 1800, 130, 1800} /* NN,AU,A,E,E */
09557 , { 1400, 1400, 1270, 130, 1270} /* NN,AU,A,E,A */
09558 , { 1100, 1100, 970, 70, 970} /* NN,AU,A,E,C */
09559 , { 1930, 1930, 1800, -160, 1800} /* NN,AU,A,E,G */
09560 , { 1100, 1100, 970, 70, 970} /* NN,AU,A,E,U */
09561 }

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09562 ,{{ 1400, 1400, 1270, 130, 1270} /* NN,AU,A,A,E */
09563 ,{ 1400, 1400, 1270, 130, 1270} /* NN,AU,A,A,A */
09564 ,{ 1090, 1090, 960, -180, 960} /* NN,AU,A,A,C */
09565 ,{ 10, 10, -110, -1260, -110} /* NN,AU,A,A,G */
09566 ,{ 1090, 1090, 960, -180, 960} /* NN,AU,A,A,U */
09567 }
09568 ,{{ 1110, 1110, 980, 70, 980} /* NN,AU,A,C,E */
09569 ,{ 1110, 1110, 980, -160, 980} /* NN,AU,A,C,A */
09570 ,{ 1100, 1100, 970, 70, 970} /* NN,AU,A,C,C */
09571 ,{ 1110, 1110, 980, -160, 980} /* NN,AU,A,C,G */
09572 ,{ 1100, 1100, 970, 70, 970} /* NN,AU,A,C,U */
09573 }
09574 ,{{ 1930, 1930, 1800, -180, 1800} /* NN,AU,A,G,E */
09575 ,{ 190, 190, 60, -1080, 60} /* NN,AU,A,G,A */
09576 ,{ 1090, 1090, 960, -180, 960} /* NN,AU,A,G,C */
09577 ,{ 1930, 1930, 1800, -590, 1800} /* NN,AU,A,G,G */
09578 ,{ 1090, 1090, 960, -180, 960} /* NN,AU,A,G,U */
09579 }
09580 ,{{ 1110, 1110, 980, 70, 980} /* NN,AU,A,U,E */
09581 ,{ 1110, 1110, 980, -160, 980} /* NN,AU,A,U,A */
09582 ,{ 1100, 1100, 970, 70, 970} /* NN,AU,A,U,C */
09583 ,{ 1110, 1110, 980, -160, 980} /* NN,AU,A,U,G */
09584 ,{ 360, 360, 0, -1150, 0} /* NN,AU,A,U,U */
09585 }
09586 }
09587 ,{{{ 1800, 1650, 1800, 1650, 1570} /* NN,AU,C,E,E */
09588 ,{ 1270, 1120, 1270, 1120, 1040} /* NN,AU,C,E,A */
09589 ,{ 970, 820, 970, 820, 740} /* NN,AU,C,E,C */
09590 ,{ 1800, 1650, 1800, 1650, 1570} /* NN,AU,C,E,G */
09591 ,{ 970, 820, 970, 820, 740} /* NN,AU,C,E,U */
09592 }
09593 ,{{ 1270, 1120, 1270, 1120, 1040} /* NN,AU,C,A,E */
09594 ,{ 1270, 1120, 1270, 1120, 1040} /* NN,AU,C,A,A */
09595 ,{ 960, 810, 960, 810, 730} /* NN,AU,C,A,C */
09596 ,{ 130, -260, 130, -260, -110} /* NN,AU,C,A,G */
09597 ,{ 960, 810, 960, 810, 730} /* NN,AU,C,A,U */
09598 }
09599 ,{{ 980, 830, 980, 830, 740} /* NN,AU,C,C,E */
09600 ,{ 980, 830, 980, 830, 740} /* NN,AU,C,C,A */
09601 ,{ 970, 820, 970, 820, 740} /* NN,AU,C,C,C */
09602 ,{ 980, 830, 980, 830, 740} /* NN,AU,C,C,G */
09603 ,{ 970, 820, 970, 820, 740} /* NN,AU,C,C,U */
09604 }
09605 ,{{ 1800, 1650, 1800, 1650, 1570} /* NN,AU,C,G,E */
09606 ,{ 300, -80, 300, -80, 70} /* NN,AU,C,G,A */
09607 ,{ 960, 810, 960, 810, 730} /* NN,AU,C,G,C */
09608 ,{ 1800, 1650, 1800, 1650, 1570} /* NN,AU,C,G,G */
09609 ,{ 960, 810, 960, 810, 730} /* NN,AU,C,G,U */
09610 }
09611 ,{{ 980, 830, 980, 830, 740} /* NN,AU,C,U,E */
09612 ,{ 980, 830, 980, 830, 740} /* NN,AU,C,U,A */
09613 ,{ 970, 820, 970, 820, 740} /* NN,AU,C,U,C */
09614 ,{ 980, 830, 980, 830, 740} /* NN,AU,C,U,G */
09615 ,{ 0, -150, 0, -150, -240} /* NN,AU,C,U,U */
09616 }
09617 }
09618 ,{{{ 2050, 220, 1800, 2050, 1800} /* NN,AU,G,E,E */
09619 ,{ 2050, 220, 1270, 2050, 1270} /* NN,AU,G,E,A */
09620 ,{ 1750, 170, 970, 1750, 970} /* NN,AU,G,E,C */
09621 ,{ 1800, -70, 1800, 1760, 1800} /* NN,AU,G,E,G */
09622 ,{ 1750, 170, 970, 1750, 970} /* NN,AU,G,E,U */
09623 }
09624 ,{{ 2050, 220, 1270, 2050, 1270} /* NN,AU,G,A,E */
09625 ,{ 2050, 220, 1270, 2050, 1270} /* NN,AU,G,A,A */
09626 ,{ 1740, -80, 960, 1740, 960} /* NN,AU,G,A,C */
09627 ,{ -110, -1160, -110, -580, -110} /* NN,AU,G,A,G */
09628 ,{ 1740, -80, 960, 1740, 960} /* NN,AU,G,A,U */
09629 }
09630 ,{{ 1760, 170, 980, 1760, 980} /* NN,AU,G,C,E */
09631 ,{ 1760, -70, 980, 1760, 980} /* NN,AU,G,C,A */
09632 ,{ 1750, 170, 970, 1750, 970} /* NN,AU,G,C,C */
09633 ,{ 1760, -70, 980, 1760, 980} /* NN,AU,G,C,G */
09634 ,{ 1750, 170, 970, 1750, 970} /* NN,AU,G,C,U */
09635 }
09636 ,{{ 1800, -80, 1800, 1740, 1800} /* NN,AU,G,G,E */
09637 ,{ 60, -980, 60, -400, 60} /* NN,AU,G,G,A */
09638 ,{ 1740, -80, 960, 1740, 960} /* NN,AU,G,G,C */
09639 ,{ 1800, -490, 1800, 80, 1800} /* NN,AU,G,G,G */
09640 ,{ 1740, -80, 960, 1740, 960} /* NN,AU,G,G,U */
09641 }
09642 ,{{ 1760, 170, 980, 1760, 980} /* NN,AU,G,U,E */
09643 ,{ 1760, -70, 980, 1760, 980} /* NN,AU,G,U,A */
09644 ,{ 1750, 170, 970, 1750, 970} /* NN,AU,G,U,C */
09645 ,{ 1760, -70, 980, 1760, 980} /* NN,AU,G,U,G */
09646 ,{ 0, -1050, 0, -470, 0} /* NN,AU,G,U,U */
09647 }
09648 }
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09649 ,{{{ 1670, 1650, 1670, 1650, 570} /* NN,AU,U,E,E */
09650 ,{ 1140, 1120, 1140, 1120, 570} /* NN,AU,U,A,A */
09651 ,{ 840, 820, 840, 820, 30} /* NN,AU,U,E,C */
09652 ,{ 1670, 1650, 1670, 1650, 40} /* NN,AU,U,E,G */
09653 ,{ 840, 820, 840, 820, 30} /* NN,AU,U,E,U */
09654 }
09655 ,{{{ 1140, 1120, 1140, 1120, 570} /* NN,AU,U,A,E */
09656 ,{ 1140, 1120, 1140, 1120, 570} /* NN,AU,U,A,A */
09657 ,{ 830, 810, 830, 810, 20} /* NN,AU,U,A,C */
09658 ,{ 0, -260, 0, -260, -1050} /* NN,AU,U,A,G */
09659 ,{ 830, 810, 830, 810, 20} /* NN,AU,U,A,U */
09660 }
09661 ,{{{ 850, 830, 850, 830, 40} /* NN,AU,U,C,E */
09662 ,{ 850, 830, 850, 830, 40} /* NN,AU,U,C,A */
09663 ,{ 840, 820, 840, 820, 30} /* NN,AU,U,C,C */
09664 ,{ 850, 830, 850, 830, 40} /* NN,AU,U,C,G */
09665 ,{ 840, 820, 840, 820, 30} /* NN,AU,U,C,U */
09666 }
09667 ,{{{ 1670, 1650, 1670, 1650, 20} /* NN,AU,U,G,E */
09668 ,{ 180, -80, 180, -80, -870} /* NN,AU,U,G,A */
09669 ,{ 830, 810, 830, 810, 20} /* NN,AU,U,G,C */
09670 ,{ 1670, 1650, 1670, 1650, -380} /* NN,AU,U,G,G */
09671 ,{ 830, 810, 830, 810, 20} /* NN,AU,U,G,U */
09672 }
09673 ,{{{ 850, 830, 850, 830, 40} /* NN,AU,U,U,E */
09674 ,{ 850, 830, 850, 830, 40} /* NN,AU,U,U,A */
09675 ,{ 840, 820, 840, 820, 30} /* NN,AU,U,U,C */
09676 ,{ 850, 830, 850, 830, 40} /* NN,AU,U,U,G */
09677 ,{ -130, -150, -130, -150, -940} /* NN,AU,U,U,U */
09678 }
09679 }
09680
09681 ,{{{ 2120, 2120, 1990, 2120, 1990} /* NN,UA,E,E,E */
09682 ,{ 2120, 1470, 1340, 2120, 1340} /* NN,UA,E,E,A */
09683 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,UA,E,E,C */
09684 ,{ 2120, 2120, 1990, 1990, 1990} /* NN,UA,E,E,G */
09685 ,{ 1860, 1210, 1080, 1860, 1080} /* NN,UA,E,E,U */
09686 }
09687 ,{{{ 2120, 1470, 1340, 2120, 1340} /* NN,UA,E,A,E */
09688 ,{ 2120, 1470, 1340, 2120, 1340} /* NN,UA,E,A,A */
09689 ,{ 1840, 1190, 1060, 1840, 1060} /* NN,UA,E,A,C */
09690 ,{ 180, 60, 180, -210, -60} /* NN,UA,E,A,G */
09691 ,{ 1840, 1190, 1060, 1840, 1060} /* NN,UA,E,A,U */
09692 }
09693 ,{{{ 1990, 1340, 1210, 1990, 1210} /* NN,UA,E,C,E */
09694 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,UA,E,C,A */
09695 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,UA,E,C,C */
09696 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,UA,E,C,G */
09697 ,{ 1860, 1210, 1080, 1860, 1080} /* NN,UA,E,C,U */
09698 }
09699 ,{{{ 2120, 2120, 1990, 1840, 1990} /* NN,UA,E,G,E */
09700 ,{ -120, -230, -120, -510, -360} /* NN,UA,E,G,A */
09701 ,{ 1840, 1190, 1060, 1840, 1060} /* NN,UA,E,G,C */
09702 ,{ 2120, 2120, 1990, 1840, 1990} /* NN,UA,E,G,G */
09703 ,{ 1840, 1190, 1060, 1840, 1060} /* NN,UA,E,G,U */
09704 }
09705 ,{{{ 1990, 1340, 1210, 1990, 1210} /* NN,UA,E,U,E */
09706 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,UA,E,U,A */
09707 ,{ 1550, 900, 770, 1550, 770} /* NN,UA,E,U,C */
09708 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,UA,E,U,G */
09709 ,{ 640, 640, 270, 120, 270} /* NN,UA,E,U,U */
09710 }
09711 }
09712 ,{{{ 2120, 2120, 1990, 300, 1990} /* NN,UA,A,E,E */
09713 ,{ 1470, 1470, 1340, 190, 1340} /* NN,UA,A,E,A */
09714 ,{ 1340, 1340, 1210, 300, 1210} /* NN,UA,A,E,C */
09715 ,{ 2120, 2120, 1990, 60, 1990} /* NN,UA,A,E,G */
09716 ,{ 1210, 1210, 1080, 180, 1080} /* NN,UA,A,E,U */
09717 }
09718 ,{{{ 1470, 1470, 1340, 190, 1340} /* NN,UA,A,A,E */
09719 ,{ 1470, 1470, 1340, 190, 1340} /* NN,UA,A,A,A */
09720 ,{ 1190, 1190, 1060, -80, 1060} /* NN,UA,A,A,C */
09721 ,{ 60, 60, -60, -1210, -60} /* NN,UA,A,A,G */
09722 ,{ 1190, 1190, 1060, -80, 1060} /* NN,UA,A,A,U */
09723 }
09724 ,{{{ 1340, 1340, 1210, 300, 1210} /* NN,UA,A,C,E */
09725 ,{ 1340, 1340, 1210, 60, 1210} /* NN,UA,A,C,A */
09726 ,{ 1340, 1340, 1210, 300, 1210} /* NN,UA,A,C,C */
09727 ,{ 1340, 1340, 1210, 60, 1210} /* NN,UA,A,C,G */
09728 ,{ 1210, 1210, 1080, 180, 1080} /* NN,UA,A,C,U */
09729 }
09730 ,{{{ 2120, 2120, 1990, -80, 1990} /* NN,UA,A,G,E */
09731 ,{ -230, -230, -360, -1510, -360} /* NN,UA,A,G,A */
09732 ,{ 1190, 1190, 1060, -80, 1060} /* NN,UA,A,G,C */
09733 ,{ 2120, 2120, 1990, -400, 1990} /* NN,UA,A,G,G */
09734 ,{ 1190, 1190, 1060, -80, 1060} /* NN,UA,A,G,U */
09735 }

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09736 ,{{ 1340, 1340, 1210, 60, 1210} /* NN,UA,A,U,E */
09737 ,{ 1340, 1340, 1210, 60, 1210} /* NN,UA,A,U,A */
09738 ,{ 900, 900, 770, -130, 770} /* NN,UA,A,U,C */
09739 ,{ 1340, 1340, 1210, 60, 1210} /* NN,UA,A,U,G */
09740 ,{ 640, 640, 270, -870, 270} /* NN,UA,A,U,U */
09741 }
09742 }
09743 ,{{{ 1990, 1840, 1990, 1840, 1750} /* NN,UA,C,E,E */
09744 ,{ 1340, 1190, 1340, 1190, 1100} /* NN,UA,C,E,A */
09745 ,{ 1210, 1060, 1210, 1060, 970} /* NN,UA,C,E,C */
09746 ,{ 1990, 1840, 1990, 1840, 1750} /* NN,UA,C,E,G */
09747 ,{ 1080, 930, 1080, 930, 840} /* NN,UA,C,E,U */
09748 }
09749 ,{{{ 1340, 1190, 1340, 1190, 1100} /* NN,UA,C,A,E */
09750 ,{ 1340, 1190, 1340, 1190, 1100} /* NN,UA,C,A,A */
09751 ,{ 1060, 910, 1060, 910, 820} /* NN,UA,C,A,C */
09752 ,{ 180, -210, 180, -210, -60} /* NN,UA,C,A,G */
09753 ,{ 1060, 910, 1060, 910, 820} /* NN,UA,C,A,U */
09754 }
09755 ,{{{ 1210, 1060, 1210, 1060, 970} /* NN,UA,C,C,E */
09756 ,{ 1210, 1060, 1210, 1060, 970} /* NN,UA,C,C,A */
09757 ,{ 1210, 1060, 1210, 1060, 970} /* NN,UA,C,C,C */
09758 ,{ 1210, 1060, 1210, 1060, 970} /* NN,UA,C,C,G */
09759 ,{ 1080, 930, 1080, 930, 840} /* NN,UA,C,C,U */
09760 }
09761 ,{{{ 1990, 1840, 1990, 1840, 1750} /* NN,UA,C,G,E */
09762 ,{ -120, -510, -120, -510, -360} /* NN,UA,C,G,A */
09763 ,{ 1060, 910, 1060, 910, 820} /* NN,UA,C,G,C */
09764 ,{ 1990, 1840, 1990, 1840, 1750} /* NN,UA,C,G,G */
09765 ,{ 1060, 910, 1060, 910, 820} /* NN,UA,C,G,U */
09766 }
09767 ,{{{ 1210, 1060, 1210, 1060, 970} /* NN,UA,C,U,E */
09768 ,{ 1210, 1060, 1210, 1060, 970} /* NN,UA,C,U,A */
09769 ,{ 770, 620, 770, 620, 530} /* NN,UA,C,U,C */
09770 ,{ 1210, 1060, 1210, 1060, 970} /* NN,UA,C,U,G */
09771 ,{ 270, 120, 270, 120, 30} /* NN,UA,C,U,U */
09772 }
09773 }
09774 ,{{{ 2120, 400, 1990, 2120, 1990} /* NN,UA,G,E,E */
09775 ,{ 2120, 290, 1340, 2120, 1340} /* NN,UA,G,E,A */
09776 ,{ 1990, 400, 1210, 1990, 1210} /* NN,UA,G,E,C */
09777 ,{ 1990, 160, 1990, 1990, 1990} /* NN,UA,G,E,G */
09778 ,{ 1860, 270, 1080, 1860, 1080} /* NN,UA,G,E,U */
09779 }
09780 ,{{{ 2120, 290, 1340, 2120, 1340} /* NN,UA,G,A,E */
09781 ,{ 2120, 290, 1340, 2120, 1340} /* NN,UA,G,A,A */
09782 ,{ 1840, 10, 1060, 1840, 1060} /* NN,UA,G,A,C */
09783 ,{ -60, -1110, -60, -530, -60} /* NN,UA,G,A,G */
09784 ,{ 1840, 10, 1060, 1840, 1060} /* NN,UA,G,A,U */
09785 }
09786 ,{{{ 1990, 400, 1210, 1990, 1210} /* NN,UA,G,C,E */
09787 ,{ 1990, 160, 1210, 1990, 1210} /* NN,UA,G,C,A */
09788 ,{ 1990, 400, 1210, 1990, 1210} /* NN,UA,G,C,C */
09789 ,{ 1990, 160, 1210, 1990, 1210} /* NN,UA,G,C,G */
09790 ,{ 1860, 270, 1080, 1860, 1080} /* NN,UA,G,C,U */
09791 }
09792 ,{{{ 1990, 10, 1990, 1840, 1990} /* NN,UA,G,G,E */
09793 ,{ -360, -1410, -360, -830, -360} /* NN,UA,G,G,A */
09794 ,{ 1840, 10, 1060, 1840, 1060} /* NN,UA,G,G,C */
09795 ,{ 1990, -310, 1990, 270, 1990} /* NN,UA,G,G,G */
09796 ,{ 1840, 10, 1060, 1840, 1060} /* NN,UA,G,G,U */
09797 }
09798 ,{{{ 1990, 160, 1210, 1990, 1210} /* NN,UA,G,U,E */
09799 ,{ 1990, 160, 1210, 1990, 1210} /* NN,UA,G,U,A */
09800 ,{ 1550, -40, 770, 1550, 770} /* NN,UA,G,U,C */
09801 ,{ 1990, 160, 1210, 1990, 1210} /* NN,UA,G,U,G */
09802 ,{ 270, -780, 270, -200, 270} /* NN,UA,G,U,U */
09803 }
09804 }
09805 ,{{{ 1860, 1840, 1860, 1840, 640} /* NN,UA,U,E,E */
09806 ,{ 1210, 1190, 1210, 1190, 640} /* NN,UA,U,E,A */
09807 ,{ 1080, 1060, 1080, 1060, 270} /* NN,UA,U,E,C */
09808 ,{ 1860, 1840, 1860, 1840, 270} /* NN,UA,U,E,G */
09809 ,{ 950, 930, 950, 930, 140} /* NN,UA,U,E,U */
09810 }
09811 ,{{{ 1210, 1190, 1210, 1190, 640} /* NN,UA,U,A,E */
09812 ,{ 1210, 1190, 1210, 1190, 640} /* NN,UA,U,A,A */
09813 ,{ 930, 910, 930, 910, 120} /* NN,UA,U,A,C */
09814 ,{ 50, -210, 50, -210, -1000} /* NN,UA,U,A,G */
09815 ,{ 930, 910, 930, 910, 120} /* NN,UA,U,A,U */
09816 }
09817 ,{{{ 1080, 1060, 1080, 1060, 270} /* NN,UA,U,C,E */
09818 ,{ 1080, 1060, 1080, 1060, 270} /* NN,UA,U,C,A */
09819 ,{ 1080, 1060, 1080, 1060, 270} /* NN,UA,U,C,C */
09820 ,{ 1080, 1060, 1080, 1060, 270} /* NN,UA,U,C,G */
09821 ,{ 950, 930, 950, 930, 140} /* NN,UA,U,C,U */
09822 }

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09823 ,{{ 1860, 1840, 1860, 1840, 120} /* NN,UA,U,G,E */
09824 ,{ -250, -510, -250, -510, -1300} /* NN,UA,U,G,A */
09825 ,{ 930, 910, 930, 910, 120} /* NN,UA,U,G,C */
09826 ,{ 1860, 1840, 1860, 1840, -200} /* NN,UA,U,G,G */
09827 ,{ 930, 910, 930, 910, 120} /* NN,UA,U,G,U */
09828 }
09829 ,{{ 1080, 1060, 1080, 1060, 270} /* NN,UA,U,U,E */
09830 ,{ 1080, 1060, 1080, 1060, 270} /* NN,UA,U,U,A */
09831 ,{ 640, 620, 640, 620, -170} /* NN,UA,U,U,C */
09832 ,{ 1080, 1060, 1080, 1060, 270} /* NN,UA,U,U,G */
09833 ,{ 140, 120, 140, 120, -670} /* NN,UA,U,U,U */
09834 }
09835 }
09836 }
09837 ,{{{ 2120, 2120, 1990, 2120, 1990} /* NN,NN,E,E,E */
09838 ,{ 2120, 1470, 1340, 2120, 1340} /* NN,NN,E,E,A */
09839 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,NN,E,E,C */
09840 ,{ 2120, 2120, 1990, 1990, 1990} /* NN,NN,E,E,G */
09841 ,{ 1860, 1210, 1080, 1860, 1080} /* NN,NN,E,E,U */
09842 }
09843 ,{{{ 2120, 1470, 1340, 2120, 1340} /* NN,NN,E,A,E */
09844 ,{ 2120, 1470, 1340, 2120, 1340} /* NN,NN,E,A,A */
09845 ,{ 1840, 1190, 1060, 1840, 1060} /* NN,NN,E,A,C */
09846 ,{ 400, 290, 400, 10, 170} /* NN,NN,E,A,G */
09847 ,{ 1840, 1190, 1060, 1840, 1060} /* NN,NN,E,A,U */
09848 }
09849 ,{{{ 1990, 1340, 1210, 1990, 1210} /* NN,NN,E,C,E */
09850 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,NN,E,C,A */
09851 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,NN,E,C,C */
09852 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,NN,E,C,G */
09853 ,{ 1860, 1210, 1080, 1860, 1080} /* NN,NN,E,C,U */
09854 }
09855 ,{{{ 2120, 2120, 1990, 1840, 1990} /* NN,NN,E,G,E */
09856 ,{ 540, 190, 540, -80, 70} /* NN,NN,E,G,A */
09857 ,{ 1840, 1190, 1060, 1840, 1060} /* NN,NN,E,G,C */
09858 ,{ 2120, 2120, 1990, 1840, 1990} /* NN,NN,E,G,G */
09859 ,{ 1840, 1190, 1060, 1840, 1060} /* NN,NN,E,G,U */
09860 }
09861 ,{{{ 1990, 1340, 1210, 1990, 1210} /* NN,NN,E,U,E */
09862 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,NN,E,U,A */
09863 ,{ 1750, 1100, 970, 1750, 970} /* NN,NN,E,U,C */
09864 ,{ 1990, 1340, 1210, 1990, 1210} /* NN,NN,E,U,G */
09865 ,{ 640, 640, 270, 120, 270} /* NN,NN,E,U,U */
09866 }
09867 }
09868 ,{{{ 2120, 2120, 1990, 540, 1990} /* NN,NN,A,E,E */
09869 ,{ 1470, 1470, 1340, 190, 1340} /* NN,NN,A,E,A */
09870 ,{ 1340, 1340, 1210, 540, 1210} /* NN,NN,A,E,C */
09871 ,{ 2120, 2120, 1990, 60, 1990} /* NN,NN,A,E,G */
09872 ,{ 1210, 1210, 1080, 180, 1080} /* NN,NN,A,E,U */
09873 }
09874 ,{{{ 1470, 1470, 1340, 190, 1340} /* NN,NN,A,A,E */
09875 ,{ 1470, 1470, 1340, 190, 1340} /* NN,NN,A,A,A */
09876 ,{ 1190, 1190, 1060, -80, 1060} /* NN,NN,A,A,C */
09877 ,{ 290, 290, 160, -980, 160} /* NN,NN,A,A,G */
09878 ,{ 1190, 1190, 1060, -80, 1060} /* NN,NN,A,A,U */
09879 }
09880 ,{{{ 1340, 1340, 1210, 540, 1210} /* NN,NN,A,C,E */
09881 ,{ 1340, 1340, 1210, 60, 1210} /* NN,NN,A,C,A */
09882 ,{ 1340, 1340, 1210, 540, 1210} /* NN,NN,A,C,C */
09883 ,{ 1340, 1340, 1210, 60, 1210} /* NN,NN,A,C,G */
09884 ,{ 1210, 1210, 1080, 180, 1080} /* NN,NN,A,C,U */
09885 }
09886 ,{{{ 2120, 2120, 1990, -80, 1990} /* NN,NN,A,G,E */
09887 ,{ 190, 190, 60, -1080, 60} /* NN,NN,A,G,A */
09888 ,{ 1190, 1190, 1060, -80, 1060} /* NN,NN,A,G,C */
09889 ,{ 2120, 2120, 1990, -400, 1990} /* NN,NN,A,G,G */
09890 ,{ 1190, 1190, 1060, -80, 1060} /* NN,NN,A,G,U */
09891 }
09892 ,{{{ 1340, 1340, 1210, 70, 1210} /* NN,NN,A,U,E */
09893 ,{ 1340, 1340, 1210, 60, 1210} /* NN,NN,A,U,A */
09894 ,{ 1100, 1100, 970, 70, 970} /* NN,NN,A,U,C */
09895 ,{ 1340, 1340, 1210, 60, 1210} /* NN,NN,A,U,G */
09896 ,{ 640, 640, 270, -810, 270} /* NN,NN,A,U,U */
09897 }
09898 }
09899 ,{{{ 1990, 1840, 1990, 1840, 1750} /* NN,NN,C,E,E */
09900 ,{ 1340, 1190, 1340, 1190, 1100} /* NN,NN,C,E,A */
09901 ,{ 1210, 1060, 1210, 1060, 970} /* NN,NN,C,E,C */
09902 ,{ 1990, 1840, 1990, 1840, 1750} /* NN,NN,C,E,G */
09903 ,{ 1080, 930, 1080, 930, 840} /* NN,NN,C,E,U */
09904 }
09905 ,{{{ 1340, 1190, 1340, 1190, 1100} /* NN,NN,C,A,E */
09906 ,{ 1340, 1190, 1340, 1190, 1100} /* NN,NN,C,A,A */
09907 ,{ 1060, 910, 1060, 910, 820} /* NN,NN,C,A,C */
09908 ,{ 400, 10, 400, 10, 170} /* NN,NN,C,A,G */
09909 ,{ 1060, 910, 1060, 910, 820} /* NN,NN,C,A,U */

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```
09910      }
09911      ,{{ 1210, 1060, 1210, 1060, 970} /* NN,NN,C,C,E */
09912      ,{{ 1210, 1060, 1210, 1060, 970} /* NN,NN,C,C,A */
09913      ,{{ 1210, 1060, 1210, 1060, 970} /* NN,NN,C,C,C */
09914      ,{{ 1210, 1060, 1210, 1060, 970} /* NN,NN,C,C,G */
09915      ,{{ 1080, 930, 1080, 930, 840} /* NN,NN,C,C,U */
09916      }
09917      ,{{ 1990, 1840, 1990, 1840, 1750} /* NN,NN,C,G,E */
09918      ,{{ 540, -80, 540, -80, 70} /* NN,NN,C,G,A */
09919      ,{{ 1060, 910, 1060, 910, 820} /* NN,NN,C,G,C */
09920      ,{{ 1990, 1840, 1990, 1840, 1750} /* NN,NN,C,G,G */
09921      ,{{ 1060, 910, 1060, 910, 820} /* NN,NN,C,G,U */
09922      }
09923      ,{{ 1210, 1060, 1210, 1060, 970} /* NN,NN,C,U,E */
09924      ,{{ 1210, 1060, 1210, 1060, 970} /* NN,NN,C,U,A */
09925      ,{{ 970, 820, 970, 820, 740} /* NN,NN,C,U,C */
09926      ,{{ 1210, 1060, 1210, 1060, 970} /* NN,NN,C,U,G */
09927      ,{{ 270, 120, 270, 120, 30} /* NN,NN,C,U,U */
09928      }
09929      }
09930      ,{{{ 2120, 400, 1990, 2120, 1990} /* NN,NN,G,E,E */
09931      ,{{ 2120, 290, 1340, 2120, 1340} /* NN,NN,G,E,A */
09932      ,{{ 1990, 400, 1210, 1990, 1210} /* NN,NN,G,E,C */
09933      ,{{ 1990, 160, 1990, 1990, 1990} /* NN,NN,G,E,G */
09934      ,{{ 1860, 270, 1080, 1860, 1080} /* NN,NN,G,E,U */
09935      }
09936      ,{{{ 2120, 290, 1340, 2120, 1340} /* NN,NN,G,A,E */
09937      ,{{ 2120, 290, 1340, 2120, 1340} /* NN,NN,G,A,A */
09938      ,{{ 1840, 10, 1060, 1840, 1060} /* NN,NN,G,A,C */
09939      ,{{ 160, -890, 160, -310, 160} /* NN,NN,G,A,G */
09940      ,{{ 1840, 10, 1060, 1840, 1060} /* NN,NN,G,A,U */
09941      }
09942      ,{{{ 1990, 400, 1210, 1990, 1210} /* NN,NN,G,C,E */
09943      ,{{ 1990, 160, 1210, 1990, 1210} /* NN,NN,G,C,A */
09944      ,{{ 1990, 400, 1210, 1990, 1210} /* NN,NN,G,C,C */
09945      ,{{ 1990, 160, 1210, 1990, 1210} /* NN,NN,G,C,G */
09946      ,{{ 1860, 270, 1080, 1860, 1080} /* NN,NN,G,C,U */
09947      }
09948      ,{{{ 1990, 10, 1990, 1840, 1990} /* NN,NN,G,G,E */
09949      ,{{ 60, -980, 60, -400, 60} /* NN,NN,G,G,A */
09950      ,{{ 1840, 10, 1060, 1840, 1060} /* NN,NN,G,G,C */
09951      ,{{ 1990, -310, 1990, 270, 1990} /* NN,NN,G,G,G */
09952      ,{{ 1840, 10, 1060, 1840, 1060} /* NN,NN,G,G,U */
09953      }
09954      ,{{{ 1990, 170, 1210, 1990, 1210} /* NN,NN,G,U,E */
09955      ,{{ 1990, 160, 1210, 1990, 1210} /* NN,NN,G,U,A */
09956      ,{{ 1750, 170, 970, 1750, 970} /* NN,NN,G,U,C */
09957      ,{{ 1990, 160, 1210, 1990, 1210} /* NN,NN,G,U,G */
09958      ,{{ 270, -780, 270, -200, 270} /* NN,NN,G,U,U */
09959      }
09960      }
09961      ,{{{ 1860, 1840, 1860, 1840, 640} /* NN,NN,U,E,E */
09962      ,{{ 1210, 1190, 1210, 1190, 640} /* NN,NN,U,E,A */
09963      ,{{ 1080, 1060, 1080, 1060, 270} /* NN,NN,U,E,C */
09964      ,{{ 1860, 1840, 1860, 1840, 270} /* NN,NN,U,E,G */
09965      ,{{ 950, 930, 950, 930, 140} /* NN,NN,U,E,U */
09966      }
09967      ,{{{ 1210, 1190, 1210, 1190, 640} /* NN,NN,U,A,E */
09968      ,{{ 1210, 1190, 1210, 1190, 640} /* NN,NN,U,A,A */
09969      ,{{ 930, 910, 930, 910, 120} /* NN,NN,U,A,C */
09970      ,{{ 270, 10, 270, 10, -780} /* NN,NN,U,A,G */
09971      ,{{ 930, 910, 930, 910, 120} /* NN,NN,U,A,U */
09972      }
09973      ,{{{ 1080, 1060, 1080, 1060, 270} /* NN,NN,U,C,E */
09974      ,{{ 1080, 1060, 1080, 1060, 270} /* NN,NN,U,C,A */
09975      ,{{ 1080, 1060, 1080, 1060, 270} /* NN,NN,U,C,C */
09976      ,{{ 1080, 1060, 1080, 1060, 270} /* NN,NN,U,C,G */
09977      ,{{ 950, 930, 950, 930, 140} /* NN,NN,U,C,U */
09978      }
09979      ,{{{ 1860, 1840, 1860, 1840, 120} /* NN,NN,U,G,E */
09980      ,{{ 180, -80, 180, -80, -810} /* NN,NN,U,G,A */
09981      ,{{ 930, 910, 930, 910, 120} /* NN,NN,U,G,C */
09982      ,{{ 1860, 1840, 1860, 1840, -200} /* NN,NN,U,G,G */
09983      ,{{ 930, 910, 930, 910, 120} /* NN,NN,U,G,U */
09984      }
09985      ,{{{ 1080, 1060, 1080, 1060, 270} /* NN,NN,U,U,E */
09986      ,{{ 1080, 1060, 1080, 1060, 270} /* NN,NN,U,U,A */
09987      ,{{ 840, 820, 840, 820, 30} /* NN,NN,U,U,C */
09988      ,{{ 1080, 1060, 1080, 1060, 270} /* NN,NN,U,U,G */
09989      ,{{ 140, 120, 140, 120, -670} /* NN,NN,U,U,U */
09990      }
09991      }
09992      }
09993      }
09994      };
09995
```

11.104 intI22dH_D.h

```

00001 PUBLIC int int22_dH_D[NBPAIRS+1][NBPAIRS+1][5][5][5] =
00002 {{{{{ INF, INF, INF, INF, INF} /* NP,NP,E,E,E */
00003 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,E,A */
00004 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,E,C */
00005 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,E,G */
00006 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,E,T */
00007 }
00008 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,E,A,E */
00009 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,A,A */
00010 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,A,C */
00011 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,A,G */
00012 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,A,T */
00013 }
00014 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,E,C,E */
00015 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,C,A */
00016 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,C,C */
00017 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,C,G */
00018 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,C,T */
00019 }
00020 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,E,G,E */
00021 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,G,A */
00022 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,G,C */
00023 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,G,G */
00024 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,G,T */
00025 }
00026 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,E,T,E */
00027 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,T,A */
00028 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,T,C */
00029 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,T,G */
00030 ,{{ INF, INF, INF, INF, INF} /* NP,NP,E,T,T */
00031 }
00032 }
00033 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,E,E */
00034 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,E,A */
00035 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,E,C */
00036 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,E,G */
00037 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,E,T */
00038 }
00039 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,A,E */
00040 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,A,A */
00041 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,A,C */
00042 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,A,G */
00043 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,A,T */
00044 }
00045 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,C,E */
00046 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,C,A */
00047 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,C,C */
00048 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,C,G */
00049 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,C,T */
00050 }
00051 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,G,E */
00052 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,G,A */
00053 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,G,C */
00054 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,G,G */
00055 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,G,T */
00056 }
00057 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,A,T,E */
00058 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,T,A */
00059 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,T,C */
00060 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,T,G */
00061 ,{{ INF, INF, INF, INF, INF} /* NP,NP,A,T,T */
00062 }
00063 }
00064 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,C,E,E */
00065 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,E,A */
00066 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,E,C */
00067 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,E,G */
00068 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,E,T */
00069 }
00070 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,C,A,E */
00071 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,A,A */
00072 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,A,C */
00073 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,A,G */
00074 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,A,T */
00075 }
00076 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,C,C,E */
00077 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,C,A */
00078 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,C,C */
00079 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,C,G */
00080 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,C,T */
00081 }
00082 ,{{{ INF, INF, INF, INF, INF} /* NP,NP,C,G,E */
00083 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,G,A */
00084 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,G,C */
00085 ,{{ INF, INF, INF, INF, INF} /* NP,NP,C,G,G */

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00086 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,T */
00087 }
00088 , {{ INF, INF, INF, INF, INF} /* NP,NP,C,T,E */
00089 , { INF, INF, INF, INF, INF} /* NP,NP,C,T,A */
00090 , { INF, INF, INF, INF, INF} /* NP,NP,C,T,C */
00091 , { INF, INF, INF, INF, INF} /* NP,NP,C,T,G */
00092 , { INF, INF, INF, INF, INF} /* NP,NP,C,T,T */
00093 }
00094 }
00095 , {{{ INF, INF, INF, INF, INF} /* NP,NP,G,E,E */
00096 , { INF, INF, INF, INF, INF} /* NP,NP,G,E,A */
00097 , { INF, INF, INF, INF, INF} /* NP,NP,G,E,C */
00098 , { INF, INF, INF, INF, INF} /* NP,NP,G,E,G */
00099 , { INF, INF, INF, INF, INF} /* NP,NP,G,E,T */
00100 }
00101 , {{ INF, INF, INF, INF, INF} /* NP,NP,G,A,E */
00102 , { INF, INF, INF, INF, INF} /* NP,NP,G,A,A */
00103 , { INF, INF, INF, INF, INF} /* NP,NP,G,A,C */
00104 , { INF, INF, INF, INF, INF} /* NP,NP,G,A,G */
00105 , { INF, INF, INF, INF, INF} /* NP,NP,G,A,T */
00106 }
00107 , {{ INF, INF, INF, INF, INF} /* NP,NP,G,C,E */
00108 , { INF, INF, INF, INF, INF} /* NP,NP,G,C,A */
00109 , { INF, INF, INF, INF, INF} /* NP,NP,G,C,C */
00110 , { INF, INF, INF, INF, INF} /* NP,NP,G,C,G */
00111 , { INF, INF, INF, INF, INF} /* NP,NP,G,C,T */
00112 }
00113 , {{ INF, INF, INF, INF, INF} /* NP,NP,G,G,E */
00114 , { INF, INF, INF, INF, INF} /* NP,NP,G,G,A */
00115 , { INF, INF, INF, INF, INF} /* NP,NP,G,G,C */
00116 , { INF, INF, INF, INF, INF} /* NP,NP,G,G,G */
00117 , { INF, INF, INF, INF, INF} /* NP,NP,G,G,T */
00118 }
00119 , {{ INF, INF, INF, INF, INF} /* NP,NP,G,T,E */
00120 , { INF, INF, INF, INF, INF} /* NP,NP,G,T,A */
00121 , { INF, INF, INF, INF, INF} /* NP,NP,G,T,C */
00122 , { INF, INF, INF, INF, INF} /* NP,NP,G,T,G */
00123 , { INF, INF, INF, INF, INF} /* NP,NP,G,T,T */
00124 }
00125 }
00126 , {{{ INF, INF, INF, INF, INF} /* NP,NP,T,E,E */
00127 , { INF, INF, INF, INF, INF} /* NP,NP,T,E,A */
00128 , { INF, INF, INF, INF, INF} /* NP,NP,T,E,C */
00129 , { INF, INF, INF, INF, INF} /* NP,NP,T,E,G */
00130 , { INF, INF, INF, INF, INF} /* NP,NP,T,E,T */
00131 }
00132 , {{ INF, INF, INF, INF, INF} /* NP,NP,T,A,E */
00133 , { INF, INF, INF, INF, INF} /* NP,NP,T,A,A */
00134 , { INF, INF, INF, INF, INF} /* NP,NP,T,A,C */
00135 , { INF, INF, INF, INF, INF} /* NP,NP,T,A,G */
00136 , { INF, INF, INF, INF, INF} /* NP,NP,T,A,T */
00137 }
00138 , {{ INF, INF, INF, INF, INF} /* NP,NP,T,C,E */
00139 , { INF, INF, INF, INF, INF} /* NP,NP,T,C,A */
00140 , { INF, INF, INF, INF, INF} /* NP,NP,T,C,C */
00141 , { INF, INF, INF, INF, INF} /* NP,NP,T,C,G */
00142 , { INF, INF, INF, INF, INF} /* NP,NP,T,C,T */
00143 }
00144 , {{ INF, INF, INF, INF, INF} /* NP,NP,T,G,E */
00145 , { INF, INF, INF, INF, INF} /* NP,NP,T,G,A */
00146 , { INF, INF, INF, INF, INF} /* NP,NP,T,G,C */
00147 , { INF, INF, INF, INF, INF} /* NP,NP,T,G,G */
00148 , { INF, INF, INF, INF, INF} /* NP,NP,T,G,T */
00149 }
00150 , {{{ INF, INF, INF, INF, INF} /* NP,NP,T,T,E */
00151 , { INF, INF, INF, INF, INF} /* NP,NP,T,T,A */
00152 , { INF, INF, INF, INF, INF} /* NP,NP,T,T,C */
00153 , { INF, INF, INF, INF, INF} /* NP,NP,T,T,G */
00154 , { INF, INF, INF, INF, INF} /* NP,NP,T,T,T */
00155 }
00156 }
00157 }
00158 , {{{ INF, INF, INF, INF, INF} /* NP,CG,E,E,E */
00159 , { INF, INF, INF, INF, INF} /* NP,CG,E,E,A */
00160 , { INF, INF, INF, INF, INF} /* NP,CG,E,E,C */
00161 , { INF, INF, INF, INF, INF} /* NP,CG,E,E,G */
00162 , { INF, INF, INF, INF, INF} /* NP,CG,E,E,T */
00163 }
00164 , {{ INF, INF, INF, INF, INF} /* NP,CG,E,A,E */
00165 , { INF, INF, INF, INF, INF} /* NP,CG,E,A,A */
00166 , { INF, INF, INF, INF, INF} /* NP,CG,E,A,C */
00167 , { INF, INF, INF, INF, INF} /* NP,CG,E,A,G */
00168 , { INF, INF, INF, INF, INF} /* NP,CG,E,A,T */
00169 }
00170 , {{ INF, INF, INF, INF, INF} /* NP,CG,E,C,E */
00171 , { INF, INF, INF, INF, INF} /* NP,CG,E,C,A */
00172 , { INF, INF, INF, INF, INF} /* NP,CG,E,C,C */

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00173      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,C,G */
00174      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,C,T */
00175      }
00176      , {{      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G,E */
00177      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G,A */
00178      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G,C */
00179      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G,G */
00180      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G,T */
00181      }
00182      , {{      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,T,E */
00183      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,T,A */
00184      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,T,C */
00185      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,T,G */
00186      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,T,T */
00187      }
00188      }
00189      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E,E */
00190      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E,A */
00191      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E,C */
00192      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E,G */
00193      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,E,T */
00194      }
00195      , {{      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,A,E */
00196      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,A,A */
00197      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,A,C */
00198      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,A,G */
00199      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,A,T */
00200      }
00201      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,C,E */
00202      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,C,A */
00203      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,C,C */
00204      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,C,G */
00205      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,C,T */
00206      }
00207      , {{      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,G,E */
00208      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,G,A */
00209      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,G,C */
00210      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,G,G */
00211      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,G,T */
00212      }
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00215      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,T,C */
00216      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,T,G */
00217      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,A,T,T */
00218      }
00219      }
00220      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,E */
00221      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,A */
00222      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,C */
00223      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,E,G */
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00226      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A,E */
00227      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A,A */
00228      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A,C */
00229      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,A,G */
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00234      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,C,C */
00235      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,C,G */
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00246      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,T,C */
00247      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,C,T,G */
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00249      }
00250      }
00251      , {{{      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,E,E */
00252      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,E,A */
00253      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,E,C */
00254      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,E,G */
00255      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,E,T */
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00258      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,A,A */
00259      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,G,A,C */

```



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00466  , {      INF,      INF,      INF,      INF,      INF} /* NP,GC,T,T,T */
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00472  , {      INF,      INF,      INF,      INF,      INF} /* NP,GT,E,E,C */
00473  , {      INF,      INF,      INF,      INF,      INF} /* NP,GT,E,E,G */
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00476  , {{{      INF,      INF,      INF,      INF,      INF} /* NP,GT,E,A,E */
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00478  , {      INF,      INF,      INF,      INF,      INF} /* NP,GT,E,A,C */
00479  , {      INF,      INF,      INF,      INF,      INF} /* NP,GT,E,A,G */
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01093 }
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01097 ,{ INF, INF, INF, INF, INF} /* NP,NN,E,E,G */
01098 ,{ INF, INF, INF, INF, INF} /* NP,NN,E,E,T */
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01103 ,{ INF, INF, INF, INF, INF} /* NP,NN,E,A,G */
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01109 ,{ INF, INF, INF, INF, INF} /* NP,NN,E,C,G */
01110 ,{ INF, INF, INF, INF, INF} /* NP,NN,E,C,T */
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01112 ,{{ INF, INF, INF, INF, INF} /* NP,NN,E,G,E */
01113 ,{ INF, INF, INF, INF, INF} /* NP,NN,E,G,A */
01114 ,{ INF, INF, INF, INF, INF} /* NP,NN,E,G,C */
01115 ,{ INF, INF, INF, INF, INF} /* NP,NN,E,G,G */
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01216     }

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01383      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,A,C */
01384      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,A,G */
01385      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,A,T */
01386      }
01387      , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,C,E */
01388      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,C,A */
01389      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,C,C */
01390      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,C,G */

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01392      }
01393      , {{      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,G,E */
01394      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,G,A */
01395      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,G,C */
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01397      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,G,T */
01398      }
01399      , {{      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,T,E */
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01402      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,T,T,G */
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01405      }
01406      }
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01664 , { -1040, -1080, -1040, -1090, -1120} /* CG,GC,G,A,C */
01665 , { -1040, -1080, -1040, -1090, -1120} /* CG,GC,G,A,G */
01666 , { -1040, -1080, -1040, -1090, -1120} /* CG,GC,G,A,T */
01667 }
01668 , {{{ -750, -790, -750, -800, -830} /* CG,GC,G,C,E */
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01671 , { -750, -790, -750, -800, -830} /* CG,GC,G,C,G */
01672 , { -750, -790, -750, -800, -830} /* CG,GC,G,C,T */
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01674 , {{{ -930, -970, -930, -980, -1010} /* CG,GC,G,G,E */
01675 , { -930, -970, -930, -980, -1010} /* CG,GC,G,G,A */
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01684 , { -510, -550, -510, -560, -590} /* CG,GC,G,T,T */
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01718 }
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01816 , { -190, -230, -190, -240, -270} /* CG,GT,G,E,T */
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01822 , { -720, -760, -720, -770, -800} /* CG,GT,G,A,T */
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01825 , { -430, -470, -430, -480, -510} /* CG,GT,G,C,A */

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01837 , { -190, -230, -190, -240, -270} /* CG,GT,G,T,A */
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01961 , {{ -1000, -1040, -1000, -1050, -1080} /* CG,TG,C,T,E */
01962 , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,C,T,A */
01963 , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,C,T,C */
01964 , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,C,T,G */
01965 , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,C,T,T */
01966 }
01967 }
01968 , {{{ -160, -200, -160, -210, -240} /* CG,TG,G,E,E */
01969 , { -160, -200, -160, -210, -240} /* CG,TG,G,E,A */
01970 , { -160, -200, -160, -210, -240} /* CG,TG,G,E,C */
01971 , { -160, -200, -160, -210, -240} /* CG,TG,G,E,G */
01972 , { -160, -200, -160, -210, -240} /* CG,TG,G,E,T */
01973 }
01974 , {{ -190, -230, -190, -240, -270} /* CG,TG,G,A,E */
01975 , { -190, -230, -190, -240, -270} /* CG,TG,G,A,A */
01976 , { -190, -230, -190, -240, -270} /* CG,TG,G,A,C */
01977 , { -190, -230, -190, -240, -270} /* CG,TG,G,A,G */
01978 , { -190, -230, -190, -240, -270} /* CG,TG,G,A,T */
01979 }
01980 , {{ -160, -200, -160, -210, -240} /* CG,TG,G,C,E */
01981 , { -160, -200, -160, -210, -240} /* CG,TG,G,C,A */
01982 , { -160, -200, -160, -210, -240} /* CG,TG,G,C,C */
01983 , { -160, -200, -160, -210, -240} /* CG,TG,G,C,G */
01984 , { -160, -200, -160, -210, -240} /* CG,TG,G,C,T */
01985 }
01986 , {{ -350, -390, -350, -400, -430} /* CG,TG,G,G,E */
01987 , { -350, -390, -350, -400, -430} /* CG,TG,G,G,A */
01988 , { -350, -390, -350, -400, -430} /* CG,TG,G,G,C */
01989 , { -350, -390, -350, -400, -430} /* CG,TG,G,G,G */
01990 , { -350, -390, -350, -400, -430} /* CG,TG,G,G,T */
01991 }
01992 , {{ -1000, -1040, -1000, -1050, -1080} /* CG,TG,G,T,E */
01993 , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,G,T,A */
01994 , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,G,T,C */
01995 , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,G,T,G */
01996 , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,G,T,T */
01997 }
01998 }
01999 , {{{ -160, -200, -160, -210, -240} /* CG,TG,T,E,E */

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02000      , { -160, -200, -160, -210, -240} /* CG,TG,T,E,A */
02001      , { -160, -200, -160, -210, -240} /* CG,TG,T,E,C */
02002      , { -160, -200, -160, -210, -240} /* CG,TG,T,E,G */
02003      , { -160, -200, -160, -210, -240} /* CG,TG,T,E,T */
02004      }
02005      , { { -190, -230, -190, -240, -270} /* CG,TG,T,A,E */
02006      , { -190, -230, -190, -240, -270} /* CG,TG,T,A,A */
02007      , { -190, -230, -190, -240, -270} /* CG,TG,T,A,C */
02008      , { -190, -230, -190, -240, -270} /* CG,TG,T,A,G */
02009      , { -190, -230, -190, -240, -270} /* CG,TG,T,A,T */
02010      }
02011      , { { -160, -200, -160, -210, -240} /* CG,TG,T,C,E */
02012      , { -160, -200, -160, -210, -240} /* CG,TG,T,C,A */
02013      , { -160, -200, -160, -210, -240} /* CG,TG,T,C,C */
02014      , { -160, -200, -160, -210, -240} /* CG,TG,T,C,G */
02015      , { -160, -200, -160, -210, -240} /* CG,TG,T,C,T */
02016      }
02017      , { { -350, -390, -350, -400, -430} /* CG,TG,T,G,E */
02018      , { -350, -390, -350, -400, -430} /* CG,TG,T,G,A */
02019      , { -350, -390, -350, -400, -430} /* CG,TG,T,G,C */
02020      , { -350, -390, -350, -400, -430} /* CG,TG,T,G,G */
02021      , { -350, -390, -350, -400, -430} /* CG,TG,T,G,T */
02022      }
02023      , { { -1000, -1040, -1000, -1050, -1080} /* CG,TG,T,T,E */
02024      , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,T,T,A */
02025      , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,T,T,C */
02026      , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,T,T,G */
02027      , { -1000, -1040, -1000, -1050, -1080} /* CG,TG,T,T,T */
02028      }
02029      }
02030      }
02031      , { { { 100, 60, 100, 50, 20} /* CG,AT,E,E,E */
02032      , { 100, 60, 100, 50, 20} /* CG,AT,E,E,A */
02033      , { 100, 60, 100, 50, 20} /* CG,AT,E,E,C */
02034      , { 100, 60, 100, 50, 20} /* CG,AT,E,E,G */
02035      , { 100, 60, 100, 50, 20} /* CG,AT,E,E,T */
02036      }
02037      , { { -20, -60, -20, -70, -100} /* CG,AT,E,A,E */
02038      , { -20, -60, -20, -70, -100} /* CG,AT,E,A,A */
02039      , { -20, -60, -20, -70, -100} /* CG,AT,E,A,C */
02040      , { -20, -60, -20, -70, -100} /* CG,AT,E,A,G */
02041      , { -20, -60, -20, -70, -100} /* CG,AT,E,A,T */
02042      }
02043      , { { 100, 60, 100, 50, 20} /* CG,AT,E,C,E */
02044      , { 100, 60, 100, 50, 20} /* CG,AT,E,C,A */
02045      , { 100, 60, 100, 50, 20} /* CG,AT,E,C,C */
02046      , { 100, 60, 100, 50, 20} /* CG,AT,E,C,G */
02047      , { 100, 60, 100, 50, 20} /* CG,AT,E,C,T */
02048      }
02049      , { { 50, 10, 50, 0, -30} /* CG,AT,E,G,E */
02050      , { 50, 10, 50, 0, -30} /* CG,AT,E,G,A */
02051      , { 50, 10, 50, 0, -30} /* CG,AT,E,G,C */
02052      , { 50, 10, 50, 0, -30} /* CG,AT,E,G,G */
02053      , { 50, 10, 50, 0, -30} /* CG,AT,E,G,T */
02054      }
02055      , { { 10, -30, 10, -40, -70} /* CG,AT,E,T,E */
02056      , { 10, -30, 10, -40, -70} /* CG,AT,E,T,A */
02057      , { 10, -30, 10, -40, -70} /* CG,AT,E,T,C */
02058      , { 10, -30, 10, -40, -70} /* CG,AT,E,T,G */
02059      , { 10, -30, 10, -40, -70} /* CG,AT,E,T,T */
02060      }
02061      }
02062      , { { { 100, 60, 100, 50, 20} /* CG,AT,A,E,E */
02063      , { 100, 60, 100, 50, 20} /* CG,AT,A,E,A */
02064      , { 100, 60, 100, 50, 20} /* CG,AT,A,E,C */
02065      , { 100, 60, 100, 50, 20} /* CG,AT,A,E,G */
02066      , { 100, 60, 100, 50, 20} /* CG,AT,A,E,T */
02067      }
02068      , { { -20, -60, -20, -70, -100} /* CG,AT,A,A,E */
02069      , { -20, -60, -20, -70, -100} /* CG,AT,A,A,A */
02070      , { -20, -60, -20, -70, -100} /* CG,AT,A,A,C */
02071      , { -20, -60, -20, -70, -100} /* CG,AT,A,A,G */
02072      , { -20, -60, -20, -70, -100} /* CG,AT,A,A,T */
02073      }
02074      , { { 100, 60, 100, 50, 20} /* CG,AT,A,C,E */
02075      , { 100, 60, 100, 50, 20} /* CG,AT,A,C,A */
02076      , { 100, 60, 100, 50, 20} /* CG,AT,A,C,C */
02077      , { 100, 60, 100, 50, 20} /* CG,AT,A,C,G */
02078      , { 100, 60, 100, 50, 20} /* CG,AT,A,C,T */
02079      }
02080      , { { 50, 10, 50, 0, -30} /* CG,AT,A,G,E */
02081      , { 50, 10, 50, 0, -30} /* CG,AT,A,G,A */
02082      , { 50, 10, 50, 0, -30} /* CG,AT,A,G,C */
02083      , { 50, 10, 50, 0, -30} /* CG,AT,A,G,G */
02084      , { 50, 10, 50, 0, -30} /* CG,AT,A,G,T */
02085      }
02086      , { { 10, -30, 10, -40, -70} /* CG,AT,A,T,E */

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02087      , {      10,      -30,      10,      -40,      -70} /* CG,AT,A,T,A */
02088      , {      10,      -30,      10,      -40,      -70} /* CG,AT,A,T,C */
02089      , {      10,      -30,      10,      -40,      -70} /* CG,AT,A,T,G */
02090      , {      10,      -30,      10,      -40,      -70} /* CG,AT,A,T,T */
02091      }
02092    }
02093    ,{{{      100,      60,      100,      50,      20} /* CG,AT,C,E,E */
02094      , {      100,      60,      100,      50,      20} /* CG,AT,C,E,A */
02095      , {      100,      60,      100,      50,      20} /* CG,AT,C,E,C */
02096      , {      100,      60,      100,      50,      20} /* CG,AT,C,E,G */
02097      , {      100,      60,      100,      50,      20} /* CG,AT,C,E,T */
02098    }
02099    ,{{{      -20,      -60,      -20,      -70,     -100} /* CG,AT,C,A,E */
02100      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,C,A,A */
02101      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,C,A,C */
02102      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,C,A,G */
02103      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,C,A,T */
02104    }
02105    ,{{{      100,      60,      100,      50,      20} /* CG,AT,C,C,E */
02106      , {      100,      60,      100,      50,      20} /* CG,AT,C,C,A */
02107      , {      100,      60,      100,      50,      20} /* CG,AT,C,C,C */
02108      , {      100,      60,      100,      50,      20} /* CG,AT,C,C,G */
02109      , {      100,      60,      100,      50,      20} /* CG,AT,C,C,T */
02110    }
02111    ,{{{       50,      10,       50,       0,      -30} /* CG,AT,C,G,E */
02112      , {       50,      10,       50,       0,      -30} /* CG,AT,C,G,A */
02113      , {       50,      10,       50,       0,      -30} /* CG,AT,C,G,C */
02114      , {       50,      10,       50,       0,      -30} /* CG,AT,C,G,G */
02115      , {       50,      10,       50,       0,      -30} /* CG,AT,C,G,T */
02116    }
02117    ,{{{       10,      -30,       10,      -40,      -70} /* CG,AT,C,T,E */
02118      , {       10,      -30,       10,      -40,      -70} /* CG,AT,C,T,A */
02119      , {       10,      -30,       10,      -40,      -70} /* CG,AT,C,T,C */
02120      , {       10,      -30,       10,      -40,      -70} /* CG,AT,C,T,G */
02121      , {       10,      -30,       10,      -40,      -70} /* CG,AT,C,T,T */
02122    }
02123  }
02124  ,{{{      100,      60,      100,      50,      20} /* CG,AT,G,E,E */
02125      , {      100,      60,      100,      50,      20} /* CG,AT,G,E,A */
02126      , {      100,      60,      100,      50,      20} /* CG,AT,G,E,C */
02127      , {      100,      60,      100,      50,      20} /* CG,AT,G,E,G */
02128      , {      100,      60,      100,      50,      20} /* CG,AT,G,E,T */
02129    }
02130    ,{{{      -20,      -60,      -20,      -70,     -100} /* CG,AT,G,A,E */
02131      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,G,A,A */
02132      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,G,A,C */
02133      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,G,A,G */
02134      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,G,A,T */
02135    }
02136    ,{{{      100,      60,      100,      50,      20} /* CG,AT,G,C,E */
02137      , {      100,      60,      100,      50,      20} /* CG,AT,G,C,A */
02138      , {      100,      60,      100,      50,      20} /* CG,AT,G,C,C */
02139      , {      100,      60,      100,      50,      20} /* CG,AT,G,C,G */
02140      , {      100,      60,      100,      50,      20} /* CG,AT,G,C,T */
02141    }
02142    ,{{{       50,      10,       50,       0,      -30} /* CG,AT,G,G,E */
02143      , {       50,      10,       50,       0,      -30} /* CG,AT,G,G,A */
02144      , {       50,      10,       50,       0,      -30} /* CG,AT,G,G,C */
02145      , {       50,      10,       50,       0,      -30} /* CG,AT,G,G,G */
02146      , {       50,      10,       50,       0,      -30} /* CG,AT,G,G,T */
02147    }
02148    ,{{{       10,      -30,       10,      -40,      -70} /* CG,AT,G,T,E */
02149      , {       10,      -30,       10,      -40,      -70} /* CG,AT,G,T,A */
02150      , {       10,      -30,       10,      -40,      -70} /* CG,AT,G,T,C */
02151      , {       10,      -30,       10,      -40,      -70} /* CG,AT,G,T,G */
02152      , {       10,      -30,       10,      -40,      -70} /* CG,AT,G,T,T */
02153    }
02154  }
02155  ,{{{      100,      60,      100,      50,      20} /* CG,AT,T,E,E */
02156      , {      100,      60,      100,      50,      20} /* CG,AT,T,E,A */
02157      , {      100,      60,      100,      50,      20} /* CG,AT,T,E,C */
02158      , {      100,      60,      100,      50,      20} /* CG,AT,T,E,G */
02159      , {      100,      60,      100,      50,      20} /* CG,AT,T,E,T */
02160    }
02161    ,{{{      -20,      -60,      -20,      -70,     -100} /* CG,AT,T,A,E */
02162      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,T,A,A */
02163      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,T,A,C */
02164      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,T,A,G */
02165      , {      -20,      -60,      -20,      -70,     -100} /* CG,AT,T,A,T */
02166    }
02167    ,{{{      100,      60,      100,      50,      20} /* CG,AT,T,C,E */
02168      , {      100,      60,      100,      50,      20} /* CG,AT,T,C,A */
02169      , {      100,      60,      100,      50,      20} /* CG,AT,T,C,C */
02170      , {      100,      60,      100,      50,      20} /* CG,AT,T,C,G */
02171      , {      100,      60,      100,      50,      20} /* CG,AT,T,C,T */
02172    }
02173    ,{{{       50,      10,       50,       0,      -30} /* CG,AT,T,G,E */

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02174      , {      50,      10,      50,      0,      -30} /* CG,AT,T,G,A */
02175      , {      50,      10,      50,      0,      -30} /* CG,AT,T,G,C */
02176      , {      50,      10,      50,      0,      -30} /* CG,AT,T,G,G */
02177      , {      50,      10,      50,      0,      -30} /* CG,AT,T,G,T */
02178      }
02179      , {{      10,     -30,      10,     -40,     -70} /* CG,AT,T,T,E */
02180      , {      10,     -30,      10,     -40,     -70} /* CG,AT,T,T,A */
02181      , {      10,     -30,      10,     -40,     -70} /* CG,AT,T,T,C */
02182      , {      10,     -30,      10,     -40,     -70} /* CG,AT,T,T,G */
02183      , {      10,     -30,      10,     -40,     -70} /* CG,AT,T,T,T */
02184      }
02185      }
02186      }
02187      , {{{ -160,    -200,    -160,    -210,    -240} /* CG,TA,E,E,E */
02188      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,E,E,A */
02189      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,E,E,C */
02190      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,E,E,G */
02191      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,E,E,T */
02192      }
02193      , {{ -190,    -230,    -190,    -240,    -270} /* CG,TA,E,A,E */
02194      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,E,A,A */
02195      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,E,A,C */
02196      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,E,A,G */
02197      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,E,A,T */
02198      }
02199      , {{ -160,    -200,    -160,    -210,    -240} /* CG,TA,E,C,E */
02200      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,E,C,A */
02201      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,E,C,C */
02202      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,E,C,G */
02203      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,E,C,T */
02204      }
02205      , {{ -350,    -390,    -350,    -400,    -430} /* CG,TA,E,G,E */
02206      , { -350,    -390,    -350,    -400,    -430} /* CG,TA,E,G,A */
02207      , { -350,    -390,    -350,    -400,    -430} /* CG,TA,E,G,C */
02208      , { -350,    -390,    -350,    -400,    -430} /* CG,TA,E,G,G */
02209      , { -350,    -390,    -350,    -400,    -430} /* CG,TA,E,G,T */
02210      }
02211      , {{{ -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,E,T,E */
02212      , { -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,E,T,A */
02213      , { -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,E,T,C */
02214      , { -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,E,T,G */
02215      , { -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,E,T,T */
02216      }
02217      }
02218      , {{{ -160,    -200,    -160,    -210,    -240} /* CG,TA,A,E,E */
02219      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,A,E,A */
02220      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,A,E,C */
02221      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,A,E,G */
02222      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,A,E,T */
02223      }
02224      , {{ -190,    -230,    -190,    -240,    -270} /* CG,TA,A,A,E */
02225      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,A,A,A */
02226      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,A,A,C */
02227      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,A,A,G */
02228      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,A,A,T */
02229      }
02230      , {{ -160,    -200,    -160,    -210,    -240} /* CG,TA,A,C,E */
02231      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,A,C,A */
02232      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,A,C,C */
02233      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,A,C,G */
02234      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,A,C,T */
02235      }
02236      , {{ -350,    -390,    -350,    -400,    -430} /* CG,TA,A,G,E */
02237      , { -350,    -390,    -350,    -400,    -430} /* CG,TA,A,G,A */
02238      , { -350,    -390,    -350,    -400,    -430} /* CG,TA,A,G,C */
02239      , { -350,    -390,    -350,    -400,    -430} /* CG,TA,A,G,G */
02240      , { -350,    -390,    -350,    -400,    -430} /* CG,TA,A,G,T */
02241      }
02242      , {{{ -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,A,T,E */
02243      , { -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,A,T,A */
02244      , { -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,A,T,C */
02245      , { -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,A,T,G */
02246      , { -1000,   -1040,   -1000,   -1050,   -1080} /* CG,TA,A,T,T */
02247      }
02248      }
02249      , {{{ -160,    -200,    -160,    -210,    -240} /* CG,TA,C,E,E */
02250      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,C,E,A */
02251      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,C,E,C */
02252      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,C,E,G */
02253      , { -160,    -200,    -160,    -210,    -240} /* CG,TA,C,E,T */
02254      }
02255      , {{ -190,    -230,    -190,    -240,    -270} /* CG,TA,C,A,E */
02256      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,C,A,A */
02257      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,C,A,C */
02258      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,C,A,G */
02259      , { -190,    -230,    -190,    -240,    -270} /* CG,TA,C,A,T */
02260      }

```

```

02261 ,{{ -160, -200, -160, -210, -240} /* CG,TA,C,C,E */
02262 ,{ -160, -200, -160, -210, -240} /* CG,TA,C,C,A */
02263 ,{ -160, -200, -160, -210, -240} /* CG,TA,C,C,C */
02264 ,{ -160, -200, -160, -210, -240} /* CG,TA,C,C,G */
02265 ,{ -160, -200, -160, -210, -240} /* CG,TA,C,C,T */
02266 }
02267 ,{{ -350, -390, -350, -400, -430} /* CG,TA,C,G,E */
02268 ,{ -350, -390, -350, -400, -430} /* CG,TA,C,G,A */
02269 ,{ -350, -390, -350, -400, -430} /* CG,TA,C,G,C */
02270 ,{ -350, -390, -350, -400, -430} /* CG,TA,C,G,G */
02271 ,{ -350, -390, -350, -400, -430} /* CG,TA,C,G,T */
02272 }
02273 ,{{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,C,T,E */
02274 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,C,T,A */
02275 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,C,T,C */
02276 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,C,T,G */
02277 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,C,T,T */
02278 }
02279 }
02280 ,{{{ -160, -200, -160, -210, -240} /* CG,TA,G,E,E */
02281 ,{ -160, -200, -160, -210, -240} /* CG,TA,G,E,A */
02282 ,{ -160, -200, -160, -210, -240} /* CG,TA,G,E,C */
02283 ,{ -160, -200, -160, -210, -240} /* CG,TA,G,E,G */
02284 ,{ -160, -200, -160, -210, -240} /* CG,TA,G,E,T */
02285 }
02286 ,{{ -190, -230, -190, -240, -270} /* CG,TA,G,A,E */
02287 ,{ -190, -230, -190, -240, -270} /* CG,TA,G,A,A */
02288 ,{ -190, -230, -190, -240, -270} /* CG,TA,G,A,C */
02289 ,{ -190, -230, -190, -240, -270} /* CG,TA,G,A,G */
02290 ,{ -190, -230, -190, -240, -270} /* CG,TA,G,A,T */
02291 }
02292 ,{{ -160, -200, -160, -210, -240} /* CG,TA,G,C,E */
02293 ,{ -160, -200, -160, -210, -240} /* CG,TA,G,C,A */
02294 ,{ -160, -200, -160, -210, -240} /* CG,TA,G,C,C */
02295 ,{ -160, -200, -160, -210, -240} /* CG,TA,G,C,G */
02296 ,{ -160, -200, -160, -210, -240} /* CG,TA,G,C,T */
02297 }
02298 ,{{ -350, -390, -350, -400, -430} /* CG,TA,G,G,E */
02299 ,{ -350, -390, -350, -400, -430} /* CG,TA,G,G,A */
02300 ,{ -350, -390, -350, -400, -430} /* CG,TA,G,G,C */
02301 ,{ -350, -390, -350, -400, -430} /* CG,TA,G,G,G */
02302 ,{ -350, -390, -350, -400, -430} /* CG,TA,G,G,T */
02303 }
02304 ,{{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,G,T,E */
02305 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,G,T,A */
02306 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,G,T,C */
02307 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,G,T,G */
02308 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,G,T,T */
02309 }
02310 }
02311 ,{{{ -160, -200, -160, -210, -240} /* CG,TA,T,E,E */
02312 ,{ -160, -200, -160, -210, -240} /* CG,TA,T,E,A */
02313 ,{ -160, -200, -160, -210, -240} /* CG,TA,T,E,C */
02314 ,{ -160, -200, -160, -210, -240} /* CG,TA,T,E,G */
02315 ,{ -160, -200, -160, -210, -240} /* CG,TA,T,E,T */
02316 }
02317 ,{{ -190, -230, -190, -240, -270} /* CG,TA,T,A,E */
02318 ,{ -190, -230, -190, -240, -270} /* CG,TA,T,A,A */
02319 ,{ -190, -230, -190, -240, -270} /* CG,TA,T,A,C */
02320 ,{ -190, -230, -190, -240, -270} /* CG,TA,T,A,G */
02321 ,{ -190, -230, -190, -240, -270} /* CG,TA,T,A,T */
02322 }
02323 ,{{ -160, -200, -160, -210, -240} /* CG,TA,T,C,E */
02324 ,{ -160, -200, -160, -210, -240} /* CG,TA,T,C,A */
02325 ,{ -160, -200, -160, -210, -240} /* CG,TA,T,C,C */
02326 ,{ -160, -200, -160, -210, -240} /* CG,TA,T,C,G */
02327 ,{ -160, -200, -160, -210, -240} /* CG,TA,T,C,T */
02328 }
02329 ,{{ -350, -390, -350, -400, -430} /* CG,TA,T,G,E */
02330 ,{ -350, -390, -350, -400, -430} /* CG,TA,T,G,A */
02331 ,{ -350, -390, -350, -400, -430} /* CG,TA,T,G,C */
02332 ,{ -350, -390, -350, -400, -430} /* CG,TA,T,G,G */
02333 ,{ -350, -390, -350, -400, -430} /* CG,TA,T,G,T */
02334 }
02335 ,{{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,T,T,E */
02336 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,T,T,A */
02337 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,T,T,C */
02338 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,T,T,G */
02339 ,{ -1000, -1040, -1000, -1050, -1080} /* CG,TA,T,T,T */
02340 }
02341 }
02342 }
02343 ,{{{ 100, 60, 100, 50, 20} /* CG,NN,E,E,E */
02344 ,{ 100, 60, 100, 50, 20} /* CG,NN,E,E,A */
02345 ,{ 100, 60, 100, 50, 20} /* CG,NN,E,E,C */
02346 ,{ 100, 60, 100, 50, 20} /* CG,NN,E,E,G */
02347 ,{ 100, 60, 100, 50, 20} /* CG,NN,E,E,T */

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```
02348     }
02349     ,{{      -20,      -60,      -20,      -70,      -100} /* CG,NN,E,A,E */
02350     ,{       -20,      -60,      -20,      -70,      -100} /* CG,NN,E,A,A */
02351     ,{       -20,      -60,      -20,      -70,      -100} /* CG,NN,E,A,C */
02352     ,{       -20,      -60,      -20,      -70,      -100} /* CG,NN,E,A,G */
02353     ,{       -20,      -60,      -20,      -70,      -100} /* CG,NN,E,A,T */
02354     }
02355     ,{{      100,      60,      100,      50,      20} /* CG,NN,E,C,E */
02356     ,{      100,      60,      100,      50,      20} /* CG,NN,E,C,A */
02357     ,{      100,      60,      100,      50,      20} /* CG,NN,E,C,C */
02358     ,{      100,      60,      100,      50,      20} /* CG,NN,E,C,G */
02359     ,{      100,      60,      100,      50,      20} /* CG,NN,E,C,T */
02360     }
02361     ,{{       50,      10,      50,      0,      -30} /* CG,NN,E,G,E */
02362     ,{       50,      10,      50,      0,      -30} /* CG,NN,E,G,A */
02363     ,{       50,      10,      50,      0,      -30} /* CG,NN,E,G,C */
02364     ,{       50,      10,      50,      0,      -30} /* CG,NN,E,G,G */
02365     ,{       50,      10,      50,      0,      -30} /* CG,NN,E,G,T */
02366     }
02367     ,{{       10,     -30,      10,     -40,     -70} /* CG,NN,E,T,E */
02368     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,E,T,A */
02369     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,E,T,C */
02370     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,E,T,G */
02371     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,E,T,T */
02372     }
02373     }
02374     ,{{{      100,      60,      100,      50,      20} /* CG,NN,A,E,E */
02375     ,{      100,      60,      100,      50,      20} /* CG,NN,A,E,A */
02376     ,{      100,      60,      100,      50,      20} /* CG,NN,A,E,C */
02377     ,{      100,      60,      100,      50,      20} /* CG,NN,A,E,G */
02378     ,{      100,      60,      100,      50,      20} /* CG,NN,A,E,T */
02379     }
02380     ,{{{     -20,     -60,     -20,     -70,    -100} /* CG,NN,A,A,E */
02381     ,{     -20,     -60,     -20,     -70,    -100} /* CG,NN,A,A,A */
02382     ,{     -20,     -60,     -20,     -70,    -100} /* CG,NN,A,A,C */
02383     ,{     -20,     -60,     -20,     -70,    -100} /* CG,NN,A,A,G */
02384     ,{     -20,     -60,     -20,     -70,    -100} /* CG,NN,A,A,T */
02385     }
02386     ,{{{      100,      60,      100,      50,      20} /* CG,NN,A,C,E */
02387     ,{      100,      60,      100,      50,      20} /* CG,NN,A,C,A */
02388     ,{      100,      60,      100,      50,      20} /* CG,NN,A,C,C */
02389     ,{      100,      60,      100,      50,      20} /* CG,NN,A,C,G */
02390     ,{      100,      60,      100,      50,      20} /* CG,NN,A,C,T */
02391     }
02392     ,{{{       50,      10,      50,      0,     -30} /* CG,NN,A,G,E */
02393     ,{       50,      10,      50,      0,     -30} /* CG,NN,A,G,A */
02394     ,{       50,      10,      50,      0,     -30} /* CG,NN,A,G,C */
02395     ,{       50,      10,      50,      0,     -30} /* CG,NN,A,G,G */
02396     ,{       50,      10,      50,      0,     -30} /* CG,NN,A,G,T */
02397     }
02398     ,{{{       10,     -30,      10,     -40,     -70} /* CG,NN,A,T,E */
02399     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,A,T,A */
02400     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,A,T,C */
02401     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,A,T,G */
02402     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,A,T,T */
02403     }
02404     }
02405     ,{{{      100,      60,      100,      50,      20} /* CG,NN,C,E,E */
02406     ,{      100,      60,      100,      50,      20} /* CG,NN,C,E,A */
02407     ,{      100,      60,      100,      50,      20} /* CG,NN,C,E,C */
02408     ,{      100,      60,      100,      50,      20} /* CG,NN,C,E,G */
02409     ,{      100,      60,      100,      50,      20} /* CG,NN,C,E,T */
02410     }
02411     ,{{{     -20,     -60,     -20,     -70,    -100} /* CG,NN,C,A,E */
02412     ,{     -20,     -60,     -20,     -70,    -100} /* CG,NN,C,A,A */
02413     ,{     -20,     -60,     -20,     -70,    -100} /* CG,NN,C,A,C */
02414     ,{     -20,     -60,     -20,     -70,    -100} /* CG,NN,C,A,G */
02415     ,{     -20,     -60,     -20,     -70,    -100} /* CG,NN,C,A,T */
02416     }
02417     ,{{{      100,      60,      100,      50,      20} /* CG,NN,C,C,E */
02418     ,{      100,      60,      100,      50,      20} /* CG,NN,C,C,A */
02419     ,{      100,      60,      100,      50,      20} /* CG,NN,C,C,C */
02420     ,{      100,      60,      100,      50,      20} /* CG,NN,C,C,G */
02421     ,{      100,      60,      100,      50,      20} /* CG,NN,C,C,T */
02422     }
02423     ,{{{       50,      10,      50,      0,     -30} /* CG,NN,C,G,E */
02424     ,{       50,      10,      50,      0,     -30} /* CG,NN,C,G,A */
02425     ,{       50,      10,      50,      0,     -30} /* CG,NN,C,G,C */
02426     ,{       50,      10,      50,      0,     -30} /* CG,NN,C,G,G */
02427     ,{       50,      10,      50,      0,     -30} /* CG,NN,C,G,T */
02428     }
02429     ,{{{       10,     -30,      10,     -40,     -70} /* CG,NN,C,T,E */
02430     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,C,T,A */
02431     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,C,T,C */
02432     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,C,T,G */
02433     ,{       10,     -30,      10,     -40,     -70} /* CG,NN,C,T,T */
02434     }
```

```

02435     }
02436     ,{{{ 100, 60, 100, 50, 20} /* CG,NN,G,E,E */
02437     ,{ 100, 60, 100, 50, 20} /* CG,NN,G,E,A */
02438     ,{ 100, 60, 100, 50, 20} /* CG,NN,G,E,C */
02439     ,{ 100, 60, 100, 50, 20} /* CG,NN,G,E,G */
02440     ,{ 100, 60, 100, 50, 20} /* CG,NN,G,E,T */
02441     }
02442     ,{{{ -20, -60, -20, -70, -100} /* CG,NN,G,A,E */
02443     ,{ -20, -60, -20, -70, -100} /* CG,NN,G,A,A */
02444     ,{ -20, -60, -20, -70, -100} /* CG,NN,G,A,C */
02445     ,{ -20, -60, -20, -70, -100} /* CG,NN,G,A,G */
02446     ,{ -20, -60, -20, -70, -100} /* CG,NN,G,A,T */
02447     }
02448     ,{{{ 100, 60, 100, 50, 20} /* CG,NN,G,C,E */
02449     ,{ 100, 60, 100, 50, 20} /* CG,NN,G,C,A */
02450     ,{ 100, 60, 100, 50, 20} /* CG,NN,G,C,C */
02451     ,{ 100, 60, 100, 50, 20} /* CG,NN,G,C,G */
02452     ,{ 100, 60, 100, 50, 20} /* CG,NN,G,C,T */
02453     }
02454     ,{{{ 50, 10, 50, 0, -30} /* CG,NN,G,G,E */
02455     ,{ 50, 10, 50, 0, -30} /* CG,NN,G,G,A */
02456     ,{ 50, 10, 50, 0, -30} /* CG,NN,G,G,C */
02457     ,{ 50, 10, 50, 0, -30} /* CG,NN,G,G,G */
02458     ,{ 50, 10, 50, 0, -30} /* CG,NN,G,G,T */
02459     }
02460     ,{{{ 10, -30, 10, -40, -70} /* CG,NN,G,T,E */
02461     ,{ 10, -30, 10, -40, -70} /* CG,NN,G,T,A */
02462     ,{ 10, -30, 10, -40, -70} /* CG,NN,G,T,C */
02463     ,{ 10, -30, 10, -40, -70} /* CG,NN,G,T,G */
02464     ,{ 10, -30, 10, -40, -70} /* CG,NN,G,T,T */
02465     }
02466     }
02467     ,{{{ 100, 60, 100, 50, 20} /* CG,NN,T,E,E */
02468     ,{ 100, 60, 100, 50, 20} /* CG,NN,T,E,A */
02469     ,{ 100, 60, 100, 50, 20} /* CG,NN,T,E,C */
02470     ,{ 100, 60, 100, 50, 20} /* CG,NN,T,E,G */
02471     ,{ 100, 60, 100, 50, 20} /* CG,NN,T,E,T */
02472     }
02473     ,{{{ -20, -60, -20, -70, -100} /* CG,NN,T,A,E */
02474     ,{ -20, -60, -20, -70, -100} /* CG,NN,T,A,A */
02475     ,{ -20, -60, -20, -70, -100} /* CG,NN,T,A,C */
02476     ,{ -20, -60, -20, -70, -100} /* CG,NN,T,A,G */
02477     ,{ -20, -60, -20, -70, -100} /* CG,NN,T,A,T */
02478     }
02479     ,{{{ 100, 60, 100, 50, 20} /* CG,NN,T,C,E */
02480     ,{ 100, 60, 100, 50, 20} /* CG,NN,T,C,A */
02481     ,{ 100, 60, 100, 50, 20} /* CG,NN,T,C,C */
02482     ,{ 100, 60, 100, 50, 20} /* CG,NN,T,C,G */
02483     ,{ 100, 60, 100, 50, 20} /* CG,NN,T,C,T */
02484     }
02485     ,{{{ 50, 10, 50, 0, -30} /* CG,NN,T,G,E */
02486     ,{ 50, 10, 50, 0, -30} /* CG,NN,T,G,A */
02487     ,{ 50, 10, 50, 0, -30} /* CG,NN,T,G,C */
02488     ,{ 50, 10, 50, 0, -30} /* CG,NN,T,G,G */
02489     ,{ 50, 10, 50, 0, -30} /* CG,NN,T,G,T */
02490     }
02491     ,{{{ 10, -30, 10, -40, -70} /* CG,NN,T,T,E */
02492     ,{ 10, -30, 10, -40, -70} /* CG,NN,T,T,A */
02493     ,{ 10, -30, 10, -40, -70} /* CG,NN,T,T,C */
02494     ,{ 10, -30, 10, -40, -70} /* CG,NN,T,T,G */
02495     ,{ 10, -30, 10, -40, -70} /* CG,NN,T,T,T */
02496     }
02497     }
02498     }
02499     }
02500     ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,E,E */
02501     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,A */
02502     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,C */
02503     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,G */
02504     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,E,T */
02505     }
02506     ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,A,E */
02507     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,A */
02508     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,C */
02509     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,G */
02510     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,A,T */
02511     }
02512     ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,C,E */
02513     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C,A */
02514     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C,C */
02515     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C,G */
02516     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,C,T */
02517     }
02518     ,{{{ INF, INF, INF, INF, INF} /* GC,NP,E,G,E */
02519     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,G,A */
02520     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,G,C */
02521     ,{ INF, INF, INF, INF, INF} /* GC,NP,E,G,G */

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02522      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, G, T */
02523      }
02524      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, T, E */
02525      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, T, A */
02526      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, T, C */
02527      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, T, G */
02528      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, E, T, T */
02529      }
02530      }
02531      , { { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, E */
02532      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, A */
02533      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, C */
02534      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, G */
02535      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, E, T */
02536      }
02537      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, E */
02538      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, A */
02539      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, C */
02540      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, G */
02541      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, A, T */
02542      }
02543      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, E */
02544      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, A */
02545      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, C */
02546      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, G */
02547      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, C, T */
02548      }
02549      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, E */
02550      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, A */
02551      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, C */
02552      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, G */
02553      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, G, T */
02554      }
02555      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, T, E */
02556      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, T, A */
02557      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, T, C */
02558      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, T, G */
02559      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, A, T, T */
02560      }
02561      }
02562      , { { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, E */
02563      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, A */
02564      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, C */
02565      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, G */
02566      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, E, T */
02567      }
02568      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, E */
02569      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, A */
02570      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, C */
02571      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, G */
02572      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, A, T */
02573      }
02574      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, E */
02575      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, A */
02576      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, C */
02577      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, G */
02578      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, C, T */
02579      }
02580      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, G, E */
02581      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, C, G, A */
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02599      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, A, E */
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02602      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, A, G */
02603      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, A, T */
02604      }
02605      , { {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, E */
02606      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, A */
02607      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, C */
02608      , {      INF,      INF,      INF,      INF,      INF} /* GC, NP, G, C, G */

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02638 , { INF, INF, INF, INF, INF } /* GC,NP,T,C,C */
02639 , { INF, INF, INF, INF, INF } /* GC,NP,T,C,G */
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02677 , { -560, -1090, -800, -980, -560 } /* GC,CG,E,G,G */
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02679 }
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02689 , { -510, -1040, -750, -930, -510 } /* GC,CG,A,E,C */
02690 , { -510, -1040, -750, -930, -510 } /* GC,CG,A,E,G */
02691 , { -510, -1040, -750, -930, -510 } /* GC,CG,A,E,T */
02692 }
02693 , { { -550, -1080, -790, -970, -550 } /* GC,CG,A,A,E */
02694 , { -550, -1080, -790, -970, -550 } /* GC,CG,A,A,A */
02695 , { -550, -1080, -790, -970, -550 } /* GC,CG,A,A,C */

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02697 , { -550, -1080, -790, -970, -550} /* GC,CG,A,A,T */
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02699 , {{ -510, -1040, -750, -930, -510} /* GC,CG,A,C,E */
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02707 , { -560, -1090, -800, -980, -560} /* GC,CG,A,G,C */
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02709 , { -560, -1090, -800, -980, -560} /* GC,CG,A,G,T */
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02721 , { -510, -1040, -750, -930, -510} /* GC,CG,C,E,G */
02722 , { -510, -1040, -750, -930, -510} /* GC,CG,C,E,T */
02723 }
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02727 , { -550, -1080, -790, -970, -550} /* GC,CG,C,A,G */
02728 , { -550, -1080, -790, -970, -550} /* GC,CG,C,A,T */
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02734 , { -510, -1040, -750, -930, -510} /* GC,CG,C,C,T */
02735 }
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02754 }
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02759 , { -550, -1080, -790, -970, -550} /* GC,CG,G,A,T */
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02763 , { -510, -1040, -750, -930, -510} /* GC,CG,G,C,C */
02764 , { -510, -1040, -750, -930, -510} /* GC,CG,G,C,G */
02765 , { -510, -1040, -750, -930, -510} /* GC,CG,G,C,T */
02766 }
02767 , {{ -560, -1090, -800, -980, -560} /* GC,CG,G,G,E */
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02838 , { -180, -710, -420, -600, -180} /* GC,GC,E,T,C */
02839 , { -180, -710, -420, -600, -180} /* GC,GC,E,T,G */
02840 , { -180, -710, -420, -600, -180} /* GC,GC,E,T,T */
02841 }
02842 }
02843 , {{{ -180, -710, -420, -600, -180} /* GC,GC,A,E,E */
02844 , { -180, -710, -420, -600, -180} /* GC,GC,A,E,A */
02845 , { -180, -710, -420, -600, -180} /* GC,GC,A,E,C */
02846 , { -180, -710, -420, -600, -180} /* GC,GC,A,E,G */
02847 , { -180, -710, -420, -600, -180} /* GC,GC,A,E,T */
02848 }
02849 , {{ -710, -1240, -950, -1130, -710} /* GC,GC,A,A,E */
02850 , { -710, -1240, -950, -1130, -710} /* GC,GC,A,A,A */
02851 , { -710, -1240, -950, -1130, -710} /* GC,GC,A,A,C */
02852 , { -710, -1240, -950, -1130, -710} /* GC,GC,A,A,G */
02853 , { -710, -1240, -950, -1130, -710} /* GC,GC,A,A,T */
02854 }
02855 , {{ -420, -950, -660, -840, -420} /* GC,GC,A,C,E */
02856 , { -420, -950, -660, -840, -420} /* GC,GC,A,C,A */
02857 , { -420, -950, -660, -840, -420} /* GC,GC,A,C,C */
02858 , { -420, -950, -660, -840, -420} /* GC,GC,A,C,G */
02859 , { -420, -950, -660, -840, -420} /* GC,GC,A,C,T */
02860 }
02861 , {{ -600, -1130, -840, -1020, -600} /* GC,GC,A,G,E */
02862 , { -600, -1130, -840, -1020, -600} /* GC,GC,A,G,A */
02863 , { -600, -1130, -840, -1020, -600} /* GC,GC,A,G,C */
02864 , { -600, -1130, -840, -1020, -600} /* GC,GC,A,G,G */
02865 , { -600, -1130, -840, -1020, -600} /* GC,GC,A,G,T */
02866 }
02867 , {{ -180, -710, -420, -600, -180} /* GC,GC,A,T,E */
02868 , { -180, -710, -420, -600, -180} /* GC,GC,A,T,A */
02869 , { -180, -710, -420, -600, -180} /* GC,GC,A,T,C */

```

```
02870 , { -180, -710, -420, -600, -180} /* GC,GC,A,T,G */
02871 , { -180, -710, -420, -600, -180} /* GC,GC,A,T,T */
02872 }
02873 }
02874 , {{{ -180, -710, -420, -600, -180} /* GC,GC,C,E,E */
02875 , { -180, -710, -420, -600, -180} /* GC,GC,C,E,A */
02876 , { -180, -710, -420, -600, -180} /* GC,GC,C,E,C */
02877 , { -180, -710, -420, -600, -180} /* GC,GC,C,E,G */
02878 , { -180, -710, -420, -600, -180} /* GC,GC,C,E,T */
02879 }
02880 , {{{ -710, -1240, -950, -1130, -710} /* GC,GC,C,A,E */
02881 , { -710, -1240, -950, -1130, -710} /* GC,GC,C,A,A */
02882 , { -710, -1240, -950, -1130, -710} /* GC,GC,C,A,C */
02883 , { -710, -1240, -950, -1130, -710} /* GC,GC,C,A,G */
02884 , { -710, -1240, -950, -1130, -710} /* GC,GC,C,A,T */
02885 }
02886 , {{{ -420, -950, -660, -840, -420} /* GC,GC,C,C,E */
02887 , { -420, -950, -660, -840, -420} /* GC,GC,C,C,A */
02888 , { -420, -950, -660, -840, -420} /* GC,GC,C,C,C */
02889 , { -420, -950, -660, -840, -420} /* GC,GC,C,C,G */
02890 , { -420, -950, -660, -840, -420} /* GC,GC,C,C,T */
02891 }
02892 , {{{ -600, -1130, -840, -1020, -600} /* GC,GC,C,G,E */
02893 , { -600, -1130, -840, -1020, -600} /* GC,GC,C,G,A */
02894 , { -600, -1130, -840, -1020, -600} /* GC,GC,C,G,C */
02895 , { -600, -1130, -840, -1020, -600} /* GC,GC,C,G,G */
02896 , { -600, -1130, -840, -1020, -600} /* GC,GC,C,G,T */
02897 }
02898 , {{{ -180, -710, -420, -600, -180} /* GC,GC,C,T,E */
02899 , { -180, -710, -420, -600, -180} /* GC,GC,C,T,A */
02900 , { -180, -710, -420, -600, -180} /* GC,GC,C,T,C */
02901 , { -180, -710, -420, -600, -180} /* GC,GC,C,T,G */
02902 , { -180, -710, -420, -600, -180} /* GC,GC,C,T,T */
02903 }
02904 }
02905 , {{{ -180, -710, -420, -600, -180} /* GC,GC,G,E,E */
02906 , { -180, -710, -420, -600, -180} /* GC,GC,G,E,A */
02907 , { -180, -710, -420, -600, -180} /* GC,GC,G,E,C */
02908 , { -180, -710, -420, -600, -180} /* GC,GC,G,E,G */
02909 , { -180, -710, -420, -600, -180} /* GC,GC,G,E,T */
02910 }
02911 , {{{ -710, -1240, -950, -1130, -710} /* GC,GC,G,A,E */
02912 , { -710, -1240, -950, -1130, -710} /* GC,GC,G,A,A */
02913 , { -710, -1240, -950, -1130, -710} /* GC,GC,G,A,C */
02914 , { -710, -1240, -950, -1130, -710} /* GC,GC,G,A,G */
02915 , { -710, -1240, -950, -1130, -710} /* GC,GC,G,A,T */
02916 }
02917 , {{{ -420, -950, -660, -840, -420} /* GC,GC,G,C,E */
02918 , { -420, -950, -660, -840, -420} /* GC,GC,G,C,A */
02919 , { -420, -950, -660, -840, -420} /* GC,GC,G,C,C */
02920 , { -420, -950, -660, -840, -420} /* GC,GC,G,C,G */
02921 , { -420, -950, -660, -840, -420} /* GC,GC,G,C,T */
02922 }
02923 , {{{ -600, -1130, -840, -1020, -600} /* GC,GC,G,G,E */
02924 , { -600, -1130, -840, -1020, -600} /* GC,GC,G,G,A */
02925 , { -600, -1130, -840, -1020, -600} /* GC,GC,G,G,C */
02926 , { -600, -1130, -840, -1020, -600} /* GC,GC,G,G,G */
02927 , { -600, -1130, -840, -1020, -600} /* GC,GC,G,G,T */
02928 }
02929 , {{{ -180, -710, -420, -600, -180} /* GC,GC,G,T,E */
02930 , { -180, -710, -420, -600, -180} /* GC,GC,G,T,A */
02931 , { -180, -710, -420, -600, -180} /* GC,GC,G,T,C */
02932 , { -180, -710, -420, -600, -180} /* GC,GC,G,T,G */
02933 , { -180, -710, -420, -600, -180} /* GC,GC,G,T,T */
02934 }
02935 }
02936 , {{{ -180, -710, -420, -600, -180} /* GC,GC,T,E,E */
02937 , { -180, -710, -420, -600, -180} /* GC,GC,T,E,A */
02938 , { -180, -710, -420, -600, -180} /* GC,GC,T,E,C */
02939 , { -180, -710, -420, -600, -180} /* GC,GC,T,E,G */
02940 , { -180, -710, -420, -600, -180} /* GC,GC,T,E,T */
02941 }
02942 , {{{ -710, -1240, -950, -1130, -710} /* GC,GC,T,A,E */
02943 , { -710, -1240, -950, -1130, -710} /* GC,GC,T,A,A */
02944 , { -710, -1240, -950, -1130, -710} /* GC,GC,T,A,C */
02945 , { -710, -1240, -950, -1130, -710} /* GC,GC,T,A,G */
02946 , { -710, -1240, -950, -1130, -710} /* GC,GC,T,A,T */
02947 }
02948 , {{{ -420, -950, -660, -840, -420} /* GC,GC,T,C,E */
02949 , { -420, -950, -660, -840, -420} /* GC,GC,T,C,A */
02950 , { -420, -950, -660, -840, -420} /* GC,GC,T,C,C */
02951 , { -420, -950, -660, -840, -420} /* GC,GC,T,C,G */
02952 , { -420, -950, -660, -840, -420} /* GC,GC,T,C,T */
02953 }
02954 , {{{ -600, -1130, -840, -1020, -600} /* GC,GC,T,G,E */
02955 , { -600, -1130, -840, -1020, -600} /* GC,GC,T,G,A */
02956 , { -600, -1130, -840, -1020, -600} /* GC,GC,T,G,C */
```

```

02957      , { -600, -1130, -840, -1020, -600} /* GC,GC,T,G,G */
02958      , { -600, -1130, -840, -1020, -600} /* GC,GC,T,G,T */
02959      }
02960      , {{ -180, -710, -420, -600, -180} /* GC,GC,T,T,E */
02961      , { -180, -710, -420, -600, -180} /* GC,GC,T,T,A */
02962      , { -180, -710, -420, -600, -180} /* GC,GC,T,T,C */
02963      , { -180, -710, -420, -600, -180} /* GC,GC,T,T,G */
02964      , { -180, -710, -420, -600, -180} /* GC,GC,T,T,T */
02965      }
02966      }
02967      }
02968      , {{{ 140, -390, -100, -280, 140} /* GC,GT,E,E,E */
02969      , { 140, -390, -100, -280, 140} /* GC,GT,E,E,A */
02970      , { 140, -390, -100, -280, 140} /* GC,GT,E,E,C */
02971      , { 140, -390, -100, -280, 140} /* GC,GT,E,E,G */
02972      , { 140, -390, -100, -280, 140} /* GC,GT,E,E,T */
02973      }
02974      , {{ -390, -920, -630, -810, -390} /* GC,GT,E,A,E */
02975      , { -390, -920, -630, -810, -390} /* GC,GT,E,A,A */
02976      , { -390, -920, -630, -810, -390} /* GC,GT,E,A,C */
02977      , { -390, -920, -630, -810, -390} /* GC,GT,E,A,G */
02978      , { -390, -920, -630, -810, -390} /* GC,GT,E,A,T */
02979      }
02980      , {{{ -100, -630, -340, -520, -100} /* GC,GT,E,C,E */
02981      , { -100, -630, -340, -520, -100} /* GC,GT,E,C,A */
02982      , { -100, -630, -340, -520, -100} /* GC,GT,E,C,C */
02983      , { -100, -630, -340, -520, -100} /* GC,GT,E,C,G */
02984      , { -100, -630, -340, -520, -100} /* GC,GT,E,C,T */
02985      }
02986      , {{{ -280, -810, -520, -700, -280} /* GC,GT,E,G,E */
02987      , { -280, -810, -520, -700, -280} /* GC,GT,E,G,A */
02988      , { -280, -810, -520, -700, -280} /* GC,GT,E,G,C */
02989      , { -280, -810, -520, -700, -280} /* GC,GT,E,G,G */
02990      , { -280, -810, -520, -700, -280} /* GC,GT,E,G,T */
02991      }
02992      , {{{ 140, -390, -100, -280, 140} /* GC,GT,E,T,E */
02993      , { 140, -390, -100, -280, 140} /* GC,GT,E,T,A */
02994      , { 140, -390, -100, -280, 140} /* GC,GT,E,T,C */
02995      , { 140, -390, -100, -280, 140} /* GC,GT,E,T,G */
02996      , { 140, -390, -100, -280, 140} /* GC,GT,E,T,T */
02997      }
02998      }
02999      , {{{ 140, -390, -100, -280, 140} /* GC,GT,A,E,E */
03000      , { 140, -390, -100, -280, 140} /* GC,GT,A,E,A */
03001      , { 140, -390, -100, -280, 140} /* GC,GT,A,E,C */
03002      , { 140, -390, -100, -280, 140} /* GC,GT,A,E,G */
03003      , { 140, -390, -100, -280, 140} /* GC,GT,A,E,T */
03004      }
03005      , {{{ -390, -920, -630, -810, -390} /* GC,GT,A,A,E */
03006      , { -390, -920, -630, -810, -390} /* GC,GT,A,A,A */
03007      , { -390, -920, -630, -810, -390} /* GC,GT,A,A,C */
03008      , { -390, -920, -630, -810, -390} /* GC,GT,A,A,G */
03009      , { -390, -920, -630, -810, -390} /* GC,GT,A,A,T */
03010      }
03011      , {{{ -100, -630, -340, -520, -100} /* GC,GT,A,C,E */
03012      , { -100, -630, -340, -520, -100} /* GC,GT,A,C,A */
03013      , { -100, -630, -340, -520, -100} /* GC,GT,A,C,C */
03014      , { -100, -630, -340, -520, -100} /* GC,GT,A,C,G */
03015      , { -100, -630, -340, -520, -100} /* GC,GT,A,C,T */
03016      }
03017      , {{{ -280, -810, -520, -700, -280} /* GC,GT,A,G,E */
03018      , { -280, -810, -520, -700, -280} /* GC,GT,A,G,A */
03019      , { -280, -810, -520, -700, -280} /* GC,GT,A,G,C */
03020      , { -280, -810, -520, -700, -280} /* GC,GT,A,G,G */
03021      , { -280, -810, -520, -700, -280} /* GC,GT,A,G,T */
03022      }
03023      , {{{ 140, -390, -100, -280, 140} /* GC,GT,A,T,E */
03024      , { 140, -390, -100, -280, 140} /* GC,GT,A,T,A */
03025      , { 140, -390, -100, -280, 140} /* GC,GT,A,T,C */
03026      , { 140, -390, -100, -280, 140} /* GC,GT,A,T,G */
03027      , { 140, -390, -100, -280, 140} /* GC,GT,A,T,T */
03028      }
03029      }
03030      , {{{ 140, -390, -100, -280, 140} /* GC,GT,C,E,E */
03031      , { 140, -390, -100, -280, 140} /* GC,GT,C,E,A */
03032      , { 140, -390, -100, -280, 140} /* GC,GT,C,E,C */
03033      , { 140, -390, -100, -280, 140} /* GC,GT,C,E,G */
03034      , { 140, -390, -100, -280, 140} /* GC,GT,C,E,T */
03035      }
03036      , {{{ -390, -920, -630, -810, -390} /* GC,GT,C,A,E */
03037      , { -390, -920, -630, -810, -390} /* GC,GT,C,A,A */
03038      , { -390, -920, -630, -810, -390} /* GC,GT,C,A,C */
03039      , { -390, -920, -630, -810, -390} /* GC,GT,C,A,G */
03040      , { -390, -920, -630, -810, -390} /* GC,GT,C,A,T */
03041      }
03042      , {{{ -100, -630, -340, -520, -100} /* GC,GT,C,C,E */
03043      , { -100, -630, -340, -520, -100} /* GC,GT,C,C,A */

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03044 , { -100, -630, -340, -520, -100} /* GC,GT,C,C,C */
03045 , { -100, -630, -340, -520, -100} /* GC,GT,C,C,G */
03046 , { -100, -630, -340, -520, -100} /* GC,GT,C,C,T */
03047 }
03048 , {{ -280, -810, -520, -700, -280} /* GC,GT,C,G,E */
03049 , { -280, -810, -520, -700, -280} /* GC,GT,C,G,A */
03050 , { -280, -810, -520, -700, -280} /* GC,GT,C,G,C */
03051 , { -280, -810, -520, -700, -280} /* GC,GT,C,G,G */
03052 , { -280, -810, -520, -700, -280} /* GC,GT,C,G,T */
03053 }
03054 , {{ 140, -390, -100, -280, 140} /* GC,GT,C,T,E */
03055 , { 140, -390, -100, -280, 140} /* GC,GT,C,T,A */
03056 , { 140, -390, -100, -280, 140} /* GC,GT,C,T,C */
03057 , { 140, -390, -100, -280, 140} /* GC,GT,C,T,G */
03058 , { 140, -390, -100, -280, 140} /* GC,GT,C,T,T */
03059 }
03060 }
03061 , {{{ 140, -390, -100, -280, 140} /* GC,GT,G,E,E */
03062 , { 140, -390, -100, -280, 140} /* GC,GT,G,E,A */
03063 , { 140, -390, -100, -280, 140} /* GC,GT,G,E,C */
03064 , { 140, -390, -100, -280, 140} /* GC,GT,G,E,G */
03065 , { 140, -390, -100, -280, 140} /* GC,GT,G,E,T */
03066 }
03067 , {{{ -390, -920, -630, -810, -390} /* GC,GT,G,A,E */
03068 , { -390, -920, -630, -810, -390} /* GC,GT,G,A,A */
03069 , { -390, -920, -630, -810, -390} /* GC,GT,G,A,C */
03070 , { -390, -920, -630, -810, -390} /* GC,GT,G,A,G */
03071 , { -390, -920, -630, -810, -390} /* GC,GT,G,A,T */
03072 }
03073 , {{{ -100, -630, -340, -520, -100} /* GC,GT,G,C,E */
03074 , { -100, -630, -340, -520, -100} /* GC,GT,G,C,A */
03075 , { -100, -630, -340, -520, -100} /* GC,GT,G,C,C */
03076 , { -100, -630, -340, -520, -100} /* GC,GT,G,C,G */
03077 , { -100, -630, -340, -520, -100} /* GC,GT,G,C,T */
03078 }
03079 , {{{ -280, -810, -520, -700, -280} /* GC,GT,G,G,E */
03080 , { -280, -810, -520, -700, -280} /* GC,GT,G,G,A */
03081 , { -280, -810, -520, -700, -280} /* GC,GT,G,G,C */
03082 , { -280, -810, -520, -700, -280} /* GC,GT,G,G,G */
03083 , { -280, -810, -520, -700, -280} /* GC,GT,G,G,T */
03084 }
03085 , {{{ 140, -390, -100, -280, 140} /* GC,GT,G,T,E */
03086 , { 140, -390, -100, -280, 140} /* GC,GT,G,T,A */
03087 , { 140, -390, -100, -280, 140} /* GC,GT,G,T,C */
03088 , { 140, -390, -100, -280, 140} /* GC,GT,G,T,G */
03089 , { 140, -390, -100, -280, 140} /* GC,GT,G,T,T */
03090 }
03091 }
03092 , {{{ 140, -390, -100, -280, 140} /* GC,GT,T,E,E */
03093 , { 140, -390, -100, -280, 140} /* GC,GT,T,E,A */
03094 , { 140, -390, -100, -280, 140} /* GC,GT,T,E,C */
03095 , { 140, -390, -100, -280, 140} /* GC,GT,T,E,G */
03096 , { 140, -390, -100, -280, 140} /* GC,GT,T,E,T */
03097 }
03098 , {{{ -390, -920, -630, -810, -390} /* GC,GT,T,A,E */
03099 , { -390, -920, -630, -810, -390} /* GC,GT,T,A,A */
03100 , { -390, -920, -630, -810, -390} /* GC,GT,T,A,C */
03101 , { -390, -920, -630, -810, -390} /* GC,GT,T,A,G */
03102 , { -390, -920, -630, -810, -390} /* GC,GT,T,A,T */
03103 }
03104 , {{{ -100, -630, -340, -520, -100} /* GC,GT,T,C,E */
03105 , { -100, -630, -340, -520, -100} /* GC,GT,T,C,A */
03106 , { -100, -630, -340, -520, -100} /* GC,GT,T,C,C */
03107 , { -100, -630, -340, -520, -100} /* GC,GT,T,C,G */
03108 , { -100, -630, -340, -520, -100} /* GC,GT,T,C,T */
03109 }
03110 , {{{ -280, -810, -520, -700, -280} /* GC,GT,T,G,E */
03111 , { -280, -810, -520, -700, -280} /* GC,GT,T,G,A */
03112 , { -280, -810, -520, -700, -280} /* GC,GT,T,G,C */
03113 , { -280, -810, -520, -700, -280} /* GC,GT,T,G,G */
03114 , { -280, -810, -520, -700, -280} /* GC,GT,T,G,T */
03115 }
03116 , {{{ 140, -390, -100, -280, 140} /* GC,GT,T,T,E */
03117 , { 140, -390, -100, -280, 140} /* GC,GT,T,T,A */
03118 , { 140, -390, -100, -280, 140} /* GC,GT,T,T,C */
03119 , { 140, -390, -100, -280, 140} /* GC,GT,T,T,G */
03120 , { 140, -390, -100, -280, 140} /* GC,GT,T,T,T */
03121 }
03122 }
03123 }
03124 , {{{ 170, -360, -70, -250, 170} /* GC,TG,E,E,E */
03125 , { 170, -360, -70, -250, 170} /* GC,TG,E,E,A */
03126 , { 170, -360, -70, -250, 170} /* GC,TG,E,E,C */
03127 , { 170, -360, -70, -250, 170} /* GC,TG,E,E,G */
03128 , { 170, -360, -70, -250, 170} /* GC,TG,E,E,T */
03129 }
03130 , {{{ 140, -390, -100, -280, 140} /* GC,TG,E,A,E */
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```

03131      , {      140,    -390,    -100,    -280,    140} /* GC, TG, E, A, A */
03132      , {      140,    -390,    -100,    -280,    140} /* GC, TG, E, A, C */
03133      , {      140,    -390,    -100,    -280,    140} /* GC, TG, E, A, G */
03134      , {      140,    -390,    -100,    -280,    140} /* GC, TG, E, A, T */
03135      }
03136      , { {      170,    -360,     -70,    -250,    170} /* GC, TG, E, C, E */
03137      , {      170,    -360,     -70,    -250,    170} /* GC, TG, E, C, A */
03138      , {      170,    -360,     -70,    -250,    170} /* GC, TG, E, C, C */
03139      , {      170,    -360,     -70,    -250,    170} /* GC, TG, E, C, G */
03140      , {      170,    -360,     -70,    -250,    170} /* GC, TG, E, C, T */
03141      }
03142      , { {     -20,    -550,    -260,    -440,    -20} /* GC, TG, E, G, E */
03143      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, E, G, A */
03144      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, E, G, C */
03145      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, E, G, G */
03146      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, E, G, T */
03147      }
03148      , { {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, E, T, E */
03149      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, E, T, A */
03150      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, E, T, C */
03151      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, E, T, G */
03152      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, E, T, T */
03153      }
03154      }
03155      , { { {      170,    -360,     -70,    -250,    170} /* GC, TG, A, E, E */
03156      , {      170,    -360,     -70,    -250,    170} /* GC, TG, A, E, A */
03157      , {      170,    -360,     -70,    -250,    170} /* GC, TG, A, E, C */
03158      , {      170,    -360,     -70,    -250,    170} /* GC, TG, A, E, G */
03159      , {      170,    -360,     -70,    -250,    170} /* GC, TG, A, E, T */
03160      }
03161      , { {      140,    -390,    -100,    -280,    140} /* GC, TG, A, A, E */
03162      , {      140,    -390,    -100,    -280,    140} /* GC, TG, A, A, A */
03163      , {      140,    -390,    -100,    -280,    140} /* GC, TG, A, A, C */
03164      , {      140,    -390,    -100,    -280,    140} /* GC, TG, A, A, G */
03165      , {      140,    -390,    -100,    -280,    140} /* GC, TG, A, A, T */
03166      }
03167      , { {      170,    -360,     -70,    -250,    170} /* GC, TG, A, C, E */
03168      , {      170,    -360,     -70,    -250,    170} /* GC, TG, A, C, A */
03169      , {      170,    -360,     -70,    -250,    170} /* GC, TG, A, C, C */
03170      , {      170,    -360,     -70,    -250,    170} /* GC, TG, A, C, G */
03171      , {      170,    -360,     -70,    -250,    170} /* GC, TG, A, C, T */
03172      }
03173      , { {     -20,    -550,    -260,    -440,    -20} /* GC, TG, A, G, E */
03174      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, A, G, A */
03175      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, A, G, C */
03176      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, A, G, G */
03177      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, A, G, T */
03178      }
03179      , { {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, A, T, E */
03180      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, A, T, A */
03181      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, A, T, C */
03182      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, A, T, G */
03183      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, A, T, T */
03184      }
03185      }
03186      , { { {      170,    -360,     -70,    -250,    170} /* GC, TG, C, E, E */
03187      , {      170,    -360,     -70,    -250,    170} /* GC, TG, C, E, A */
03188      , {      170,    -360,     -70,    -250,    170} /* GC, TG, C, E, C */
03189      , {      170,    -360,     -70,    -250,    170} /* GC, TG, C, E, G */
03190      , {      170,    -360,     -70,    -250,    170} /* GC, TG, C, E, T */
03191      }
03192      , { {      140,    -390,    -100,    -280,    140} /* GC, TG, C, A, E */
03193      , {      140,    -390,    -100,    -280,    140} /* GC, TG, C, A, A */
03194      , {      140,    -390,    -100,    -280,    140} /* GC, TG, C, A, C */
03195      , {      140,    -390,    -100,    -280,    140} /* GC, TG, C, A, G */
03196      , {      140,    -390,    -100,    -280,    140} /* GC, TG, C, A, T */
03197      }
03198      , { {      170,    -360,     -70,    -250,    170} /* GC, TG, C, C, E */
03199      , {      170,    -360,     -70,    -250,    170} /* GC, TG, C, C, A */
03200      , {      170,    -360,     -70,    -250,    170} /* GC, TG, C, C, C */
03201      , {      170,    -360,     -70,    -250,    170} /* GC, TG, C, C, G */
03202      , {      170,    -360,     -70,    -250,    170} /* GC, TG, C, C, T */
03203      }
03204      , { {     -20,    -550,    -260,    -440,    -20} /* GC, TG, C, G, E */
03205      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, C, G, A */
03206      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, C, G, C */
03207      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, C, G, G */
03208      , {     -20,    -550,    -260,    -440,    -20} /* GC, TG, C, G, T */
03209      }
03210      , { {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, C, T, E */
03211      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, C, T, A */
03212      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, C, T, C */
03213      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, C, T, G */
03214      , {    -670,   -1200,    -910,   -1090,   -670} /* GC, TG, C, T, T */
03215      }
03216      }
03217      , { { {      170,    -360,     -70,    -250,    170} /* GC, TG, G, E, E */

```

```
03218 , { 170, -360, -70, -250, 170} /* GC, TG, G, E, A */
03219 , { 170, -360, -70, -250, 170} /* GC, TG, G, E, C */
03220 , { 170, -360, -70, -250, 170} /* GC, TG, G, E, G */
03221 , { 170, -360, -70, -250, 170} /* GC, TG, G, E, T */
03222 }
03223 , { { 140, -390, -100, -280, 140} /* GC, TG, G, A, E */
03224 , { 140, -390, -100, -280, 140} /* GC, TG, G, A, A */
03225 , { 140, -390, -100, -280, 140} /* GC, TG, G, A, C */
03226 , { 140, -390, -100, -280, 140} /* GC, TG, G, A, G */
03227 , { 140, -390, -100, -280, 140} /* GC, TG, G, A, T */
03228 }
03229 , { { 170, -360, -70, -250, 170} /* GC, TG, G, C, E */
03230 , { 170, -360, -70, -250, 170} /* GC, TG, G, C, A */
03231 , { 170, -360, -70, -250, 170} /* GC, TG, G, C, C */
03232 , { 170, -360, -70, -250, 170} /* GC, TG, G, C, G */
03233 , { 170, -360, -70, -250, 170} /* GC, TG, G, C, T */
03234 }
03235 , { { -20, -550, -260, -440, -20} /* GC, TG, G, G, E */
03236 , { -20, -550, -260, -440, -20} /* GC, TG, G, G, A */
03237 , { -20, -550, -260, -440, -20} /* GC, TG, G, G, C */
03238 , { -20, -550, -260, -440, -20} /* GC, TG, G, G, G */
03239 , { -20, -550, -260, -440, -20} /* GC, TG, G, G, T */
03240 }
03241 , { { -670, -1200, -910, -1090, -670} /* GC, TG, G, T, E */
03242 , { -670, -1200, -910, -1090, -670} /* GC, TG, G, T, A */
03243 , { -670, -1200, -910, -1090, -670} /* GC, TG, G, T, C */
03244 , { -670, -1200, -910, -1090, -670} /* GC, TG, G, T, G */
03245 , { -670, -1200, -910, -1090, -670} /* GC, TG, G, T, T */
03246 }
03247 }
03248 , { { { 170, -360, -70, -250, 170} /* GC, TG, T, E, E */
03249 , { 170, -360, -70, -250, 170} /* GC, TG, T, E, A */
03250 , { 170, -360, -70, -250, 170} /* GC, TG, T, E, C */
03251 , { 170, -360, -70, -250, 170} /* GC, TG, T, E, G */
03252 , { 170, -360, -70, -250, 170} /* GC, TG, T, E, T */
03253 }
03254 , { { 140, -390, -100, -280, 140} /* GC, TG, T, A, E */
03255 , { 140, -390, -100, -280, 140} /* GC, TG, T, A, A */
03256 , { 140, -390, -100, -280, 140} /* GC, TG, T, A, C */
03257 , { 140, -390, -100, -280, 140} /* GC, TG, T, A, G */
03258 , { 140, -390, -100, -280, 140} /* GC, TG, T, A, T */
03259 }
03260 , { { 170, -360, -70, -250, 170} /* GC, TG, T, C, E */
03261 , { 170, -360, -70, -250, 170} /* GC, TG, T, C, A */
03262 , { 170, -360, -70, -250, 170} /* GC, TG, T, C, C */
03263 , { 170, -360, -70, -250, 170} /* GC, TG, T, C, G */
03264 , { 170, -360, -70, -250, 170} /* GC, TG, T, C, T */
03265 }
03266 , { { -20, -550, -260, -440, -20} /* GC, TG, T, G, E */
03267 , { -20, -550, -260, -440, -20} /* GC, TG, T, G, A */
03268 , { -20, -550, -260, -440, -20} /* GC, TG, T, G, C */
03269 , { -20, -550, -260, -440, -20} /* GC, TG, T, G, G */
03270 , { -20, -550, -260, -440, -20} /* GC, TG, T, G, T */
03271 }
03272 , { { -670, -1200, -910, -1090, -670} /* GC, TG, T, T, E */
03273 , { -670, -1200, -910, -1090, -670} /* GC, TG, T, T, A */
03274 , { -670, -1200, -910, -1090, -670} /* GC, TG, T, T, C */
03275 , { -670, -1200, -910, -1090, -670} /* GC, TG, T, T, G */
03276 , { -670, -1200, -910, -1090, -670} /* GC, TG, T, T, T */
03277 }
03278 }
03279 }
03280 , { { { 430, -100, 190, 10, 430} /* GC, AT, E, E, E */
03281 , { 430, -100, 190, 10, 430} /* GC, AT, E, E, A */
03282 , { 430, -100, 190, 10, 430} /* GC, AT, E, E, C */
03283 , { 430, -100, 190, 10, 430} /* GC, AT, E, E, G */
03284 , { 430, -100, 190, 10, 430} /* GC, AT, E, E, T */
03285 }
03286 , { { 310, -220, 70, -110, 310} /* GC, AT, E, A, E */
03287 , { 310, -220, 70, -110, 310} /* GC, AT, E, A, A */
03288 , { 310, -220, 70, -110, 310} /* GC, AT, E, A, C */
03289 , { 310, -220, 70, -110, 310} /* GC, AT, E, A, G */
03290 , { 310, -220, 70, -110, 310} /* GC, AT, E, A, T */
03291 }
03292 , { { 430, -100, 190, 10, 430} /* GC, AT, E, C, E */
03293 , { 430, -100, 190, 10, 430} /* GC, AT, E, C, A */
03294 , { 430, -100, 190, 10, 430} /* GC, AT, E, C, C */
03295 , { 430, -100, 190, 10, 430} /* GC, AT, E, C, G */
03296 , { 430, -100, 190, 10, 430} /* GC, AT, E, C, T */
03297 }
03298 , { { 380, -150, 140, -40, 380} /* GC, AT, E, G, E */
03299 , { 380, -150, 140, -40, 380} /* GC, AT, E, G, A */
03300 , { 380, -150, 140, -40, 380} /* GC, AT, E, G, C */
03301 , { 380, -150, 140, -40, 380} /* GC, AT, E, G, G */
03302 , { 380, -150, 140, -40, 380} /* GC, AT, E, G, T */
03303 }
03304 , { { 340, -190, 100, -80, 340} /* GC, AT, E, T, E */
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03305      , {      340,    -190,    100,    -80,    340} /* GC,AT,E,T,A */
03306      , {      340,    -190,    100,    -80,    340} /* GC,AT,E,T,C */
03307      , {      340,    -190,    100,    -80,    340} /* GC,AT,E,T,G */
03308      , {      340,    -190,    100,    -80,    340} /* GC,AT,E,T,T */
03309      }
03310    }
03311    ,{{{      430,    -100,    190,     10,    430} /* GC,AT,A,E,E */
03312      , {      430,    -100,    190,     10,    430} /* GC,AT,A,E,A */
03313      , {      430,    -100,    190,     10,    430} /* GC,AT,A,E,C */
03314      , {      430,    -100,    190,     10,    430} /* GC,AT,A,E,G */
03315      , {      430,    -100,    190,     10,    430} /* GC,AT,A,E,T */
03316    }
03317    ,{{{      310,    -220,     70,   -110,    310} /* GC,AT,A,A,E */
03318      , {      310,    -220,     70,   -110,    310} /* GC,AT,A,A,A */
03319      , {      310,    -220,     70,   -110,    310} /* GC,AT,A,A,C */
03320      , {      310,    -220,     70,   -110,    310} /* GC,AT,A,A,G */
03321      , {      310,    -220,     70,   -110,    310} /* GC,AT,A,A,T */
03322    }
03323    ,{{{      430,    -100,    190,     10,    430} /* GC,AT,A,C,E */
03324      , {      430,    -100,    190,     10,    430} /* GC,AT,A,C,A */
03325      , {      430,    -100,    190,     10,    430} /* GC,AT,A,C,C */
03326      , {      430,    -100,    190,     10,    430} /* GC,AT,A,C,G */
03327      , {      430,    -100,    190,     10,    430} /* GC,AT,A,C,T */
03328    }
03329    ,{{{      380,    -150,    140,    -40,    380} /* GC,AT,A,G,E */
03330      , {      380,    -150,    140,    -40,    380} /* GC,AT,A,G,A */
03331      , {      380,    -150,    140,    -40,    380} /* GC,AT,A,G,C */
03332      , {      380,    -150,    140,    -40,    380} /* GC,AT,A,G,G */
03333      , {      380,    -150,    140,    -40,    380} /* GC,AT,A,G,T */
03334    }
03335    ,{{{      340,    -190,    100,    -80,    340} /* GC,AT,A,T,E */
03336      , {      340,    -190,    100,    -80,    340} /* GC,AT,A,T,A */
03337      , {      340,    -190,    100,    -80,    340} /* GC,AT,A,T,C */
03338      , {      340,    -190,    100,    -80,    340} /* GC,AT,A,T,G */
03339      , {      340,    -190,    100,    -80,    340} /* GC,AT,A,T,T */
03340    }
03341  }
03342  ,{{{      430,    -100,    190,     10,    430} /* GC,AT,C,E,E */
03343    , {      430,    -100,    190,     10,    430} /* GC,AT,C,E,A */
03344    , {      430,    -100,    190,     10,    430} /* GC,AT,C,E,C */
03345    , {      430,    -100,    190,     10,    430} /* GC,AT,C,E,G */
03346    , {      430,    -100,    190,     10,    430} /* GC,AT,C,E,T */
03347  }
03348  ,{{{      310,    -220,     70,   -110,    310} /* GC,AT,C,A,E */
03349    , {      310,    -220,     70,   -110,    310} /* GC,AT,C,A,A */
03350    , {      310,    -220,     70,   -110,    310} /* GC,AT,C,A,C */
03351    , {      310,    -220,     70,   -110,    310} /* GC,AT,C,A,G */
03352    , {      310,    -220,     70,   -110,    310} /* GC,AT,C,A,T */
03353  }
03354  ,{{{      430,    -100,    190,     10,    430} /* GC,AT,C,C,E */
03355    , {      430,    -100,    190,     10,    430} /* GC,AT,C,C,A */
03356    , {      430,    -100,    190,     10,    430} /* GC,AT,C,C,C */
03357    , {      430,    -100,    190,     10,    430} /* GC,AT,C,C,G */
03358    , {      430,    -100,    190,     10,    430} /* GC,AT,C,C,T */
03359  }
03360  ,{{{      380,    -150,    140,    -40,    380} /* GC,AT,C,G,E */
03361    , {      380,    -150,    140,    -40,    380} /* GC,AT,C,G,A */
03362    , {      380,    -150,    140,    -40,    380} /* GC,AT,C,G,C */
03363    , {      380,    -150,    140,    -40,    380} /* GC,AT,C,G,G */
03364    , {      380,    -150,    140,    -40,    380} /* GC,AT,C,G,T */
03365  }
03366  ,{{{      340,    -190,    100,    -80,    340} /* GC,AT,C,T,E */
03367    , {      340,    -190,    100,    -80,    340} /* GC,AT,C,T,A */
03368    , {      340,    -190,    100,    -80,    340} /* GC,AT,C,T,C */
03369    , {      340,    -190,    100,    -80,    340} /* GC,AT,C,T,G */
03370    , {      340,    -190,    100,    -80,    340} /* GC,AT,C,T,T */
03371  }
03372  }
03373  ,{{{      430,    -100,    190,     10,    430} /* GC,AT,G,E,E */
03374    , {      430,    -100,    190,     10,    430} /* GC,AT,G,E,A */
03375    , {      430,    -100,    190,     10,    430} /* GC,AT,G,E,C */
03376    , {      430,    -100,    190,     10,    430} /* GC,AT,G,E,G */
03377    , {      430,    -100,    190,     10,    430} /* GC,AT,G,E,T */
03378  }
03379  ,{{{      310,    -220,     70,   -110,    310} /* GC,AT,G,A,E */
03380    , {      310,    -220,     70,   -110,    310} /* GC,AT,G,A,A */
03381    , {      310,    -220,     70,   -110,    310} /* GC,AT,G,A,C */
03382    , {      310,    -220,     70,   -110,    310} /* GC,AT,G,A,G */
03383    , {      310,    -220,     70,   -110,    310} /* GC,AT,G,A,T */
03384  }
03385  ,{{{      430,    -100,    190,     10,    430} /* GC,AT,G,C,E */
03386    , {      430,    -100,    190,     10,    430} /* GC,AT,G,C,A */
03387    , {      430,    -100,    190,     10,    430} /* GC,AT,G,C,C */
03388    , {      430,    -100,    190,     10,    430} /* GC,AT,G,C,G */
03389    , {      430,    -100,    190,     10,    430} /* GC,AT,G,C,T */
03390  }
03391  ,{{{      380,    -150,    140,    -40,    380} /* GC,AT,G,G,E */

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03392 , { 380, -150, 140, -40, 380} /* GC,AT,G,G,A */
03393 , { 380, -150, 140, -40, 380} /* GC,AT,G,G,C */
03394 , { 380, -150, 140, -40, 380} /* GC,AT,G,G,G */
03395 , { 380, -150, 140, -40, 380} /* GC,AT,G,G,T */
03396 }
03397 , { { 340, -190, 100, -80, 340} /* GC,AT,G,T,E */
03398 , { 340, -190, 100, -80, 340} /* GC,AT,G,T,A */
03399 , { 340, -190, 100, -80, 340} /* GC,AT,G,T,C */
03400 , { 340, -190, 100, -80, 340} /* GC,AT,G,T,G */
03401 , { 340, -190, 100, -80, 340} /* GC,AT,G,T,T */
03402 }
03403 }
03404 , { { { 430, -100, 190, 10, 430} /* GC,AT,T,E,E */
03405 , { 430, -100, 190, 10, 430} /* GC,AT,T,E,A */
03406 , { 430, -100, 190, 10, 430} /* GC,AT,T,E,C */
03407 , { 430, -100, 190, 10, 430} /* GC,AT,T,E,G */
03408 , { 430, -100, 190, 10, 430} /* GC,AT,T,E,T */
03409 }
03410 , { { 310, -220, 70, -110, 310} /* GC,AT,T,A,E */
03411 , { 310, -220, 70, -110, 310} /* GC,AT,T,A,A */
03412 , { 310, -220, 70, -110, 310} /* GC,AT,T,A,C */
03413 , { 310, -220, 70, -110, 310} /* GC,AT,T,A,G */
03414 , { 310, -220, 70, -110, 310} /* GC,AT,T,A,T */
03415 }
03416 , { { 430, -100, 190, 10, 430} /* GC,AT,T,C,E */
03417 , { 430, -100, 190, 10, 430} /* GC,AT,T,C,A */
03418 , { 430, -100, 190, 10, 430} /* GC,AT,T,C,C */
03419 , { 430, -100, 190, 10, 430} /* GC,AT,T,C,G */
03420 , { 430, -100, 190, 10, 430} /* GC,AT,T,C,T */
03421 }
03422 , { { 380, -150, 140, -40, 380} /* GC,AT,T,G,E */
03423 , { 380, -150, 140, -40, 380} /* GC,AT,T,G,A */
03424 , { 380, -150, 140, -40, 380} /* GC,AT,T,G,C */
03425 , { 380, -150, 140, -40, 380} /* GC,AT,T,G,G */
03426 , { 380, -150, 140, -40, 380} /* GC,AT,T,G,T */
03427 }
03428 , { { 340, -190, 100, -80, 340} /* GC,AT,T,T,E */
03429 , { 340, -190, 100, -80, 340} /* GC,AT,T,T,A */
03430 , { 340, -190, 100, -80, 340} /* GC,AT,T,T,C */
03431 , { 340, -190, 100, -80, 340} /* GC,AT,T,T,G */
03432 , { 340, -190, 100, -80, 340} /* GC,AT,T,T,T */
03433 }
03434 }
03435 }
03436 , { { { { 170, -360, -70, -250, 170} /* GC,TA,E,E,E */
03437 , { 170, -360, -70, -250, 170} /* GC,TA,E,E,A */
03438 , { 170, -360, -70, -250, 170} /* GC,TA,E,E,C */
03439 , { 170, -360, -70, -250, 170} /* GC,TA,E,E,G */
03440 , { 170, -360, -70, -250, 170} /* GC,TA,E,E,T */
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03442 , { { { 140, -390, -100, -280, 140} /* GC,TA,E,A,E */
03443 , { 140, -390, -100, -280, 140} /* GC,TA,E,A,A */
03444 , { 140, -390, -100, -280, 140} /* GC,TA,E,A,C */
03445 , { 140, -390, -100, -280, 140} /* GC,TA,E,A,G */
03446 , { 140, -390, -100, -280, 140} /* GC,TA,E,A,T */
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03448 , { { { 170, -360, -70, -250, 170} /* GC,TA,E,C,E */
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03450 , { 170, -360, -70, -250, 170} /* GC,TA,E,C,C */
03451 , { 170, -360, -70, -250, 170} /* GC,TA,E,C,G */
03452 , { 170, -360, -70, -250, 170} /* GC,TA,E,C,T */
03453 }
03454 , { { { -20, -550, -260, -440, -20} /* GC,TA,E,G,E */
03455 , { -20, -550, -260, -440, -20} /* GC,TA,E,G,A */
03456 , { -20, -550, -260, -440, -20} /* GC,TA,E,G,C */
03457 , { -20, -550, -260, -440, -20} /* GC,TA,E,G,G */
03458 , { -20, -550, -260, -440, -20} /* GC,TA,E,G,T */
03459 }
03460 , { { { -670, -1200, -910, -1090, -670} /* GC,TA,E,T,E */
03461 , { -670, -1200, -910, -1090, -670} /* GC,TA,E,T,A */
03462 , { -670, -1200, -910, -1090, -670} /* GC,TA,E,T,C */
03463 , { -670, -1200, -910, -1090, -670} /* GC,TA,E,T,G */
03464 , { -670, -1200, -910, -1090, -670} /* GC,TA,E,T,T */
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03466 }
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03470 , { 170, -360, -70, -250, 170} /* GC,TA,A,E,G */
03471 , { 170, -360, -70, -250, 170} /* GC,TA,A,E,T */
03472 }
03473 , { { { 140, -390, -100, -280, 140} /* GC,TA,A,A,E */
03474 , { 140, -390, -100, -280, 140} /* GC,TA,A,A,A */
03475 , { 140, -390, -100, -280, 140} /* GC,TA,A,A,C */
03476 , { 140, -390, -100, -280, 140} /* GC,TA,A,A,G */
03477 , { 140, -390, -100, -280, 140} /* GC,TA,A,A,T */
03478 }
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03481 ,{ 170, -360, -70, -250, 170} /* GC,TA,A,C,C */
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03483 ,{ 170, -360, -70, -250, 170} /* GC,TA,A,C,T */
03484 }
03485 ,{{ -20, -550, -260, -440, -20} /* GC,TA,A,G,E */
03486 ,{ -20, -550, -260, -440, -20} /* GC,TA,A,G,A */
03487 ,{ -20, -550, -260, -440, -20} /* GC,TA,A,G,C */
03488 ,{ -20, -550, -260, -440, -20} /* GC,TA,A,G,G */
03489 ,{ -20, -550, -260, -440, -20} /* GC,TA,A,G,T */
03490 }
03491 ,{{ -670, -1200, -910, -1090, -670} /* GC,TA,A,T,E */
03492 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,A,T,A */
03493 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,A,T,C */
03494 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,A,T,G */
03495 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,A,T,T */
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03497 }
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03501 ,{ 170, -360, -70, -250, 170} /* GC,TA,C,E,G */
03502 ,{ 170, -360, -70, -250, 170} /* GC,TA,C,E,T */
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03504 ,{{ 140, -390, -100, -280, 140} /* GC,TA,C,A,E */
03505 ,{ 140, -390, -100, -280, 140} /* GC,TA,C,A,A */
03506 ,{ 140, -390, -100, -280, 140} /* GC,TA,C,A,C */
03507 ,{ 140, -390, -100, -280, 140} /* GC,TA,C,A,G */
03508 ,{ 140, -390, -100, -280, 140} /* GC,TA,C,A,T */
03509 }
03510 ,{{ 170, -360, -70, -250, 170} /* GC,TA,C,C,E */
03511 ,{ 170, -360, -70, -250, 170} /* GC,TA,C,C,A */
03512 ,{ 170, -360, -70, -250, 170} /* GC,TA,C,C,C */
03513 ,{ 170, -360, -70, -250, 170} /* GC,TA,C,C,G */
03514 ,{ 170, -360, -70, -250, 170} /* GC,TA,C,C,T */
03515 }
03516 ,{{ -20, -550, -260, -440, -20} /* GC,TA,C,G,E */
03517 ,{ -20, -550, -260, -440, -20} /* GC,TA,C,G,A */
03518 ,{ -20, -550, -260, -440, -20} /* GC,TA,C,G,C */
03519 ,{ -20, -550, -260, -440, -20} /* GC,TA,C,G,G */
03520 ,{ -20, -550, -260, -440, -20} /* GC,TA,C,G,T */
03521 }
03522 ,{{ -670, -1200, -910, -1090, -670} /* GC,TA,C,T,E */
03523 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,C,T,A */
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03525 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,C,T,G */
03526 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,C,T,T */
03527 }
03528 }
03529 ,{{{ 170, -360, -70, -250, 170} /* GC,TA,G,E,E */
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03531 ,{ 170, -360, -70, -250, 170} /* GC,TA,G,E,C */
03532 ,{ 170, -360, -70, -250, 170} /* GC,TA,G,E,G */
03533 ,{ 170, -360, -70, -250, 170} /* GC,TA,G,E,T */
03534 }
03535 ,{{ 140, -390, -100, -280, 140} /* GC,TA,G,A,E */
03536 ,{ 140, -390, -100, -280, 140} /* GC,TA,G,A,A */
03537 ,{ 140, -390, -100, -280, 140} /* GC,TA,G,A,C */
03538 ,{ 140, -390, -100, -280, 140} /* GC,TA,G,A,G */
03539 ,{ 140, -390, -100, -280, 140} /* GC,TA,G,A,T */
03540 }
03541 ,{{ 170, -360, -70, -250, 170} /* GC,TA,G,C,E */
03542 ,{ 170, -360, -70, -250, 170} /* GC,TA,G,C,A */
03543 ,{ 170, -360, -70, -250, 170} /* GC,TA,G,C,C */
03544 ,{ 170, -360, -70, -250, 170} /* GC,TA,G,C,G */
03545 ,{ 170, -360, -70, -250, 170} /* GC,TA,G,C,T */
03546 }
03547 ,{{ -20, -550, -260, -440, -20} /* GC,TA,G,G,E */
03548 ,{ -20, -550, -260, -440, -20} /* GC,TA,G,G,A */
03549 ,{ -20, -550, -260, -440, -20} /* GC,TA,G,G,C */
03550 ,{ -20, -550, -260, -440, -20} /* GC,TA,G,G,G */
03551 ,{ -20, -550, -260, -440, -20} /* GC,TA,G,G,T */
03552 }
03553 ,{{ -670, -1200, -910, -1090, -670} /* GC,TA,G,T,E */
03554 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,G,T,A */
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03557 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,G,T,T */
03558 }
03559 }
03560 ,{{{ 170, -360, -70, -250, 170} /* GC,TA,T,E,E */
03561 ,{ 170, -360, -70, -250, 170} /* GC,TA,T,E,A */
03562 ,{ 170, -360, -70, -250, 170} /* GC,TA,T,E,C */
03563 ,{ 170, -360, -70, -250, 170} /* GC,TA,T,E,G */
03564 ,{ 170, -360, -70, -250, 170} /* GC,TA,T,E,T */
03565 }

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03571 }
03572 ,{{ 170, -360, -70, -250, 170} /* GC,TA,T,C,E */
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03577 }
03578 ,{{ -20, -550, -260, -440, -20} /* GC,TA,T,G,E */
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03582 ,{ -20, -550, -260, -440, -20} /* GC,TA,T,G,T */
03583 }
03584 ,{{ -670, -1200, -910, -1090, -670} /* GC,TA,T,T,E */
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03588 ,{ -670, -1200, -910, -1090, -670} /* GC,TA,T,T,T */
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03590 }
03591 }
03592 ,{{{ 430, -100, 190, 10, 430} /* GC,NN,E,E,E */
03593 ,{ 430, -100, 190, 10, 430} /* GC,NN,E,E,A */
03594 ,{ 430, -100, 190, 10, 430} /* GC,NN,E,E,C */
03595 ,{ 430, -100, 190, 10, 430} /* GC,NN,E,E,G */
03596 ,{ 430, -100, 190, 10, 430} /* GC,NN,E,E,T */
03597 }
03598 ,{{ 310, -220, 70, -110, 310} /* GC,NN,E,A,E */
03599 ,{ 310, -220, 70, -110, 310} /* GC,NN,E,A,A */
03600 ,{ 310, -220, 70, -110, 310} /* GC,NN,E,A,C */
03601 ,{ 310, -220, 70, -110, 310} /* GC,NN,E,A,G */
03602 ,{ 310, -220, 70, -110, 310} /* GC,NN,E,A,T */
03603 }
03604 ,{{ 430, -100, 190, 10, 430} /* GC,NN,E,C,E */
03605 ,{ 430, -100, 190, 10, 430} /* GC,NN,E,C,A */
03606 ,{ 430, -100, 190, 10, 430} /* GC,NN,E,C,C */
03607 ,{ 430, -100, 190, 10, 430} /* GC,NN,E,C,G */
03608 ,{ 430, -100, 190, 10, 430} /* GC,NN,E,C,T */
03609 }
03610 ,{{ 380, -150, 140, -40, 380} /* GC,NN,E,G,E */
03611 ,{ 380, -150, 140, -40, 380} /* GC,NN,E,G,A */
03612 ,{ 380, -150, 140, -40, 380} /* GC,NN,E,G,C */
03613 ,{ 380, -150, 140, -40, 380} /* GC,NN,E,G,G */
03614 ,{ 380, -150, 140, -40, 380} /* GC,NN,E,G,T */
03615 }
03616 ,{{ 340, -190, 100, -80, 340} /* GC,NN,E,T,E */
03617 ,{ 340, -190, 100, -80, 340} /* GC,NN,E,T,A */
03618 ,{ 340, -190, 100, -80, 340} /* GC,NN,E,T,C */
03619 ,{ 340, -190, 100, -80, 340} /* GC,NN,E,T,G */
03620 ,{ 340, -190, 100, -80, 340} /* GC,NN,E,T,T */
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03622 }
03623 ,{{{ 430, -100, 190, 10, 430} /* GC,NN,A,E,E */
03624 ,{ 430, -100, 190, 10, 430} /* GC,NN,A,E,A */
03625 ,{ 430, -100, 190, 10, 430} /* GC,NN,A,E,C */
03626 ,{ 430, -100, 190, 10, 430} /* GC,NN,A,E,G */
03627 ,{ 430, -100, 190, 10, 430} /* GC,NN,A,E,T */
03628 }
03629 ,{{ 310, -220, 70, -110, 310} /* GC,NN,A,A,E */
03630 ,{ 310, -220, 70, -110, 310} /* GC,NN,A,A,A */
03631 ,{ 310, -220, 70, -110, 310} /* GC,NN,A,A,C */
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03634 }
03635 ,{{ 430, -100, 190, 10, 430} /* GC,NN,A,C,E */
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03637 ,{ 430, -100, 190, 10, 430} /* GC,NN,A,C,C */
03638 ,{ 430, -100, 190, 10, 430} /* GC,NN,A,C,G */
03639 ,{ 430, -100, 190, 10, 430} /* GC,NN,A,C,T */
03640 }
03641 ,{{ 380, -150, 140, -40, 380} /* GC,NN,A,G,E */
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03645 ,{ 380, -150, 140, -40, 380} /* GC,NN,A,G,T */
03646 }
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03650 ,{ 340, -190, 100, -80, 340} /* GC,NN,A,T,G */
03651 ,{ 340, -190, 100, -80, 340} /* GC,NN,A,T,T */
03652 }
```

```

03653      }
03654      ,{{{ 430, -100, 190, 10, 430} /* GC,NN,C,E,E */
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03658      ,{ 430, -100, 190, 10, 430} /* GC,NN,C,E,T */
03659      }
03660      ,{{{ 310, -220, 70, -110, 310} /* GC,NN,C,A,E */
03661      ,{ 310, -220, 70, -110, 310} /* GC,NN,C,A,A */
03662      ,{ 310, -220, 70, -110, 310} /* GC,NN,C,A,C */
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03666      ,{{{ 430, -100, 190, 10, 430} /* GC,NN,C,C,E */
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03669      ,{ 430, -100, 190, 10, 430} /* GC,NN,C,C,G */
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03672      ,{{{ 380, -150, 140, -40, 380} /* GC,NN,C,G,E */
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03675      ,{ 380, -150, 140, -40, 380} /* GC,NN,C,G,G */
03676      ,{ 380, -150, 140, -40, 380} /* GC,NN,C,G,T */
03677      }
03678      ,{{{ 340, -190, 100, -80, 340} /* GC,NN,C,T,E */
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03681      ,{ 340, -190, 100, -80, 340} /* GC,NN,C,T,G */
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03683      }
03684      }
03685      ,{{{ 430, -100, 190, 10, 430} /* GC,NN,G,E,E */
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03689      ,{ 430, -100, 190, 10, 430} /* GC,NN,G,E,T */
03690      }
03691      ,{{{ 310, -220, 70, -110, 310} /* GC,NN,G,A,E */
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03701      ,{ 430, -100, 190, 10, 430} /* GC,NN,G,C,T */
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03703      ,{{{ 380, -150, 140, -40, 380} /* GC,NN,G,G,E */
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03705      ,{ 380, -150, 140, -40, 380} /* GC,NN,G,G,C */
03706      ,{ 380, -150, 140, -40, 380} /* GC,NN,G,G,G */
03707      ,{ 380, -150, 140, -40, 380} /* GC,NN,G,G,T */
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03709      ,{{{ 340, -190, 100, -80, 340} /* GC,NN,G,T,E */
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03712      ,{ 340, -190, 100, -80, 340} /* GC,NN,G,T,G */
03713      ,{ 340, -190, 100, -80, 340} /* GC,NN,G,T,T */
03714      }
03715      }
03716      ,{{{ 430, -100, 190, 10, 430} /* GC,NN,T,E,E */
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03718      ,{ 430, -100, 190, 10, 430} /* GC,NN,T,E,C */
03719      ,{ 430, -100, 190, 10, 430} /* GC,NN,T,E,G */
03720      ,{ 430, -100, 190, 10, 430} /* GC,NN,T,E,T */
03721      }
03722      ,{{{ 310, -220, 70, -110, 310} /* GC,NN,T,A,E */
03723      ,{ 310, -220, 70, -110, 310} /* GC,NN,T,A,A */
03724      ,{ 310, -220, 70, -110, 310} /* GC,NN,T,A,C */
03725      ,{ 310, -220, 70, -110, 310} /* GC,NN,T,A,G */
03726      ,{ 310, -220, 70, -110, 310} /* GC,NN,T,A,T */
03727      }
03728      ,{{{ 430, -100, 190, 10, 430} /* GC,NN,T,C,E */
03729      ,{ 430, -100, 190, 10, 430} /* GC,NN,T,C,A */
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03731      ,{ 430, -100, 190, 10, 430} /* GC,NN,T,C,G */
03732      ,{ 430, -100, 190, 10, 430} /* GC,NN,T,C,T */
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03734      ,{{{ 380, -150, 140, -40, 380} /* GC,NN,T,G,E */
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03737      ,{ 380, -150, 140, -40, 380} /* GC,NN,T,G,G */
03738      ,{ 380, -150, 140, -40, 380} /* GC,NN,T,G,T */
03739      }

```



```
03740 ,{{ 340, -190, 100, -80, 340} /* GC,NN,T,T,E */
03741 ,{ 340, -190, 100, -80, 340} /* GC,NN,T,T,A */
03742 ,{ 340, -190, 100, -80, 340} /* GC,NN,T,T,C */
03743 ,{ 340, -190, 100, -80, 340} /* GC,NN,T,T,G */
03744 ,{ 340, -190, 100, -80, 340} /* GC,NN,T,T,T */
03745 }
03746 }
03747 }
03748 }
03749 ,{{{ INF, INF, INF, INF, INF} /* GT,NP,E,E,E */
03750 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,E,A */
03751 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,E,C */
03752 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,E,G */
03753 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,E,T */
03754 }
03755 ,{{ INF, INF, INF, INF, INF} /* GT,NP,E,A,E */
03756 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,A,A */
03757 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,A,C */
03758 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,A,G */
03759 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,A,T */
03760 }
03761 ,{{ INF, INF, INF, INF, INF} /* GT,NP,E,C,E */
03762 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,C,A */
03763 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,C,C */
03764 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,C,G */
03765 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,C,T */
03766 }
03767 ,{{ INF, INF, INF, INF, INF} /* GT,NP,E,G,E */
03768 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,G,A */
03769 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,G,C */
03770 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,G,G */
03771 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,G,T */
03772 }
03773 ,{{ INF, INF, INF, INF, INF} /* GT,NP,E,T,E */
03774 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,T,A */
03775 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,T,C */
03776 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,T,G */
03777 ,{ INF, INF, INF, INF, INF} /* GT,NP,E,T,T */
03778 }
03779 }
03780 ,{{{ INF, INF, INF, INF, INF} /* GT,NP,A,E,E */
03781 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,E,A */
03782 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,E,C */
03783 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,E,G */
03784 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,E,T */
03785 }
03786 ,{{ INF, INF, INF, INF, INF} /* GT,NP,A,A,E */
03787 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,A,A */
03788 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,A,C */
03789 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,A,G */
03790 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,A,T */
03791 }
03792 ,{{ INF, INF, INF, INF, INF} /* GT,NP,A,C,E */
03793 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,C,A */
03794 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,C,C */
03795 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,C,G */
03796 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,C,T */
03797 }
03798 ,{{ INF, INF, INF, INF, INF} /* GT,NP,A,G,E */
03799 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,G,A */
03800 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,G,C */
03801 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,G,G */
03802 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,G,T */
03803 }
03804 ,{{{ INF, INF, INF, INF, INF} /* GT,NP,A,T,E */
03805 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,T,A */
03806 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,T,C */
03807 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,T,G */
03808 ,{ INF, INF, INF, INF, INF} /* GT,NP,A,T,T */
03809 }
03810 }
03811 ,{{{ INF, INF, INF, INF, INF} /* GT,NP,C,E,E */
03812 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,E,A */
03813 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,E,C */
03814 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,E,G */
03815 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,E,T */
03816 }
03817 ,{{ INF, INF, INF, INF, INF} /* GT,NP,C,A,E */
03818 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,A,A */
03819 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,A,C */
03820 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,A,G */
03821 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,A,T */
03822 }
03823 ,{{ INF, INF, INF, INF, INF} /* GT,NP,C,C,E */
03824 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,C,A */
03825 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,C,C */
03826 ,{ INF, INF, INF, INF, INF} /* GT,NP,C,C,G */
```

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03828 }
03829 , { { INF, INF, INF, INF, INF } /* GT,NP,C,G,E */
03830 , { INF, INF, INF, INF, INF } /* GT,NP,C,G,A */
03831 , { INF, INF, INF, INF, INF } /* GT,NP,C,G,C */
03832 , { INF, INF, INF, INF, INF } /* GT,NP,C,G,G */
03833 , { INF, INF, INF, INF, INF } /* GT,NP,C,G,T */
03834 }
03835 , { { INF, INF, INF, INF, INF } /* GT,NP,C,T,E */
03836 , { INF, INF, INF, INF, INF } /* GT,NP,C,T,A */
03837 , { INF, INF, INF, INF, INF } /* GT,NP,C,T,C */
03838 , { INF, INF, INF, INF, INF } /* GT,NP,C,T,G */
03839 , { INF, INF, INF, INF, INF } /* GT,NP,C,T,T */
03840 }
03841 }
03842 , { { { INF, INF, INF, INF, INF } /* GT,NP,G,E,E */
03843 , { INF, INF, INF, INF, INF } /* GT,NP,G,E,A */
03844 , { INF, INF, INF, INF, INF } /* GT,NP,G,E,C */
03845 , { INF, INF, INF, INF, INF } /* GT,NP,G,E,G */
03846 , { INF, INF, INF, INF, INF } /* GT,NP,G,E,T */
03847 }
03848 , { { INF, INF, INF, INF, INF } /* GT,NP,G,A,E */
03849 , { INF, INF, INF, INF, INF } /* GT,NP,G,A,A */
03850 , { INF, INF, INF, INF, INF } /* GT,NP,G,A,C */
03851 , { INF, INF, INF, INF, INF } /* GT,NP,G,A,G */
03852 , { INF, INF, INF, INF, INF } /* GT,NP,G,A,T */
03853 }
03854 , { { INF, INF, INF, INF, INF } /* GT,NP,G,C,E */
03855 , { INF, INF, INF, INF, INF } /* GT,NP,G,C,A */
03856 , { INF, INF, INF, INF, INF } /* GT,NP,G,C,C */
03857 , { INF, INF, INF, INF, INF } /* GT,NP,G,C,G */
03858 , { INF, INF, INF, INF, INF } /* GT,NP,G,C,T */
03859 }
03860 , { { INF, INF, INF, INF, INF } /* GT,NP,G,G,E */
03861 , { INF, INF, INF, INF, INF } /* GT,NP,G,G,A */
03862 , { INF, INF, INF, INF, INF } /* GT,NP,G,G,C */
03863 , { INF, INF, INF, INF, INF } /* GT,NP,G,G,G */
03864 , { INF, INF, INF, INF, INF } /* GT,NP,G,G,T */
03865 }
03866 , { { INF, INF, INF, INF, INF } /* GT,NP,G,T,E */
03867 , { INF, INF, INF, INF, INF } /* GT,NP,G,T,A */
03868 , { INF, INF, INF, INF, INF } /* GT,NP,G,T,C */
03869 , { INF, INF, INF, INF, INF } /* GT,NP,G,T,G */
03870 , { INF, INF, INF, INF, INF } /* GT,NP,G,T,T */
03871 }
03872 }
03873 , { { { INF, INF, INF, INF, INF } /* GT,NP,T,E,E */
03874 , { INF, INF, INF, INF, INF } /* GT,NP,T,E,A */
03875 , { INF, INF, INF, INF, INF } /* GT,NP,T,E,C */
03876 , { INF, INF, INF, INF, INF } /* GT,NP,T,E,G */
03877 , { INF, INF, INF, INF, INF } /* GT,NP,T,E,T */
03878 }
03879 , { { INF, INF, INF, INF, INF } /* GT,NP,T,A,E */
03880 , { INF, INF, INF, INF, INF } /* GT,NP,T,A,A */
03881 , { INF, INF, INF, INF, INF } /* GT,NP,T,A,C */
03882 , { INF, INF, INF, INF, INF } /* GT,NP,T,A,G */
03883 , { INF, INF, INF, INF, INF } /* GT,NP,T,A,T */
03884 }
03885 , { { INF, INF, INF, INF, INF } /* GT,NP,T,C,E */
03886 , { INF, INF, INF, INF, INF } /* GT,NP,T,C,A */
03887 , { INF, INF, INF, INF, INF } /* GT,NP,T,C,C */
03888 , { INF, INF, INF, INF, INF } /* GT,NP,T,C,G */
03889 , { INF, INF, INF, INF, INF } /* GT,NP,T,C,T */
03890 }
03891 , { { INF, INF, INF, INF, INF } /* GT,NP,T,G,E */
03892 , { INF, INF, INF, INF, INF } /* GT,NP,T,G,A */
03893 , { INF, INF, INF, INF, INF } /* GT,NP,T,G,C */
03894 , { INF, INF, INF, INF, INF } /* GT,NP,T,G,G */
03895 , { INF, INF, INF, INF, INF } /* GT,NP,T,G,T */
03896 }
03897 , { { INF, INF, INF, INF, INF } /* GT,NP,T,T,E */
03898 , { INF, INF, INF, INF, INF } /* GT,NP,T,T,A */
03899 , { INF, INF, INF, INF, INF } /* GT,NP,T,T,C */
03900 , { INF, INF, INF, INF, INF } /* GT,NP,T,T,G */
03901 , { INF, INF, INF, INF, INF } /* GT,NP,T,T,T */
03902 }
03903 }
03904 }
03905 , { { { -190, -720, -430, -610, -190 } /* GT,CG,E,E,E */
03906 , { -190, -720, -430, -610, -190 } /* GT,CG,E,E,A */
03907 , { -190, -720, -430, -610, -190 } /* GT,CG,E,E,C */
03908 , { -190, -720, -430, -610, -190 } /* GT,CG,E,E,G */
03909 , { -190, -720, -430, -610, -190 } /* GT,CG,E,E,T */
03910 }
03911 , { { -230, -760, -470, -650, -230 } /* GT,CG,E,A,E */
03912 , { -230, -760, -470, -650, -230 } /* GT,CG,E,A,A */
03913 , { -230, -760, -470, -650, -230 } /* GT,CG,E,A,C */

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03914      , { -230, -760, -470, -650, -230} /* GT,CG,E,A,G */
03915      , { -230, -760, -470, -650, -230} /* GT,CG,E,A,T */
03916      }
03917      , {{ -190, -720, -430, -610, -190} /* GT,CG,E,C,E */
03918      , { -190, -720, -430, -610, -190} /* GT,CG,E,C,A */
03919      , { -190, -720, -430, -610, -190} /* GT,CG,E,C,C */
03920      , { -190, -720, -430, -610, -190} /* GT,CG,E,C,G */
03921      , { -190, -720, -430, -610, -190} /* GT,CG,E,C,T */
03922      }
03923      , {{ -240, -770, -480, -660, -240} /* GT,CG,E,G,E */
03924      , { -240, -770, -480, -660, -240} /* GT,CG,E,G,A */
03925      , { -240, -770, -480, -660, -240} /* GT,CG,E,G,C */
03926      , { -240, -770, -480, -660, -240} /* GT,CG,E,G,G */
03927      , { -240, -770, -480, -660, -240} /* GT,CG,E,G,T */
03928      }
03929      , {{ -270, -800, -510, -690, -270} /* GT,CG,E,T,E */
03930      , { -270, -800, -510, -690, -270} /* GT,CG,E,T,A */
03931      , { -270, -800, -510, -690, -270} /* GT,CG,E,T,C */
03932      , { -270, -800, -510, -690, -270} /* GT,CG,E,T,G */
03933      , { -270, -800, -510, -690, -270} /* GT,CG,E,T,T */
03934      }
03935      }
03936      , {{{ -190, -720, -430, -610, -190} /* GT,CG,A,E,E */
03937      , { -190, -720, -430, -610, -190} /* GT,CG,A,E,A */
03938      , { -190, -720, -430, -610, -190} /* GT,CG,A,E,C */
03939      , { -190, -720, -430, -610, -190} /* GT,CG,A,E,G */
03940      , { -190, -720, -430, -610, -190} /* GT,CG,A,E,T */
03941      }
03942      , {{ -230, -760, -470, -650, -230} /* GT,CG,A,A,E */
03943      , { -230, -760, -470, -650, -230} /* GT,CG,A,A,A */
03944      , { -230, -760, -470, -650, -230} /* GT,CG,A,A,C */
03945      , { -230, -760, -470, -650, -230} /* GT,CG,A,A,G */
03946      , { -230, -760, -470, -650, -230} /* GT,CG,A,A,T */
03947      }
03948      , {{ -190, -720, -430, -610, -190} /* GT,CG,A,C,E */
03949      , { -190, -720, -430, -610, -190} /* GT,CG,A,C,A */
03950      , { -190, -720, -430, -610, -190} /* GT,CG,A,C,C */
03951      , { -190, -720, -430, -610, -190} /* GT,CG,A,C,G */
03952      , { -190, -720, -430, -610, -190} /* GT,CG,A,C,T */
03953      }
03954      , {{ -240, -770, -480, -660, -240} /* GT,CG,A,G,E */
03955      , { -240, -770, -480, -660, -240} /* GT,CG,A,G,A */
03956      , { -240, -770, -480, -660, -240} /* GT,CG,A,G,C */
03957      , { -240, -770, -480, -660, -240} /* GT,CG,A,G,G */
03958      , { -240, -770, -480, -660, -240} /* GT,CG,A,G,T */
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03960      , {{ -270, -800, -510, -690, -270} /* GT,CG,A,T,E */
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03963      , { -270, -800, -510, -690, -270} /* GT,CG,A,T,G */
03964      , { -270, -800, -510, -690, -270} /* GT,CG,A,T,T */
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03966      }
03967      , {{{ -190, -720, -430, -610, -190} /* GT,CG,C,E,E */
03968      , { -190, -720, -430, -610, -190} /* GT,CG,C,E,A */
03969      , { -190, -720, -430, -610, -190} /* GT,CG,C,E,C */
03970      , { -190, -720, -430, -610, -190} /* GT,CG,C,E,G */
03971      , { -190, -720, -430, -610, -190} /* GT,CG,C,E,T */
03972      }
03973      , {{ -230, -760, -470, -650, -230} /* GT,CG,C,A,E */
03974      , { -230, -760, -470, -650, -230} /* GT,CG,C,A,A */
03975      , { -230, -760, -470, -650, -230} /* GT,CG,C,A,C */
03976      , { -230, -760, -470, -650, -230} /* GT,CG,C,A,G */
03977      , { -230, -760, -470, -650, -230} /* GT,CG,C,A,T */
03978      }
03979      , {{ -190, -720, -430, -610, -190} /* GT,CG,C,C,E */
03980      , { -190, -720, -430, -610, -190} /* GT,CG,C,C,A */
03981      , { -190, -720, -430, -610, -190} /* GT,CG,C,C,C */
03982      , { -190, -720, -430, -610, -190} /* GT,CG,C,C,G */
03983      , { -190, -720, -430, -610, -190} /* GT,CG,C,C,T */
03984      }
03985      , {{ -240, -770, -480, -660, -240} /* GT,CG,C,G,E */
03986      , { -240, -770, -480, -660, -240} /* GT,CG,C,G,A */
03987      , { -240, -770, -480, -660, -240} /* GT,CG,C,G,C */
03988      , { -240, -770, -480, -660, -240} /* GT,CG,C,G,G */
03989      , { -240, -770, -480, -660, -240} /* GT,CG,C,G,T */
03990      }
03991      , {{ -270, -800, -510, -690, -270} /* GT,CG,C,T,E */
03992      , { -270, -800, -510, -690, -270} /* GT,CG,C,T,A */
03993      , { -270, -800, -510, -690, -270} /* GT,CG,C,T,C */
03994      , { -270, -800, -510, -690, -270} /* GT,CG,C,T,G */
03995      , { -270, -800, -510, -690, -270} /* GT,CG,C,T,T */
03996      }
03997      }
03998      , {{{ -190, -720, -430, -610, -190} /* GT,CG,G,E,E */
03999      , { -190, -720, -430, -610, -190} /* GT,CG,G,E,A */
04000      , { -190, -720, -430, -610, -190} /* GT,CG,G,E,C */

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04001      , { -190, -720, -430, -610, -190} /* GT,CG,G,E,G */
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04003      }
04004      , {{ -230, -760, -470, -650, -230} /* GT,CG,G,A,E */
04005      , { -230, -760, -470, -650, -230} /* GT,CG,G,A,A */
04006      , { -230, -760, -470, -650, -230} /* GT,CG,G,A,C */
04007      , { -230, -760, -470, -650, -230} /* GT,CG,G,A,G */
04008      , { -230, -760, -470, -650, -230} /* GT,CG,G,A,T */
04009      }
04010      , {{ -190, -720, -430, -610, -190} /* GT,CG,G,C,E */
04011      , { -190, -720, -430, -610, -190} /* GT,CG,G,C,A */
04012      , { -190, -720, -430, -610, -190} /* GT,CG,G,C,C */
04013      , { -190, -720, -430, -610, -190} /* GT,CG,G,C,G */
04014      , { -190, -720, -430, -610, -190} /* GT,CG,G,C,T */
04015      }
04016      , {{ -240, -770, -480, -660, -240} /* GT,CG,G,G,E */
04017      , { -240, -770, -480, -660, -240} /* GT,CG,G,G,A */
04018      , { -240, -770, -480, -660, -240} /* GT,CG,G,G,C */
04019      , { -240, -770, -480, -660, -240} /* GT,CG,G,G,G */
04020      , { -240, -770, -480, -660, -240} /* GT,CG,G,G,T */
04021      }
04022      , {{ -270, -800, -510, -690, -270} /* GT,CG,G,T,E */
04023      , { -270, -800, -510, -690, -270} /* GT,CG,G,T,A */
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04025      , { -270, -800, -510, -690, -270} /* GT,CG,G,T,G */
04026      , { -270, -800, -510, -690, -270} /* GT,CG,G,T,T */
04027      }
04028      }
04029      , {{{ -190, -720, -430, -610, -190} /* GT,CG,T,E,E */
04030      , { -190, -720, -430, -610, -190} /* GT,CG,T,E,A */
04031      , { -190, -720, -430, -610, -190} /* GT,CG,T,E,C */
04032      , { -190, -720, -430, -610, -190} /* GT,CG,T,E,G */
04033      , { -190, -720, -430, -610, -190} /* GT,CG,T,E,T */
04034      }
04035      , {{ -230, -760, -470, -650, -230} /* GT,CG,T,A,E */
04036      , { -230, -760, -470, -650, -230} /* GT,CG,T,A,A */
04037      , { -230, -760, -470, -650, -230} /* GT,CG,T,A,C */
04038      , { -230, -760, -470, -650, -230} /* GT,CG,T,A,G */
04039      , { -230, -760, -470, -650, -230} /* GT,CG,T,A,T */
04040      }
04041      , {{ -190, -720, -430, -610, -190} /* GT,CG,T,C,E */
04042      , { -190, -720, -430, -610, -190} /* GT,CG,T,C,A */
04043      , { -190, -720, -430, -610, -190} /* GT,CG,T,C,C */
04044      , { -190, -720, -430, -610, -190} /* GT,CG,T,C,G */
04045      , { -190, -720, -430, -610, -190} /* GT,CG,T,C,T */
04046      }
04047      , {{ -240, -770, -480, -660, -240} /* GT,CG,T,G,E */
04048      , { -240, -770, -480, -660, -240} /* GT,CG,T,G,A */
04049      , { -240, -770, -480, -660, -240} /* GT,CG,T,G,C */
04050      , { -240, -770, -480, -660, -240} /* GT,CG,T,G,G */
04051      , { -240, -770, -480, -660, -240} /* GT,CG,T,G,T */
04052      }
04053      , {{ -270, -800, -510, -690, -270} /* GT,CG,T,T,E */
04054      , { -270, -800, -510, -690, -270} /* GT,CG,T,T,A */
04055      , { -270, -800, -510, -690, -270} /* GT,CG,T,T,C */
04056      , { -270, -800, -510, -690, -270} /* GT,CG,T,T,G */
04057      , { -270, -800, -510, -690, -270} /* GT,CG,T,T,T */
04058      }
04059      }
04060      }
04061      , {{{ 140, -390, -100, -280, 140} /* GT,GC,E,E,E */
04062      , { 140, -390, -100, -280, 140} /* GT,GC,E,E,A */
04063      , { 140, -390, -100, -280, 140} /* GT,GC,E,E,C */
04064      , { 140, -390, -100, -280, 140} /* GT,GC,E,E,G */
04065      , { 140, -390, -100, -280, 140} /* GT,GC,E,E,T */
04066      }
04067      , {{ -390, -920, -630, -810, -390} /* GT,GC,E,A,E */
04068      , { -390, -920, -630, -810, -390} /* GT,GC,E,A,A */
04069      , { -390, -920, -630, -810, -390} /* GT,GC,E,A,C */
04070      , { -390, -920, -630, -810, -390} /* GT,GC,E,A,G */
04071      , { -390, -920, -630, -810, -390} /* GT,GC,E,A,T */
04072      }
04073      , {{ -100, -630, -340, -520, -100} /* GT,GC,E,C,E */
04074      , { -100, -630, -340, -520, -100} /* GT,GC,E,C,A */
04075      , { -100, -630, -340, -520, -100} /* GT,GC,E,C,C */
04076      , { -100, -630, -340, -520, -100} /* GT,GC,E,C,G */
04077      , { -100, -630, -340, -520, -100} /* GT,GC,E,C,T */
04078      }
04079      , {{ -280, -810, -520, -700, -280} /* GT,GC,E,G,E */
04080      , { -280, -810, -520, -700, -280} /* GT,GC,E,G,A */
04081      , { -280, -810, -520, -700, -280} /* GT,GC,E,G,C */
04082      , { -280, -810, -520, -700, -280} /* GT,GC,E,G,G */
04083      , { -280, -810, -520, -700, -280} /* GT,GC,E,G,T */
04084      }
04085      , {{ 140, -390, -100, -280, 140} /* GT,GC,E,T,E */
04086      , { 140, -390, -100, -280, 140} /* GT,GC,E,T,A */
04087      , { 140, -390, -100, -280, 140} /* GT,GC,E,T,C */

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04088      , {      140,    -390,    -100,    -280,    140} /* GT,GC,E,T,G */
04089      , {      140,    -390,    -100,    -280,    140} /* GT,GC,E,T,T */
04090      }
04091    }
04092  , {{{      140,    -390,    -100,    -280,    140} /* GT,GC,A,E,E */
04093      , {      140,    -390,    -100,    -280,    140} /* GT,GC,A,E,A */
04094      , {      140,    -390,    -100,    -280,    140} /* GT,GC,A,E,C */
04095      , {      140,    -390,    -100,    -280,    140} /* GT,GC,A,E,G */
04096      , {      140,    -390,    -100,    -280,    140} /* GT,GC,A,E,T */
04097      }
04098  , {{{    -390,    -920,    -630,    -810,   -390} /* GT,GC,A,A,E */
04099      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,A,A,A */
04100      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,A,A,C */
04101      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,A,A,G */
04102      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,A,A,T */
04103      }
04104  , {{{    -100,    -630,    -340,    -520,   -100} /* GT,GC,A,C,E */
04105      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,A,C,A */
04106      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,A,C,C */
04107      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,A,C,G */
04108      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,A,C,T */
04109      }
04110  , {{{    -280,    -810,    -520,    -700,   -280} /* GT,GC,A,G,E */
04111      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,A,G,A */
04112      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,A,G,C */
04113      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,A,G,G */
04114      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,A,G,T */
04115      }
04116  , {{{      140,    -390,    -100,    -280,    140} /* GT,GC,A,T,E */
04117      , {      140,    -390,    -100,    -280,    140} /* GT,GC,A,T,A */
04118      , {      140,    -390,    -100,    -280,    140} /* GT,GC,A,T,C */
04119      , {      140,    -390,    -100,    -280,    140} /* GT,GC,A,T,G */
04120      , {      140,    -390,    -100,    -280,    140} /* GT,GC,A,T,T */
04121      }
04122    }
04123  , {{{      140,    -390,    -100,    -280,    140} /* GT,GC,C,E,E */
04124      , {      140,    -390,    -100,    -280,    140} /* GT,GC,C,E,A */
04125      , {      140,    -390,    -100,    -280,    140} /* GT,GC,C,E,C */
04126      , {      140,    -390,    -100,    -280,    140} /* GT,GC,C,E,G */
04127      , {      140,    -390,    -100,    -280,    140} /* GT,GC,C,E,T */
04128      }
04129  , {{{    -390,    -920,    -630,    -810,   -390} /* GT,GC,C,A,E */
04130      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,C,A,A */
04131      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,C,A,C */
04132      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,C,A,G */
04133      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,C,A,T */
04134      }
04135  , {{{    -100,    -630,    -340,    -520,   -100} /* GT,GC,C,C,E */
04136      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,C,C,A */
04137      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,C,C,C */
04138      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,C,C,G */
04139      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,C,C,T */
04140      }
04141  , {{{    -280,    -810,    -520,    -700,   -280} /* GT,GC,C,G,E */
04142      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,C,G,A */
04143      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,C,G,C */
04144      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,C,G,G */
04145      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,C,G,T */
04146      }
04147  , {{{      140,    -390,    -100,    -280,    140} /* GT,GC,C,T,E */
04148      , {      140,    -390,    -100,    -280,    140} /* GT,GC,C,T,A */
04149      , {      140,    -390,    -100,    -280,    140} /* GT,GC,C,T,C */
04150      , {      140,    -390,    -100,    -280,    140} /* GT,GC,C,T,G */
04151      , {      140,    -390,    -100,    -280,    140} /* GT,GC,C,T,T */
04152      }
04153    }
04154  , {{{      140,    -390,    -100,    -280,    140} /* GT,GC,G,E,E */
04155      , {      140,    -390,    -100,    -280,    140} /* GT,GC,G,E,A */
04156      , {      140,    -390,    -100,    -280,    140} /* GT,GC,G,E,C */
04157      , {      140,    -390,    -100,    -280,    140} /* GT,GC,G,E,G */
04158      , {      140,    -390,    -100,    -280,    140} /* GT,GC,G,E,T */
04159      }
04160  , {{{    -390,    -920,    -630,    -810,   -390} /* GT,GC,G,A,E */
04161      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,G,A,A */
04162      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,G,A,C */
04163      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,G,A,G */
04164      , {    -390,    -920,    -630,    -810,   -390} /* GT,GC,G,A,T */
04165      }
04166  , {{{    -100,    -630,    -340,    -520,   -100} /* GT,GC,G,C,E */
04167      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,G,C,A */
04168      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,G,C,C */
04169      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,G,C,G */
04170      , {    -100,    -630,    -340,    -520,   -100} /* GT,GC,G,C,T */
04171      }
04172  , {{{    -280,    -810,    -520,    -700,   -280} /* GT,GC,G,G,E */
04173      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,G,G,A */
04174      , {    -280,    -810,    -520,    -700,   -280} /* GT,GC,G,G,C */

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04175      , { -280, -810, -520, -700, -280} /* GT,GC,G,G,G */
04176      , { -280, -810, -520, -700, -280} /* GT,GC,G,G,T */
04177      }
04178      , {{ 140, -390, -100, -280, 140} /* GT,GC,G,T,E */
04179      , { 140, -390, -100, -280, 140} /* GT,GC,G,T,A */
04180      , { 140, -390, -100, -280, 140} /* GT,GC,G,T,C */
04181      , { 140, -390, -100, -280, 140} /* GT,GC,G,T,G */
04182      , { 140, -390, -100, -280, 140} /* GT,GC,G,T,T */
04183      }
04184      }
04185      , {{ { 140, -390, -100, -280, 140} /* GT,GC,T,E,E */
04186      , { 140, -390, -100, -280, 140} /* GT,GC,T,E,A */
04187      , { 140, -390, -100, -280, 140} /* GT,GC,T,E,C */
04188      , { 140, -390, -100, -280, 140} /* GT,GC,T,E,G */
04189      , { 140, -390, -100, -280, 140} /* GT,GC,T,E,T */
04190      }
04191      , {{ { -390, -920, -630, -810, -390} /* GT,GC,T,A,E */
04192      , { -390, -920, -630, -810, -390} /* GT,GC,T,A,A */
04193      , { -390, -920, -630, -810, -390} /* GT,GC,T,A,C */
04194      , { -390, -920, -630, -810, -390} /* GT,GC,T,A,G */
04195      , { -390, -920, -630, -810, -390} /* GT,GC,T,A,T */
04196      }
04197      , {{ { -100, -630, -340, -520, -100} /* GT,GC,T,C,E */
04198      , { -100, -630, -340, -520, -100} /* GT,GC,T,C,A */
04199      , { -100, -630, -340, -520, -100} /* GT,GC,T,C,C */
04200      , { -100, -630, -340, -520, -100} /* GT,GC,T,C,G */
04201      , { -100, -630, -340, -520, -100} /* GT,GC,T,C,T */
04202      }
04203      , {{ { -280, -810, -520, -700, -280} /* GT,GC,T,G,E */
04204      , { -280, -810, -520, -700, -280} /* GT,GC,T,G,A */
04205      , { -280, -810, -520, -700, -280} /* GT,GC,T,G,C */
04206      , { -280, -810, -520, -700, -280} /* GT,GC,T,G,G */
04207      , { -280, -810, -520, -700, -280} /* GT,GC,T,G,T */
04208      }
04209      , {{ { 140, -390, -100, -280, 140} /* GT,GC,T,T,E */
04210      , { 140, -390, -100, -280, 140} /* GT,GC,T,T,A */
04211      , { 140, -390, -100, -280, 140} /* GT,GC,T,T,C */
04212      , { 140, -390, -100, -280, 140} /* GT,GC,T,T,G */
04213      , { 140, -390, -100, -280, 140} /* GT,GC,T,T,T */
04214      }
04215      }
04216      }
04217      , {{{ { 460, -70, 220, 40, 460} /* GT,GT,E,E,E */
04218      , { 460, -70, 220, 40, 460} /* GT,GT,E,E,A */
04219      , { 460, -70, 220, 40, 460} /* GT,GT,E,E,C */
04220      , { 460, -70, 220, 40, 460} /* GT,GT,E,E,G */
04221      , { 460, -70, 220, 40, 460} /* GT,GT,E,E,T */
04222      }
04223      , {{ { -70, -600, -310, -490, -70} /* GT,GT,E,A,E */
04224      , { -70, -600, -310, -490, -70} /* GT,GT,E,A,A */
04225      , { -70, -600, -310, -490, -70} /* GT,GT,E,A,C */
04226      , { -70, -600, -310, -490, -70} /* GT,GT,E,A,G */
04227      , { -70, -600, -310, -490, -70} /* GT,GT,E,A,T */
04228      }
04229      , {{ { 220, -310, -20, -200, 220} /* GT,GT,E,C,E */
04230      , { 220, -310, -20, -200, 220} /* GT,GT,E,C,A */
04231      , { 220, -310, -20, -200, 220} /* GT,GT,E,C,C */
04232      , { 220, -310, -20, -200, 220} /* GT,GT,E,C,G */
04233      , { 220, -310, -20, -200, 220} /* GT,GT,E,C,T */
04234      }
04235      , {{ { 40, -490, -200, -380, 40} /* GT,GT,E,G,E */
04236      , { 40, -490, -200, -380, 40} /* GT,GT,E,G,A */
04237      , { 40, -490, -200, -380, 40} /* GT,GT,E,G,C */
04238      , { 40, -490, -200, -380, 40} /* GT,GT,E,G,G */
04239      , { 40, -490, -200, -380, 40} /* GT,GT,E,G,T */
04240      }
04241      , {{ { 460, -70, 220, 40, 460} /* GT,GT,E,T,E */
04242      , { 460, -70, 220, 40, 460} /* GT,GT,E,T,A */
04243      , { 460, -70, 220, 40, 460} /* GT,GT,E,T,C */
04244      , { 460, -70, 220, 40, 460} /* GT,GT,E,T,G */
04245      , { 460, -70, 220, 40, 460} /* GT,GT,E,T,T */
04246      }
04247      }
04248      , {{{ { 460, -70, 220, 40, 460} /* GT,GT,A,E,E */
04249      , { 460, -70, 220, 40, 460} /* GT,GT,A,E,A */
04250      , { 460, -70, 220, 40, 460} /* GT,GT,A,E,C */
04251      , { 460, -70, 220, 40, 460} /* GT,GT,A,E,G */
04252      , { 460, -70, 220, 40, 460} /* GT,GT,A,E,T */
04253      }
04254      , {{ { -70, -600, -310, -490, -70} /* GT,GT,A,A,E */
04255      , { -70, -600, -310, -490, -70} /* GT,GT,A,A,A */
04256      , { -70, -600, -310, -490, -70} /* GT,GT,A,A,C */
04257      , { -70, -600, -310, -490, -70} /* GT,GT,A,A,G */
04258      , { -70, -600, -310, -490, -70} /* GT,GT,A,A,T */
04259      }
04260      , {{ { 220, -310, -20, -200, 220} /* GT,GT,A,C,E */
04261      , { 220, -310, -20, -200, 220} /* GT,GT,A,C,A */

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04262 , { 220, -310, -20, -200, 220} /* GT,GT,A,C,C */
04263 , { 220, -310, -20, -200, 220} /* GT,GT,A,C,G */
04264 , { 220, -310, -20, -200, 220} /* GT,GT,A,C,T */
04265 }
04266 , { { 40, -490, -200, -380, 40} /* GT,GT,A,G,E */
04267 , { 40, -490, -200, -380, 40} /* GT,GT,A,G,A */
04268 , { 40, -490, -200, -380, 40} /* GT,GT,A,G,C */
04269 , { 40, -490, -200, -380, 40} /* GT,GT,A,G,G */
04270 , { 40, -490, -200, -380, 40} /* GT,GT,A,G,T */
04271 }
04272 , { { 460, -70, 220, 40, 460} /* GT,GT,A,T,E */
04273 , { 460, -70, 220, 40, 460} /* GT,GT,A,T,A */
04274 , { 460, -70, 220, 40, 460} /* GT,GT,A,T,C */
04275 , { 460, -70, 220, 40, 460} /* GT,GT,A,T,G */
04276 , { 460, -70, 220, 40, 460} /* GT,GT,A,T,T */
04277 }
04278 }
04279 , { { { 460, -70, 220, 40, 460} /* GT,GT,C,E,E */
04280 , { 460, -70, 220, 40, 460} /* GT,GT,C,E,A */
04281 , { 460, -70, 220, 40, 460} /* GT,GT,C,E,C */
04282 , { 460, -70, 220, 40, 460} /* GT,GT,C,E,G */
04283 , { 460, -70, 220, 40, 460} /* GT,GT,C,E,T */
04284 }
04285 , { { -70, -600, -310, -490, -70} /* GT,GT,C,A,E */
04286 , { -70, -600, -310, -490, -70} /* GT,GT,C,A,A */
04287 , { -70, -600, -310, -490, -70} /* GT,GT,C,A,C */
04288 , { -70, -600, -310, -490, -70} /* GT,GT,C,A,G */
04289 , { -70, -600, -310, -490, -70} /* GT,GT,C,A,T */
04290 }
04291 , { { 220, -310, -20, -200, 220} /* GT,GT,C,C,E */
04292 , { 220, -310, -20, -200, 220} /* GT,GT,C,C,A */
04293 , { 220, -310, -20, -200, 220} /* GT,GT,C,C,C */
04294 , { 220, -310, -20, -200, 220} /* GT,GT,C,C,G */
04295 , { 220, -310, -20, -200, 220} /* GT,GT,C,C,T */
04296 }
04297 , { { 40, -490, -200, -380, 40} /* GT,GT,C,G,E */
04298 , { 40, -490, -200, -380, 40} /* GT,GT,C,G,A */
04299 , { 40, -490, -200, -380, 40} /* GT,GT,C,G,C */
04300 , { 40, -490, -200, -380, 40} /* GT,GT,C,G,G */
04301 , { 40, -490, -200, -380, 40} /* GT,GT,C,G,T */
04302 }
04303 , { { 460, -70, 220, 40, 460} /* GT,GT,C,T,E */
04304 , { 460, -70, 220, 40, 460} /* GT,GT,C,T,A */
04305 , { 460, -70, 220, 40, 460} /* GT,GT,C,T,C */
04306 , { 460, -70, 220, 40, 460} /* GT,GT,C,T,G */
04307 , { 460, -70, 220, 40, 460} /* GT,GT,C,T,T */
04308 }
04309 }
04310 , { { { 460, -70, 220, 40, 460} /* GT,GT,G,E,E */
04311 , { 460, -70, 220, 40, 460} /* GT,GT,G,E,A */
04312 , { 460, -70, 220, 40, 460} /* GT,GT,G,E,C */
04313 , { 460, -70, 220, 40, 460} /* GT,GT,G,E,G */
04314 , { 460, -70, 220, 40, 460} /* GT,GT,G,E,T */
04315 }
04316 , { { -70, -600, -310, -490, -70} /* GT,GT,G,A,E */
04317 , { -70, -600, -310, -490, -70} /* GT,GT,G,A,A */
04318 , { -70, -600, -310, -490, -70} /* GT,GT,G,A,C */
04319 , { -70, -600, -310, -490, -70} /* GT,GT,G,A,G */
04320 , { -70, -600, -310, -490, -70} /* GT,GT,G,A,T */
04321 }
04322 , { { 220, -310, -20, -200, 220} /* GT,GT,G,C,E */
04323 , { 220, -310, -20, -200, 220} /* GT,GT,G,C,A */
04324 , { 220, -310, -20, -200, 220} /* GT,GT,G,C,C */
04325 , { 220, -310, -20, -200, 220} /* GT,GT,G,C,G */
04326 , { 220, -310, -20, -200, 220} /* GT,GT,G,C,T */
04327 }
04328 , { { 40, -490, -200, -380, 40} /* GT,GT,G,G,E */
04329 , { 40, -490, -200, -380, 40} /* GT,GT,G,G,A */
04330 , { 40, -490, -200, -380, 40} /* GT,GT,G,G,C */
04331 , { 40, -490, -200, -380, 40} /* GT,GT,G,G,G */
04332 , { 40, -490, -200, -380, 40} /* GT,GT,G,G,T */
04333 }
04334 , { { 460, -70, 220, 40, 460} /* GT,GT,G,T,E */
04335 , { 460, -70, 220, 40, 460} /* GT,GT,G,T,A */
04336 , { 460, -70, 220, 40, 460} /* GT,GT,G,T,C */
04337 , { 460, -70, 220, 40, 460} /* GT,GT,G,T,G */
04338 , { 460, -70, 220, 40, 460} /* GT,GT,G,T,T */
04339 }
04340 }
04341 , { { { 460, -70, 220, 40, 460} /* GT,GT,T,E,E */
04342 , { 460, -70, 220, 40, 460} /* GT,GT,T,E,A */
04343 , { 460, -70, 220, 40, 460} /* GT,GT,T,E,C */
04344 , { 460, -70, 220, 40, 460} /* GT,GT,T,E,G */
04345 , { 460, -70, 220, 40, 460} /* GT,GT,T,E,T */
04346 }
04347 , { { -70, -600, -310, -490, -70} /* GT,GT,T,A,E */
04348 , { -70, -600, -310, -490, -70} /* GT,GT,T,A,A */
```

```

04349 , { -70, -600, -310, -490, -70} /* GT,GT,T,A,C */
04350 , { -70, -600, -310, -490, -70} /* GT,GT,T,A,G */
04351 , { -70, -600, -310, -490, -70} /* GT,GT,T,A,T */
04352 }
04353 , { { 220, -310, -20, -200, 220} /* GT,GT,T,C,E */
04354 , { 220, -310, -20, -200, 220} /* GT,GT,T,C,A */
04355 , { 220, -310, -20, -200, 220} /* GT,GT,T,C,C */
04356 , { 220, -310, -20, -200, 220} /* GT,GT,T,C,G */
04357 , { 220, -310, -20, -200, 220} /* GT,GT,T,C,T */
04358 }
04359 , { { 40, -490, -200, -380, 40} /* GT,GT,T,G,E */
04360 , { 40, -490, -200, -380, 40} /* GT,GT,T,G,A */
04361 , { 40, -490, -200, -380, 40} /* GT,GT,T,G,C */
04362 , { 40, -490, -200, -380, 40} /* GT,GT,T,G,G */
04363 , { 40, -490, -200, -380, 40} /* GT,GT,T,G,T */
04364 }
04365 , { { 460, -70, 220, 40, 460} /* GT,GT,T,T,E */
04366 , { 460, -70, 220, 40, 460} /* GT,GT,T,T,A */
04367 , { 460, -70, 220, 40, 460} /* GT,GT,T,T,C */
04368 , { 460, -70, 220, 40, 460} /* GT,GT,T,T,G */
04369 , { 460, -70, 220, 40, 460} /* GT,GT,T,T,T */
04370 }
04371 }
04372 }
04373 , { { { 490, -40, 250, 70, 490} /* GT,TG,E,E,E */
04374 , { 490, -40, 250, 70, 490} /* GT,TG,E,E,A */
04375 , { 490, -40, 250, 70, 490} /* GT,TG,E,E,C */
04376 , { 490, -40, 250, 70, 490} /* GT,TG,E,E,G */
04377 , { 490, -40, 250, 70, 490} /* GT,TG,E,E,T */
04378 }
04379 , { { 460, -70, 220, 40, 460} /* GT,TG,E,A,E */
04380 , { 460, -70, 220, 40, 460} /* GT,TG,E,A,A */
04381 , { 460, -70, 220, 40, 460} /* GT,TG,E,A,C */
04382 , { 460, -70, 220, 40, 460} /* GT,TG,E,A,G */
04383 , { 460, -70, 220, 40, 460} /* GT,TG,E,A,T */
04384 }
04385 , { { 490, -40, 250, 70, 490} /* GT,TG,E,C,E */
04386 , { 490, -40, 250, 70, 490} /* GT,TG,E,C,A */
04387 , { 490, -40, 250, 70, 490} /* GT,TG,E,C,C */
04388 , { 490, -40, 250, 70, 490} /* GT,TG,E,C,G */
04389 , { 490, -40, 250, 70, 490} /* GT,TG,E,C,T */
04390 }
04391 , { { 300, -230, 60, -120, 300} /* GT,TG,E,G,E */
04392 , { 300, -230, 60, -120, 300} /* GT,TG,E,G,A */
04393 , { 300, -230, 60, -120, 300} /* GT,TG,E,G,C */
04394 , { 300, -230, 60, -120, 300} /* GT,TG,E,G,G */
04395 , { 300, -230, 60, -120, 300} /* GT,TG,E,G,T */
04396 }
04397 , { { -350, -880, -590, -770, -350} /* GT,TG,E,T,E */
04398 , { -350, -880, -590, -770, -350} /* GT,TG,E,T,A */
04399 , { -350, -880, -590, -770, -350} /* GT,TG,E,T,C */
04400 , { -350, -880, -590, -770, -350} /* GT,TG,E,T,G */
04401 , { -350, -880, -590, -770, -350} /* GT,TG,E,T,T */
04402 }
04403 }
04404 , { { { 490, -40, 250, 70, 490} /* GT,TG,A,E,E */
04405 , { 490, -40, 250, 70, 490} /* GT,TG,A,E,A */
04406 , { 490, -40, 250, 70, 490} /* GT,TG,A,E,C */
04407 , { 490, -40, 250, 70, 490} /* GT,TG,A,E,G */
04408 , { 490, -40, 250, 70, 490} /* GT,TG,A,E,T */
04409 }
04410 , { { 460, -70, 220, 40, 460} /* GT,TG,A,A,E */
04411 , { 460, -70, 220, 40, 460} /* GT,TG,A,A,A */
04412 , { 460, -70, 220, 40, 460} /* GT,TG,A,A,C */
04413 , { 460, -70, 220, 40, 460} /* GT,TG,A,A,G */
04414 , { 460, -70, 220, 40, 460} /* GT,TG,A,A,T */
04415 }
04416 , { { 490, -40, 250, 70, 490} /* GT,TG,A,C,E */
04417 , { 490, -40, 250, 70, 490} /* GT,TG,A,C,A */
04418 , { 490, -40, 250, 70, 490} /* GT,TG,A,C,C */
04419 , { 490, -40, 250, 70, 490} /* GT,TG,A,C,G */
04420 , { 490, -40, 250, 70, 490} /* GT,TG,A,C,T */
04421 }
04422 , { { 300, -230, 60, -120, 300} /* GT,TG,A,G,E */
04423 , { 300, -230, 60, -120, 300} /* GT,TG,A,G,A */
04424 , { 300, -230, 60, -120, 300} /* GT,TG,A,G,C */
04425 , { 300, -230, 60, -120, 300} /* GT,TG,A,G,G */
04426 , { 300, -230, 60, -120, 300} /* GT,TG,A,G,T */
04427 }
04428 , { { -350, -880, -590, -770, -350} /* GT,TG,A,T,E */
04429 , { -350, -880, -590, -770, -350} /* GT,TG,A,T,A */
04430 , { -350, -880, -590, -770, -350} /* GT,TG,A,T,C */
04431 , { -350, -880, -590, -770, -350} /* GT,TG,A,T,G */
04432 , { -350, -880, -590, -770, -350} /* GT,TG,A,T,T */
04433 }
04434 }
04435 , { { { 490, -40, 250, 70, 490} /* GT,TG,C,E,E */

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04436 , { 490, -40, 250, 70, 490} /* GT,TG,C,E,A */
04437 , { 490, -40, 250, 70, 490} /* GT,TG,C,E,C */
04438 , { 490, -40, 250, 70, 490} /* GT,TG,C,E,G */
04439 , { 490, -40, 250, 70, 490} /* GT,TG,C,E,T */
04440 }
04441 , { { 460, -70, 220, 40, 460} /* GT,TG,C,A,E */
04442 , { 460, -70, 220, 40, 460} /* GT,TG,C,A,A */
04443 , { 460, -70, 220, 40, 460} /* GT,TG,C,A,C */
04444 , { 460, -70, 220, 40, 460} /* GT,TG,C,A,G */
04445 , { 460, -70, 220, 40, 460} /* GT,TG,C,A,T */
04446 }
04447 , { { 490, -40, 250, 70, 490} /* GT,TG,C,C,E */
04448 , { 490, -40, 250, 70, 490} /* GT,TG,C,C,A */
04449 , { 490, -40, 250, 70, 490} /* GT,TG,C,C,C */
04450 , { 490, -40, 250, 70, 490} /* GT,TG,C,C,G */
04451 , { 490, -40, 250, 70, 490} /* GT,TG,C,C,T */
04452 }
04453 , { { 300, -230, 60, -120, 300} /* GT,TG,C,G,E */
04454 , { 300, -230, 60, -120, 300} /* GT,TG,C,G,A */
04455 , { 300, -230, 60, -120, 300} /* GT,TG,C,G,C */
04456 , { 300, -230, 60, -120, 300} /* GT,TG,C,G,G */
04457 , { 300, -230, 60, -120, 300} /* GT,TG,C,G,T */
04458 }
04459 , { { -350, -880, -590, -770, -350} /* GT,TG,C,T,E */
04460 , { -350, -880, -590, -770, -350} /* GT,TG,C,T,A */
04461 , { -350, -880, -590, -770, -350} /* GT,TG,C,T,C */
04462 , { -350, -880, -590, -770, -350} /* GT,TG,C,T,G */
04463 , { -350, -880, -590, -770, -350} /* GT,TG,C,T,T */
04464 }
04465 }
04466 , { { { 490, -40, 250, 70, 490} /* GT,TG,G,E,E */
04467 , { 490, -40, 250, 70, 490} /* GT,TG,G,E,A */
04468 , { 490, -40, 250, 70, 490} /* GT,TG,G,E,C */
04469 , { 490, -40, 250, 70, 490} /* GT,TG,G,E,G */
04470 , { 490, -40, 250, 70, 490} /* GT,TG,G,E,T */
04471 }
04472 , { { 460, -70, 220, 40, 460} /* GT,TG,G,A,E */
04473 , { 460, -70, 220, 40, 460} /* GT,TG,G,A,A */
04474 , { 460, -70, 220, 40, 460} /* GT,TG,G,A,C */
04475 , { 460, -70, 220, 40, 460} /* GT,TG,G,A,G */
04476 , { 460, -70, 220, 40, 460} /* GT,TG,G,A,T */
04477 }
04478 , { { 490, -40, 250, 70, 490} /* GT,TG,G,C,E */
04479 , { 490, -40, 250, 70, 490} /* GT,TG,G,C,A */
04480 , { 490, -40, 250, 70, 490} /* GT,TG,G,C,C */
04481 , { 490, -40, 250, 70, 490} /* GT,TG,G,C,G */
04482 , { 490, -40, 250, 70, 490} /* GT,TG,G,C,T */
04483 }
04484 , { { 300, -230, 60, -120, 300} /* GT,TG,G,G,E */
04485 , { 300, -230, 60, -120, 300} /* GT,TG,G,G,A */
04486 , { 300, -230, 60, -120, 300} /* GT,TG,G,G,C */
04487 , { 300, -230, 60, -120, 300} /* GT,TG,G,G,G */
04488 , { 300, -230, 60, -120, 300} /* GT,TG,G,G,T */
04489 }
04490 , { { -350, -880, -590, -770, -350} /* GT,TG,G,T,E */
04491 , { -350, -880, -590, -770, -350} /* GT,TG,G,T,A */
04492 , { -350, -880, -590, -770, -350} /* GT,TG,G,T,C */
04493 , { -350, -880, -590, -770, -350} /* GT,TG,G,T,G */
04494 , { -350, -880, -590, -770, -350} /* GT,TG,G,T,T */
04495 }
04496 }
04497 , { { { 490, -40, 250, 70, 490} /* GT,TG,T,E,E */
04498 , { 490, -40, 250, 70, 490} /* GT,TG,T,E,A */
04499 , { 490, -40, 250, 70, 490} /* GT,TG,T,E,C */
04500 , { 490, -40, 250, 70, 490} /* GT,TG,T,E,G */
04501 , { 490, -40, 250, 70, 490} /* GT,TG,T,E,T */
04502 }
04503 , { { 460, -70, 220, 40, 460} /* GT,TG,T,A,E */
04504 , { 460, -70, 220, 40, 460} /* GT,TG,T,A,A */
04505 , { 460, -70, 220, 40, 460} /* GT,TG,T,A,C */
04506 , { 460, -70, 220, 40, 460} /* GT,TG,T,A,G */
04507 , { 460, -70, 220, 40, 460} /* GT,TG,T,A,T */
04508 }
04509 , { { 490, -40, 250, 70, 490} /* GT,TG,T,C,E */
04510 , { 490, -40, 250, 70, 490} /* GT,TG,T,C,A */
04511 , { 490, -40, 250, 70, 490} /* GT,TG,T,C,C */
04512 , { 490, -40, 250, 70, 490} /* GT,TG,T,C,G */
04513 , { 490, -40, 250, 70, 490} /* GT,TG,T,C,T */
04514 }
04515 , { { 300, -230, 60, -120, 300} /* GT,TG,T,G,E */
04516 , { 300, -230, 60, -120, 300} /* GT,TG,T,G,A */
04517 , { 300, -230, 60, -120, 300} /* GT,TG,T,G,C */
04518 , { 300, -230, 60, -120, 300} /* GT,TG,T,G,G */
04519 , { 300, -230, 60, -120, 300} /* GT,TG,T,G,T */
04520 }
04521 , { { -350, -880, -590, -770, -350} /* GT,TG,T,T,E */
04522 , { -350, -880, -590, -770, -350} /* GT,TG,T,T,A */
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```

04523      , { -350, -880, -590, -770, -350} /* GT,TG,T,T,C */
04524      , { -350, -880, -590, -770, -350} /* GT,TG,T,T,G */
04525      , { -350, -880, -590, -770, -350} /* GT,TG,T,T,T */
04526      }
04527      }
04528      }
04529      ,{{{ 750, 220, 510, 330, 750} /* GT,AT,E,E,E */
04530      , { 750, 220, 510, 330, 750} /* GT,AT,E,E,A */
04531      , { 750, 220, 510, 330, 750} /* GT,AT,E,E,C */
04532      , { 750, 220, 510, 330, 750} /* GT,AT,E,E,G */
04533      , { 750, 220, 510, 330, 750} /* GT,AT,E,E,T */
04534      }
04535      ,{{ 630, 100, 390, 210, 630} /* GT,AT,E,A,E */
04536      , { 630, 100, 390, 210, 630} /* GT,AT,E,A,A */
04537      , { 630, 100, 390, 210, 630} /* GT,AT,E,A,C */
04538      , { 630, 100, 390, 210, 630} /* GT,AT,E,A,G */
04539      , { 630, 100, 390, 210, 630} /* GT,AT,E,A,T */
04540      }
04541      ,{{ 750, 220, 510, 330, 750} /* GT,AT,E,C,E */
04542      , { 750, 220, 510, 330, 750} /* GT,AT,E,C,A */
04543      , { 750, 220, 510, 330, 750} /* GT,AT,E,C,C */
04544      , { 750, 220, 510, 330, 750} /* GT,AT,E,C,G */
04545      , { 750, 220, 510, 330, 750} /* GT,AT,E,C,T */
04546      }
04547      ,{{ 700, 170, 460, 280, 700} /* GT,AT,E,G,E */
04548      , { 700, 170, 460, 280, 700} /* GT,AT,E,G,A */
04549      , { 700, 170, 460, 280, 700} /* GT,AT,E,G,C */
04550      , { 700, 170, 460, 280, 700} /* GT,AT,E,G,G */
04551      , { 700, 170, 460, 280, 700} /* GT,AT,E,G,T */
04552      }
04553      ,{{ 660, 130, 420, 240, 660} /* GT,AT,E,T,E */
04554      , { 660, 130, 420, 240, 660} /* GT,AT,E,T,A */
04555      , { 660, 130, 420, 240, 660} /* GT,AT,E,T,C */
04556      , { 660, 130, 420, 240, 660} /* GT,AT,E,T,G */
04557      , { 660, 130, 420, 240, 660} /* GT,AT,E,T,T */
04558      }
04559      }
04560      ,{{{ 750, 220, 510, 330, 750} /* GT,AT,A,E,E */
04561      , { 750, 220, 510, 330, 750} /* GT,AT,A,E,A */
04562      , { 750, 220, 510, 330, 750} /* GT,AT,A,E,C */
04563      , { 750, 220, 510, 330, 750} /* GT,AT,A,E,G */
04564      , { 750, 220, 510, 330, 750} /* GT,AT,A,E,T */
04565      }
04566      ,{{ 630, 100, 390, 210, 630} /* GT,AT,A,A,E */
04567      , { 630, 100, 390, 210, 630} /* GT,AT,A,A,A */
04568      , { 630, 100, 390, 210, 630} /* GT,AT,A,A,C */
04569      , { 630, 100, 390, 210, 630} /* GT,AT,A,A,G */
04570      , { 630, 100, 390, 210, 630} /* GT,AT,A,A,T */
04571      }
04572      ,{{{ 750, 220, 510, 330, 750} /* GT,AT,A,C,E */
04573      , { 750, 220, 510, 330, 750} /* GT,AT,A,C,A */
04574      , { 750, 220, 510, 330, 750} /* GT,AT,A,C,C */
04575      , { 750, 220, 510, 330, 750} /* GT,AT,A,C,G */
04576      , { 750, 220, 510, 330, 750} /* GT,AT,A,C,T */
04577      }
04578      ,{{ 700, 170, 460, 280, 700} /* GT,AT,A,G,E */
04579      , { 700, 170, 460, 280, 700} /* GT,AT,A,G,A */
04580      , { 700, 170, 460, 280, 700} /* GT,AT,A,G,C */
04581      , { 700, 170, 460, 280, 700} /* GT,AT,A,G,G */
04582      , { 700, 170, 460, 280, 700} /* GT,AT,A,G,T */
04583      }
04584      ,{{{ 660, 130, 420, 240, 660} /* GT,AT,A,T,E */
04585      , { 660, 130, 420, 240, 660} /* GT,AT,A,T,A */
04586      , { 660, 130, 420, 240, 660} /* GT,AT,A,T,C */
04587      , { 660, 130, 420, 240, 660} /* GT,AT,A,T,G */
04588      , { 660, 130, 420, 240, 660} /* GT,AT,A,T,T */
04589      }
04590      }
04591      ,{{{ 750, 220, 510, 330, 750} /* GT,AT,C,E,E */
04592      , { 750, 220, 510, 330, 750} /* GT,AT,C,E,A */
04593      , { 750, 220, 510, 330, 750} /* GT,AT,C,E,C */
04594      , { 750, 220, 510, 330, 750} /* GT,AT,C,E,G */
04595      , { 750, 220, 510, 330, 750} /* GT,AT,C,E,T */
04596      }
04597      ,{{ 630, 100, 390, 210, 630} /* GT,AT,C,A,E */
04598      , { 630, 100, 390, 210, 630} /* GT,AT,C,A,A */
04599      , { 630, 100, 390, 210, 630} /* GT,AT,C,A,C */
04600      , { 630, 100, 390, 210, 630} /* GT,AT,C,A,G */
04601      , { 630, 100, 390, 210, 630} /* GT,AT,C,A,T */
04602      }
04603      ,{{ 750, 220, 510, 330, 750} /* GT,AT,C,C,E */
04604      , { 750, 220, 510, 330, 750} /* GT,AT,C,C,A */
04605      , { 750, 220, 510, 330, 750} /* GT,AT,C,C,C */
04606      , { 750, 220, 510, 330, 750} /* GT,AT,C,C,G */
04607      , { 750, 220, 510, 330, 750} /* GT,AT,C,C,T */
04608      }
04609      ,{{ 700, 170, 460, 280, 700} /* GT,AT,C,G,E */

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```
04610      , {      700,      170,      460,      280,      700} /* GT,AT,C,G,A */
04611      , {      700,      170,      460,      280,      700} /* GT,AT,C,G,C */
04612      , {      700,      170,      460,      280,      700} /* GT,AT,C,G,G */
04613      , {      700,      170,      460,      280,      700} /* GT,AT,C,G,T */
04614      }
04615      , { {      660,      130,      420,      240,      660} /* GT,AT,C,T,E */
04616      , {      660,      130,      420,      240,      660} /* GT,AT,C,T,A */
04617      , {      660,      130,      420,      240,      660} /* GT,AT,C,T,C */
04618      , {      660,      130,      420,      240,      660} /* GT,AT,C,T,G */
04619      , {      660,      130,      420,      240,      660} /* GT,AT,C,T,T */
04620      }
04621      }
04622      , { { {      750,      220,      510,      330,      750} /* GT,AT,G,E,E */
04623      , {      750,      220,      510,      330,      750} /* GT,AT,G,E,A */
04624      , {      750,      220,      510,      330,      750} /* GT,AT,G,E,C */
04625      , {      750,      220,      510,      330,      750} /* GT,AT,G,E,G */
04626      , {      750,      220,      510,      330,      750} /* GT,AT,G,E,T */
04627      }
04628      , { {      630,      100,      390,      210,      630} /* GT,AT,G,A,E */
04629      , {      630,      100,      390,      210,      630} /* GT,AT,G,A,A */
04630      , {      630,      100,      390,      210,      630} /* GT,AT,G,A,C */
04631      , {      630,      100,      390,      210,      630} /* GT,AT,G,A,G */
04632      , {      630,      100,      390,      210,      630} /* GT,AT,G,A,T */
04633      }
04634      , { {      750,      220,      510,      330,      750} /* GT,AT,G,C,E */
04635      , {      750,      220,      510,      330,      750} /* GT,AT,G,C,A */
04636      , {      750,      220,      510,      330,      750} /* GT,AT,G,C,C */
04637      , {      750,      220,      510,      330,      750} /* GT,AT,G,C,G */
04638      , {      750,      220,      510,      330,      750} /* GT,AT,G,C,T */
04639      }
04640      , { {      700,      170,      460,      280,      700} /* GT,AT,G,G,E */
04641      , {      700,      170,      460,      280,      700} /* GT,AT,G,G,A */
04642      , {      700,      170,      460,      280,      700} /* GT,AT,G,G,C */
04643      , {      700,      170,      460,      280,      700} /* GT,AT,G,G,G */
04644      , {      700,      170,      460,      280,      700} /* GT,AT,G,G,T */
04645      }
04646      , { {      660,      130,      420,      240,      660} /* GT,AT,G,T,E */
04647      , {      660,      130,      420,      240,      660} /* GT,AT,G,T,A */
04648      , {      660,      130,      420,      240,      660} /* GT,AT,G,T,C */
04649      , {      660,      130,      420,      240,      660} /* GT,AT,G,T,G */
04650      , {      660,      130,      420,      240,      660} /* GT,AT,G,T,T */
04651      }
04652      }
04653      , { { {      750,      220,      510,      330,      750} /* GT,AT,T,E,E */
04654      , {      750,      220,      510,      330,      750} /* GT,AT,T,E,A */
04655      , {      750,      220,      510,      330,      750} /* GT,AT,T,E,C */
04656      , {      750,      220,      510,      330,      750} /* GT,AT,T,E,G */
04657      , {      750,      220,      510,      330,      750} /* GT,AT,T,E,T */
04658      }
04659      , { {      630,      100,      390,      210,      630} /* GT,AT,T,A,E */
04660      , {      630,      100,      390,      210,      630} /* GT,AT,T,A,A */
04661      , {      630,      100,      390,      210,      630} /* GT,AT,T,A,C */
04662      , {      630,      100,      390,      210,      630} /* GT,AT,T,A,G */
04663      , {      630,      100,      390,      210,      630} /* GT,AT,T,A,T */
04664      }
04665      , { {      750,      220,      510,      330,      750} /* GT,AT,T,C,E */
04666      , {      750,      220,      510,      330,      750} /* GT,AT,T,C,A */
04667      , {      750,      220,      510,      330,      750} /* GT,AT,T,C,C */
04668      , {      750,      220,      510,      330,      750} /* GT,AT,T,C,G */
04669      , {      750,      220,      510,      330,      750} /* GT,AT,T,C,T */
04670      }
04671      , { {      700,      170,      460,      280,      700} /* GT,AT,T,G,E */
04672      , {      700,      170,      460,      280,      700} /* GT,AT,T,G,A */
04673      , {      700,      170,      460,      280,      700} /* GT,AT,T,G,C */
04674      , {      700,      170,      460,      280,      700} /* GT,AT,T,G,G */
04675      , {      700,      170,      460,      280,      700} /* GT,AT,T,G,T */
04676      }
04677      , { {      660,      130,      420,      240,      660} /* GT,AT,T,T,E */
04678      , {      660,      130,      420,      240,      660} /* GT,AT,T,T,A */
04679      , {      660,      130,      420,      240,      660} /* GT,AT,T,T,C */
04680      , {      660,      130,      420,      240,      660} /* GT,AT,T,T,G */
04681      , {      660,      130,      420,      240,      660} /* GT,AT,T,T,T */
04682      }
04683      }
04684      }
04685      , { { { {      490,      -40,      250,      70,      490} /* GT,TA,E,E,E */
04686      , {      490,      -40,      250,      70,      490} /* GT,TA,E,E,A */
04687      , {      490,      -40,      250,      70,      490} /* GT,TA,E,E,C */
04688      , {      490,      -40,      250,      70,      490} /* GT,TA,E,E,G */
04689      , {      490,      -40,      250,      70,      490} /* GT,TA,E,E,T */
04690      }
04691      , { {      460,      -70,      220,      40,      460} /* GT,TA,E,A,E */
04692      , {      460,      -70,      220,      40,      460} /* GT,TA,E,A,A */
04693      , {      460,      -70,      220,      40,      460} /* GT,TA,E,A,C */
04694      , {      460,      -70,      220,      40,      460} /* GT,TA,E,A,G */
04695      , {      460,      -70,      220,      40,      460} /* GT,TA,E,A,T */
04696      }
```

```

04697 ,{{ 490, -40, 250, 70, 490} /* GT,TA,E,C,E */
04698 ,{ 490, -40, 250, 70, 490} /* GT,TA,E,C,A */
04699 ,{ 490, -40, 250, 70, 490} /* GT,TA,E,C,C */
04700 ,{ 490, -40, 250, 70, 490} /* GT,TA,E,C,G */
04701 ,{ 490, -40, 250, 70, 490} /* GT,TA,E,C,T */
04702 }
04703 ,{{ 300, -230, 60, -120, 300} /* GT,TA,E,G,E */
04704 ,{ 300, -230, 60, -120, 300} /* GT,TA,E,G,A */
04705 ,{ 300, -230, 60, -120, 300} /* GT,TA,E,G,C */
04706 ,{ 300, -230, 60, -120, 300} /* GT,TA,E,G,G */
04707 ,{ 300, -230, 60, -120, 300} /* GT,TA,E,G,T */
04708 }
04709 ,{{ -350, -880, -590, -770, -350} /* GT,TA,E,T,E */
04710 ,{ -350, -880, -590, -770, -350} /* GT,TA,E,T,A */
04711 ,{ -350, -880, -590, -770, -350} /* GT,TA,E,T,C */
04712 ,{ -350, -880, -590, -770, -350} /* GT,TA,E,T,G */
04713 ,{ -350, -880, -590, -770, -350} /* GT,TA,E,T,T */
04714 }
04715 }
04716 ,{{{ 490, -40, 250, 70, 490} /* GT,TA,A,E,E */
04717 ,{ 490, -40, 250, 70, 490} /* GT,TA,A,E,A */
04718 ,{ 490, -40, 250, 70, 490} /* GT,TA,A,E,C */
04719 ,{ 490, -40, 250, 70, 490} /* GT,TA,A,E,G */
04720 ,{ 490, -40, 250, 70, 490} /* GT,TA,A,E,T */
04721 }
04722 ,{{ 460, -70, 220, 40, 460} /* GT,TA,A,A,E */
04723 ,{ 460, -70, 220, 40, 460} /* GT,TA,A,A,A */
04724 ,{ 460, -70, 220, 40, 460} /* GT,TA,A,A,C */
04725 ,{ 460, -70, 220, 40, 460} /* GT,TA,A,A,G */
04726 ,{ 460, -70, 220, 40, 460} /* GT,TA,A,A,T */
04727 }
04728 ,{{ 490, -40, 250, 70, 490} /* GT,TA,A,C,E */
04729 ,{ 490, -40, 250, 70, 490} /* GT,TA,A,C,A */
04730 ,{ 490, -40, 250, 70, 490} /* GT,TA,A,C,C */
04731 ,{ 490, -40, 250, 70, 490} /* GT,TA,A,C,G */
04732 ,{ 490, -40, 250, 70, 490} /* GT,TA,A,C,T */
04733 }
04734 ,{{ 300, -230, 60, -120, 300} /* GT,TA,A,G,E */
04735 ,{ 300, -230, 60, -120, 300} /* GT,TA,A,G,A */
04736 ,{ 300, -230, 60, -120, 300} /* GT,TA,A,G,C */
04737 ,{ 300, -230, 60, -120, 300} /* GT,TA,A,G,G */
04738 ,{ 300, -230, 60, -120, 300} /* GT,TA,A,G,T */
04739 }
04740 ,{{ -350, -880, -590, -770, -350} /* GT,TA,A,T,E */
04741 ,{ -350, -880, -590, -770, -350} /* GT,TA,A,T,A */
04742 ,{ -350, -880, -590, -770, -350} /* GT,TA,A,T,C */
04743 ,{ -350, -880, -590, -770, -350} /* GT,TA,A,T,G */
04744 ,{ -350, -880, -590, -770, -350} /* GT,TA,A,T,T */
04745 }
04746 }
04747 ,{{{ 490, -40, 250, 70, 490} /* GT,TA,C,E,E */
04748 ,{ 490, -40, 250, 70, 490} /* GT,TA,C,E,A */
04749 ,{ 490, -40, 250, 70, 490} /* GT,TA,C,E,C */
04750 ,{ 490, -40, 250, 70, 490} /* GT,TA,C,E,G */
04751 ,{ 490, -40, 250, 70, 490} /* GT,TA,C,E,T */
04752 }
04753 ,{{ 460, -70, 220, 40, 460} /* GT,TA,C,A,E */
04754 ,{ 460, -70, 220, 40, 460} /* GT,TA,C,A,A */
04755 ,{ 460, -70, 220, 40, 460} /* GT,TA,C,A,C */
04756 ,{ 460, -70, 220, 40, 460} /* GT,TA,C,A,G */
04757 ,{ 460, -70, 220, 40, 460} /* GT,TA,C,A,T */
04758 }
04759 ,{{ 490, -40, 250, 70, 490} /* GT,TA,C,C,E */
04760 ,{ 490, -40, 250, 70, 490} /* GT,TA,C,C,A */
04761 ,{ 490, -40, 250, 70, 490} /* GT,TA,C,C,C */
04762 ,{ 490, -40, 250, 70, 490} /* GT,TA,C,C,G */
04763 ,{ 490, -40, 250, 70, 490} /* GT,TA,C,C,T */
04764 }
04765 ,{{ 300, -230, 60, -120, 300} /* GT,TA,C,G,E */
04766 ,{ 300, -230, 60, -120, 300} /* GT,TA,C,G,A */
04767 ,{ 300, -230, 60, -120, 300} /* GT,TA,C,G,C */
04768 ,{ 300, -230, 60, -120, 300} /* GT,TA,C,G,G */
04769 ,{ 300, -230, 60, -120, 300} /* GT,TA,C,G,T */
04770 }
04771 ,{{ -350, -880, -590, -770, -350} /* GT,TA,C,T,E */
04772 ,{ -350, -880, -590, -770, -350} /* GT,TA,C,T,A */
04773 ,{ -350, -880, -590, -770, -350} /* GT,TA,C,T,C */
04774 ,{ -350, -880, -590, -770, -350} /* GT,TA,C,T,G */
04775 ,{ -350, -880, -590, -770, -350} /* GT,TA,C,T,T */
04776 }
04777 }
04778 ,{{{ 490, -40, 250, 70, 490} /* GT,TA,G,E,E */
04779 ,{ 490, -40, 250, 70, 490} /* GT,TA,G,E,A */
04780 ,{ 490, -40, 250, 70, 490} /* GT,TA,G,E,C */
04781 ,{ 490, -40, 250, 70, 490} /* GT,TA,G,E,G */
04782 ,{ 490, -40, 250, 70, 490} /* GT,TA,G,E,T */
04783 }

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04784 ,{{ 460, -70, 220, 40, 460} /* GT,TA,G,A,E */
04785 ,{ 460, -70, 220, 40, 460} /* GT,TA,G,A,A */
04786 ,{ 460, -70, 220, 40, 460} /* GT,TA,G,A,C */
04787 ,{ 460, -70, 220, 40, 460} /* GT,TA,G,A,G */
04788 ,{ 460, -70, 220, 40, 460} /* GT,TA,G,A,T */
04789 }
04790 ,{{ 490, -40, 250, 70, 490} /* GT,TA,G,C,E */
04791 ,{ 490, -40, 250, 70, 490} /* GT,TA,G,C,A */
04792 ,{ 490, -40, 250, 70, 490} /* GT,TA,G,C,C */
04793 ,{ 490, -40, 250, 70, 490} /* GT,TA,G,C,G */
04794 ,{ 490, -40, 250, 70, 490} /* GT,TA,G,C,T */
04795 }
04796 ,{{ 300, -230, 60, -120, 300} /* GT,TA,G,G,E */
04797 ,{ 300, -230, 60, -120, 300} /* GT,TA,G,G,A */
04798 ,{ 300, -230, 60, -120, 300} /* GT,TA,G,G,C */
04799 ,{ 300, -230, 60, -120, 300} /* GT,TA,G,G,G */
04800 ,{ 300, -230, 60, -120, 300} /* GT,TA,G,G,T */
04801 }
04802 ,{{ -350, -880, -590, -770, -350} /* GT,TA,G,T,E */
04803 ,{ -350, -880, -590, -770, -350} /* GT,TA,G,T,A */
04804 ,{ -350, -880, -590, -770, -350} /* GT,TA,G,T,C */
04805 ,{ -350, -880, -590, -770, -350} /* GT,TA,G,T,G */
04806 ,{ -350, -880, -590, -770, -350} /* GT,TA,G,T,T */
04807 }
04808 }
04809 ,{{{ 490, -40, 250, 70, 490} /* GT,TA,T,E,E */
04810 ,{ 490, -40, 250, 70, 490} /* GT,TA,T,E,A */
04811 ,{ 490, -40, 250, 70, 490} /* GT,TA,T,E,C */
04812 ,{ 490, -40, 250, 70, 490} /* GT,TA,T,E,G */
04813 ,{ 490, -40, 250, 70, 490} /* GT,TA,T,E,T */
04814 }
04815 ,{{ 460, -70, 220, 40, 460} /* GT,TA,T,A,E */
04816 ,{ 460, -70, 220, 40, 460} /* GT,TA,T,A,A */
04817 ,{ 460, -70, 220, 40, 460} /* GT,TA,T,A,C */
04818 ,{ 460, -70, 220, 40, 460} /* GT,TA,T,A,G */
04819 ,{ 460, -70, 220, 40, 460} /* GT,TA,T,A,T */
04820 }
04821 ,{{ 490, -40, 250, 70, 490} /* GT,TA,T,C,E */
04822 ,{ 490, -40, 250, 70, 490} /* GT,TA,T,C,A */
04823 ,{ 490, -40, 250, 70, 490} /* GT,TA,T,C,C */
04824 ,{ 490, -40, 250, 70, 490} /* GT,TA,T,C,G */
04825 ,{ 490, -40, 250, 70, 490} /* GT,TA,T,C,T */
04826 }
04827 ,{{ 300, -230, 60, -120, 300} /* GT,TA,T,G,E */
04828 ,{ 300, -230, 60, -120, 300} /* GT,TA,T,G,A */
04829 ,{ 300, -230, 60, -120, 300} /* GT,TA,T,G,C */
04830 ,{ 300, -230, 60, -120, 300} /* GT,TA,T,G,G */
04831 ,{ 300, -230, 60, -120, 300} /* GT,TA,T,G,T */
04832 }
04833 ,{{ -350, -880, -590, -770, -350} /* GT,TA,T,T,E */
04834 ,{ -350, -880, -590, -770, -350} /* GT,TA,T,T,A */
04835 ,{ -350, -880, -590, -770, -350} /* GT,TA,T,T,C */
04836 ,{ -350, -880, -590, -770, -350} /* GT,TA,T,T,G */
04837 ,{ -350, -880, -590, -770, -350} /* GT,TA,T,T,T */
04838 }
04839 }
04840 }
04841 ,{{{ 750, 220, 510, 330, 750} /* GT,NN,E,E,E */
04842 ,{ 750, 220, 510, 330, 750} /* GT,NN,E,E,A */
04843 ,{ 750, 220, 510, 330, 750} /* GT,NN,E,E,C */
04844 ,{ 750, 220, 510, 330, 750} /* GT,NN,E,E,G */
04845 ,{ 750, 220, 510, 330, 750} /* GT,NN,E,E,T */
04846 }
04847 ,{{ 630, 100, 390, 210, 630} /* GT,NN,E,A,E */
04848 ,{ 630, 100, 390, 210, 630} /* GT,NN,E,A,A */
04849 ,{ 630, 100, 390, 210, 630} /* GT,NN,E,A,C */
04850 ,{ 630, 100, 390, 210, 630} /* GT,NN,E,A,G */
04851 ,{ 630, 100, 390, 210, 630} /* GT,NN,E,A,T */
04852 }
04853 ,{{ 750, 220, 510, 330, 750} /* GT,NN,E,C,E */
04854 ,{ 750, 220, 510, 330, 750} /* GT,NN,E,C,A */
04855 ,{ 750, 220, 510, 330, 750} /* GT,NN,E,C,C */
04856 ,{ 750, 220, 510, 330, 750} /* GT,NN,E,C,G */
04857 ,{ 750, 220, 510, 330, 750} /* GT,NN,E,C,T */
04858 }
04859 ,{{ 700, 170, 460, 280, 700} /* GT,NN,E,G,E */
04860 ,{ 700, 170, 460, 280, 700} /* GT,NN,E,G,A */
04861 ,{ 700, 170, 460, 280, 700} /* GT,NN,E,G,C */
04862 ,{ 700, 170, 460, 280, 700} /* GT,NN,E,G,G */
04863 ,{ 700, 170, 460, 280, 700} /* GT,NN,E,G,T */
04864 }
04865 ,{{ 660, 130, 420, 240, 660} /* GT,NN,E,T,E */
04866 ,{ 660, 130, 420, 240, 660} /* GT,NN,E,T,A */
04867 ,{ 660, 130, 420, 240, 660} /* GT,NN,E,T,C */
04868 ,{ 660, 130, 420, 240, 660} /* GT,NN,E,T,G */
04869 ,{ 660, 130, 420, 240, 660} /* GT,NN,E,T,T */
04870 }
```

```

04871      }
04872      ,{{{      750,      220,      510,      330,      750} /* GT,NN,A,E,E */
04873      ,{      750,      220,      510,      330,      750} /* GT,NN,A,E,A */
04874      ,{      750,      220,      510,      330,      750} /* GT,NN,A,E,C */
04875      ,{      750,      220,      510,      330,      750} /* GT,NN,A,E,G */
04876      ,{      750,      220,      510,      330,      750} /* GT,NN,A,E,T */
04877      }
04878      ,{{{      630,      100,      390,      210,      630} /* GT,NN,A,A,E */
04879      ,{      630,      100,      390,      210,      630} /* GT,NN,A,A,A */
04880      ,{      630,      100,      390,      210,      630} /* GT,NN,A,A,C */
04881      ,{      630,      100,      390,      210,      630} /* GT,NN,A,A,G */
04882      ,{      630,      100,      390,      210,      630} /* GT,NN,A,A,T */
04883      }
04884      ,{{{      750,      220,      510,      330,      750} /* GT,NN,A,C,E */
04885      ,{      750,      220,      510,      330,      750} /* GT,NN,A,C,A */
04886      ,{      750,      220,      510,      330,      750} /* GT,NN,A,C,C */
04887      ,{      750,      220,      510,      330,      750} /* GT,NN,A,C,G */
04888      ,{      750,      220,      510,      330,      750} /* GT,NN,A,C,T */
04889      }
04890      ,{{{      700,      170,      460,      280,      700} /* GT,NN,A,G,E */
04891      ,{      700,      170,      460,      280,      700} /* GT,NN,A,G,A */
04892      ,{      700,      170,      460,      280,      700} /* GT,NN,A,G,C */
04893      ,{      700,      170,      460,      280,      700} /* GT,NN,A,G,G */
04894      ,{      700,      170,      460,      280,      700} /* GT,NN,A,G,T */
04895      }
04896      ,{{{      660,      130,      420,      240,      660} /* GT,NN,A,T,E */
04897      ,{      660,      130,      420,      240,      660} /* GT,NN,A,T,A */
04898      ,{      660,      130,      420,      240,      660} /* GT,NN,A,T,C */
04899      ,{      660,      130,      420,      240,      660} /* GT,NN,A,T,G */
04900      ,{      660,      130,      420,      240,      660} /* GT,NN,A,T,T */
04901      }
04902      }
04903      ,{{{      750,      220,      510,      330,      750} /* GT,NN,C,E,E */
04904      ,{      750,      220,      510,      330,      750} /* GT,NN,C,E,A */
04905      ,{      750,      220,      510,      330,      750} /* GT,NN,C,E,C */
04906      ,{      750,      220,      510,      330,      750} /* GT,NN,C,E,G */
04907      ,{      750,      220,      510,      330,      750} /* GT,NN,C,E,T */
04908      }
04909      ,{{{      630,      100,      390,      210,      630} /* GT,NN,C,A,E */
04910      ,{      630,      100,      390,      210,      630} /* GT,NN,C,A,A */
04911      ,{      630,      100,      390,      210,      630} /* GT,NN,C,A,C */
04912      ,{      630,      100,      390,      210,      630} /* GT,NN,C,A,G */
04913      ,{      630,      100,      390,      210,      630} /* GT,NN,C,A,T */
04914      }
04915      ,{{{      750,      220,      510,      330,      750} /* GT,NN,C,C,E */
04916      ,{      750,      220,      510,      330,      750} /* GT,NN,C,C,A */
04917      ,{      750,      220,      510,      330,      750} /* GT,NN,C,C,C */
04918      ,{      750,      220,      510,      330,      750} /* GT,NN,C,C,G */
04919      ,{      750,      220,      510,      330,      750} /* GT,NN,C,C,T */
04920      }
04921      ,{{{      700,      170,      460,      280,      700} /* GT,NN,C,G,E */
04922      ,{      700,      170,      460,      280,      700} /* GT,NN,C,G,A */
04923      ,{      700,      170,      460,      280,      700} /* GT,NN,C,G,C */
04924      ,{      700,      170,      460,      280,      700} /* GT,NN,C,G,G */
04925      ,{      700,      170,      460,      280,      700} /* GT,NN,C,G,T */
04926      }
04927      ,{{{      660,      130,      420,      240,      660} /* GT,NN,C,T,E */
04928      ,{      660,      130,      420,      240,      660} /* GT,NN,C,T,A */
04929      ,{      660,      130,      420,      240,      660} /* GT,NN,C,T,C */
04930      ,{      660,      130,      420,      240,      660} /* GT,NN,C,T,G */
04931      ,{      660,      130,      420,      240,      660} /* GT,NN,C,T,T */
04932      }
04933      }
04934      ,{{{      750,      220,      510,      330,      750} /* GT,NN,G,E,E */
04935      ,{      750,      220,      510,      330,      750} /* GT,NN,G,E,A */
04936      ,{      750,      220,      510,      330,      750} /* GT,NN,G,E,C */
04937      ,{      750,      220,      510,      330,      750} /* GT,NN,G,E,G */
04938      ,{      750,      220,      510,      330,      750} /* GT,NN,G,E,T */
04939      }
04940      ,{{{      630,      100,      390,      210,      630} /* GT,NN,G,A,E */
04941      ,{      630,      100,      390,      210,      630} /* GT,NN,G,A,A */
04942      ,{      630,      100,      390,      210,      630} /* GT,NN,G,A,C */
04943      ,{      630,      100,      390,      210,      630} /* GT,NN,G,A,G */
04944      ,{      630,      100,      390,      210,      630} /* GT,NN,G,A,T */
04945      }
04946      ,{{{      750,      220,      510,      330,      750} /* GT,NN,G,C,E */
04947      ,{      750,      220,      510,      330,      750} /* GT,NN,G,C,A */
04948      ,{      750,      220,      510,      330,      750} /* GT,NN,G,C,C */
04949      ,{      750,      220,      510,      330,      750} /* GT,NN,G,C,G */
04950      ,{      750,      220,      510,      330,      750} /* GT,NN,G,C,T */
04951      }
04952      ,{{{      700,      170,      460,      280,      700} /* GT,NN,G,G,E */
04953      ,{      700,      170,      460,      280,      700} /* GT,NN,G,G,A */
04954      ,{      700,      170,      460,      280,      700} /* GT,NN,G,G,C */
04955      ,{      700,      170,      460,      280,      700} /* GT,NN,G,G,G */
04956      ,{      700,      170,      460,      280,      700} /* GT,NN,G,G,T */
04957      }

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```

04958 ,{{ 660, 130, 420, 240, 660} /* GT,NN,G,T,E */
04959 ,{ 660, 130, 420, 240, 660} /* GT,NN,G,T,A */
04960 ,{ 660, 130, 420, 240, 660} /* GT,NN,G,T,C */
04961 ,{ 660, 130, 420, 240, 660} /* GT,NN,G,T,G */
04962 ,{ 660, 130, 420, 240, 660} /* GT,NN,G,T,T */
04963 }
04964 }
04965 ,{{{ 750, 220, 510, 330, 750} /* GT,NN,T,E,E */
04966 ,{ 750, 220, 510, 330, 750} /* GT,NN,T,E,A */
04967 ,{ 750, 220, 510, 330, 750} /* GT,NN,T,E,C */
04968 ,{ 750, 220, 510, 330, 750} /* GT,NN,T,E,G */
04969 ,{ 750, 220, 510, 330, 750} /* GT,NN,T,E,T */
04970 }
04971 ,{{ 630, 100, 390, 210, 630} /* GT,NN,T,A,E */
04972 ,{ 630, 100, 390, 210, 630} /* GT,NN,T,A,A */
04973 ,{ 630, 100, 390, 210, 630} /* GT,NN,T,A,C */
04974 ,{ 630, 100, 390, 210, 630} /* GT,NN,T,A,G */
04975 ,{ 630, 100, 390, 210, 630} /* GT,NN,T,A,T */
04976 }
04977 ,{{ 750, 220, 510, 330, 750} /* GT,NN,T,C,E */
04978 ,{ 750, 220, 510, 330, 750} /* GT,NN,T,C,A */
04979 ,{ 750, 220, 510, 330, 750} /* GT,NN,T,C,C */
04980 ,{ 750, 220, 510, 330, 750} /* GT,NN,T,C,G */
04981 ,{ 750, 220, 510, 330, 750} /* GT,NN,T,C,T */
04982 }
04983 ,{{ 700, 170, 460, 280, 700} /* GT,NN,T,G,E */
04984 ,{ 700, 170, 460, 280, 700} /* GT,NN,T,G,A */
04985 ,{ 700, 170, 460, 280, 700} /* GT,NN,T,G,C */
04986 ,{ 700, 170, 460, 280, 700} /* GT,NN,T,G,G */
04987 ,{ 700, 170, 460, 280, 700} /* GT,NN,T,G,T */
04988 }
04989 ,{{ 660, 130, 420, 240, 660} /* GT,NN,T,T,E */
04990 ,{ 660, 130, 420, 240, 660} /* GT,NN,T,T,A */
04991 ,{ 660, 130, 420, 240, 660} /* GT,NN,T,T,C */
04992 ,{ 660, 130, 420, 240, 660} /* GT,NN,T,T,G */
04993 ,{ 660, 130, 420, 240, 660} /* GT,NN,T,T,T */
04994 }
04995 }
04996 }
04997 }
04998 ,{{{ INF, INF, INF, INF, INF} /* TG,NP,E,E,E */
04999 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,E,A */
05000 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,E,C */
05001 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,E,G */
05002 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,E,T */
05003 }
05004 ,{{ INF, INF, INF, INF, INF} /* TG,NP,E,A,E */
05005 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,A,A */
05006 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,A,C */
05007 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,A,G */
05008 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,A,T */
05009 }
05010 ,{{ INF, INF, INF, INF, INF} /* TG,NP,E,C,E */
05011 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,C,A */
05012 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,C,C */
05013 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,C,G */
05014 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,C,T */
05015 }
05016 ,{{ INF, INF, INF, INF, INF} /* TG,NP,E,G,E */
05017 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,G,A */
05018 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,G,C */
05019 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,G,G */
05020 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,G,T */
05021 }
05022 ,{{ INF, INF, INF, INF, INF} /* TG,NP,E,T,E */
05023 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,T,A */
05024 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,T,C */
05025 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,T,G */
05026 ,{ INF, INF, INF, INF, INF} /* TG,NP,E,T,T */
05027 }
05028 }
05029 ,{{{ INF, INF, INF, INF, INF} /* TG,NP,A,E,E */
05030 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,E,A */
05031 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,E,C */
05032 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,E,G */
05033 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,E,T */
05034 }
05035 ,{{ INF, INF, INF, INF, INF} /* TG,NP,A,A,E */
05036 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,A,A */
05037 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,A,C */
05038 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,A,G */
05039 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,A,T */
05040 }
05041 ,{{ INF, INF, INF, INF, INF} /* TG,NP,A,C,E */
05042 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,C,A */
05043 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,C,C */
05044 ,{ INF, INF, INF, INF, INF} /* TG,NP,A,C,G */

```

```

05045      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,C,T */
05046      }
05047      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,G,E */
05048      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,G,A */
05049      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,G,C */
05050      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,G,G */
05051      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,G,T */
05052      }
05053      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,T,E */
05054      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,T,A */
05055      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,T,C */
05056      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,T,G */
05057      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,A,T,T */
05058      }
05059      }
05060      , {{{      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,E,E */
05061      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,E,A */
05062      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,E,C */
05063      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,E,G */
05064      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,E,T */
05065      }
05066      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,A,E */
05067      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,A,A */
05068      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,A,C */
05069      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,A,G */
05070      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,A,T */
05071      }
05072      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,C,E */
05073      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,C,A */
05074      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,C,C */
05075      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,C,G */
05076      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,C,T */
05077      }
05078      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,G,E */
05079      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,G,A */
05080      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,G,C */
05081      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,G,G */
05082      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,G,T */
05083      }
05084      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,T,E */
05085      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,T,A */
05086      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,T,C */
05087      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,T,G */
05088      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,C,T,T */
05089      }
05090      }
05091      , {{{      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,E,E */
05092      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,E,A */
05093      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,E,C */
05094      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,E,G */
05095      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,E,T */
05096      }
05097      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,A,E */
05098      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,A,A */
05099      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,A,C */
05100      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,A,G */
05101      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,A,T */
05102      }
05103      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,C,E */
05104      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,C,A */
05105      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,C,C */
05106      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,C,G */
05107      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,C,T */
05108      }
05109      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,G,E */
05110      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,G,A */
05111      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,G,C */
05112      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,G,G */
05113      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,G,T */
05114      }
05115      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,T,E */
05116      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,T,A */
05117      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,T,C */
05118      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,T,G */
05119      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,G,T,T */
05120      }
05121      }
05122      , {{{      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,E,E */
05123      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,E,A */
05124      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,E,C */
05125      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,E,G */
05126      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,E,T */
05127      }
05128      , {{      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,A,E */
05129      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,A,A */
05130      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,A,C */
05131      , {      INF,      INF,      INF,      INF,      INF} /* TG,NP,T,A,G */

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05132 , { INF, INF, INF, INF, INF} /* TG,NP,T,A,T */
05133 }
05134 , {{ INF, INF, INF, INF, INF} /* TG,NP,T,C,E */
05135 , { INF, INF, INF, INF, INF} /* TG,NP,T,C,A */
05136 , { INF, INF, INF, INF, INF} /* TG,NP,T,C,C */
05137 , { INF, INF, INF, INF, INF} /* TG,NP,T,C,G */
05138 , { INF, INF, INF, INF, INF} /* TG,NP,T,C,T */
05139 }
05140 , {{ INF, INF, INF, INF, INF} /* TG,NP,T,G,E */
05141 , { INF, INF, INF, INF, INF} /* TG,NP,T,G,A */
05142 , { INF, INF, INF, INF, INF} /* TG,NP,T,G,C */
05143 , { INF, INF, INF, INF, INF} /* TG,NP,T,G,G */
05144 , { INF, INF, INF, INF, INF} /* TG,NP,T,G,T */
05145 }
05146 , {{ INF, INF, INF, INF, INF} /* TG,NP,T,T,E */
05147 , { INF, INF, INF, INF, INF} /* TG,NP,T,T,A */
05148 , { INF, INF, INF, INF, INF} /* TG,NP,T,T,C */
05149 , { INF, INF, INF, INF, INF} /* TG,NP,T,T,G */
05150 , { INF, INF, INF, INF, INF} /* TG,NP,T,T,T */
05151 }
05152 }
05153 }
05154 , {{{ -160, -190, -160, -350, -1000} /* TG,CG,E,E,E */
05155 , { -160, -190, -160, -350, -1000} /* TG,CG,E,E,A */
05156 , { -160, -190, -160, -350, -1000} /* TG,CG,E,E,C */
05157 , { -160, -190, -160, -350, -1000} /* TG,CG,E,E,G */
05158 , { -160, -190, -160, -350, -1000} /* TG,CG,E,E,T */
05159 }
05160 , {{ -200, -230, -200, -390, -1040} /* TG,CG,E,A,E */
05161 , { -200, -230, -200, -390, -1040} /* TG,CG,E,A,A */
05162 , { -200, -230, -200, -390, -1040} /* TG,CG,E,A,C */
05163 , { -200, -230, -200, -390, -1040} /* TG,CG,E,A,G */
05164 , { -200, -230, -200, -390, -1040} /* TG,CG,E,A,T */
05165 }
05166 , {{ -160, -190, -160, -350, -1000} /* TG,CG,E,C,E */
05167 , { -160, -190, -160, -350, -1000} /* TG,CG,E,C,A */
05168 , { -160, -190, -160, -350, -1000} /* TG,CG,E,C,C */
05169 , { -160, -190, -160, -350, -1000} /* TG,CG,E,C,G */
05170 , { -160, -190, -160, -350, -1000} /* TG,CG,E,C,T */
05171 }
05172 , {{ -210, -240, -210, -400, -1050} /* TG,CG,E,G,E */
05173 , { -210, -240, -210, -400, -1050} /* TG,CG,E,G,A */
05174 , { -210, -240, -210, -400, -1050} /* TG,CG,E,G,C */
05175 , { -210, -240, -210, -400, -1050} /* TG,CG,E,G,G */
05176 , { -210, -240, -210, -400, -1050} /* TG,CG,E,G,T */
05177 }
05178 , {{ -240, -270, -240, -430, -1080} /* TG,CG,E,T,E */
05179 , { -240, -270, -240, -430, -1080} /* TG,CG,E,T,A */
05180 , { -240, -270, -240, -430, -1080} /* TG,CG,E,T,C */
05181 , { -240, -270, -240, -430, -1080} /* TG,CG,E,T,G */
05182 , { -240, -270, -240, -430, -1080} /* TG,CG,E,T,T */
05183 }
05184 }
05185 , {{{ -160, -190, -160, -350, -1000} /* TG,CG,A,E,E */
05186 , { -160, -190, -160, -350, -1000} /* TG,CG,A,E,A */
05187 , { -160, -190, -160, -350, -1000} /* TG,CG,A,E,C */
05188 , { -160, -190, -160, -350, -1000} /* TG,CG,A,E,G */
05189 , { -160, -190, -160, -350, -1000} /* TG,CG,A,E,T */
05190 }
05191 , {{ -200, -230, -200, -390, -1040} /* TG,CG,A,A,E */
05192 , { -200, -230, -200, -390, -1040} /* TG,CG,A,A,A */
05193 , { -200, -230, -200, -390, -1040} /* TG,CG,A,A,C */
05194 , { -200, -230, -200, -390, -1040} /* TG,CG,A,A,G */
05195 , { -200, -230, -200, -390, -1040} /* TG,CG,A,A,T */
05196 }
05197 , {{ -160, -190, -160, -350, -1000} /* TG,CG,A,C,E */
05198 , { -160, -190, -160, -350, -1000} /* TG,CG,A,C,A */
05199 , { -160, -190, -160, -350, -1000} /* TG,CG,A,C,C */
05200 , { -160, -190, -160, -350, -1000} /* TG,CG,A,C,G */
05201 , { -160, -190, -160, -350, -1000} /* TG,CG,A,C,T */
05202 }
05203 , {{ -210, -240, -210, -400, -1050} /* TG,CG,A,G,E */
05204 , { -210, -240, -210, -400, -1050} /* TG,CG,A,G,A */
05205 , { -210, -240, -210, -400, -1050} /* TG,CG,A,G,C */
05206 , { -210, -240, -210, -400, -1050} /* TG,CG,A,G,G */
05207 , { -210, -240, -210, -400, -1050} /* TG,CG,A,G,T */
05208 }
05209 , {{ -240, -270, -240, -430, -1080} /* TG,CG,A,T,E */
05210 , { -240, -270, -240, -430, -1080} /* TG,CG,A,T,A */
05211 , { -240, -270, -240, -430, -1080} /* TG,CG,A,T,C */
05212 , { -240, -270, -240, -430, -1080} /* TG,CG,A,T,G */
05213 , { -240, -270, -240, -430, -1080} /* TG,CG,A,T,T */
05214 }
05215 }
05216 , {{{ -160, -190, -160, -350, -1000} /* TG,CG,C,E,E */
05217 , { -160, -190, -160, -350, -1000} /* TG,CG,C,E,A */
05218 , { -160, -190, -160, -350, -1000} /* TG,CG,C,E,C */
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05219 , { -160, -190, -160, -350, -1000} /* TG,CG,C,E,G */
05220 , { -160, -190, -160, -350, -1000} /* TG,CG,C,E,T */
05221 }
05222 , { { -200, -230, -200, -390, -1040} /* TG,CG,C,A,E */
05223 , { -200, -230, -200, -390, -1040} /* TG,CG,C,A,A */
05224 , { -200, -230, -200, -390, -1040} /* TG,CG,C,A,C */
05225 , { -200, -230, -200, -390, -1040} /* TG,CG,C,A,G */
05226 , { -200, -230, -200, -390, -1040} /* TG,CG,C,A,T */
05227 }
05228 , { { -160, -190, -160, -350, -1000} /* TG,CG,C,C,E */
05229 , { -160, -190, -160, -350, -1000} /* TG,CG,C,C,A */
05230 , { -160, -190, -160, -350, -1000} /* TG,CG,C,C,C */
05231 , { -160, -190, -160, -350, -1000} /* TG,CG,C,C,G */
05232 , { -160, -190, -160, -350, -1000} /* TG,CG,C,C,T */
05233 }
05234 , { { -210, -240, -210, -400, -1050} /* TG,CG,C,G,E */
05235 , { -210, -240, -210, -400, -1050} /* TG,CG,C,G,A */
05236 , { -210, -240, -210, -400, -1050} /* TG,CG,C,G,C */
05237 , { -210, -240, -210, -400, -1050} /* TG,CG,C,G,G */
05238 , { -210, -240, -210, -400, -1050} /* TG,CG,C,G,T */
05239 }
05240 , { { -240, -270, -240, -430, -1080} /* TG,CG,C,T,E */
05241 , { -240, -270, -240, -430, -1080} /* TG,CG,C,T,A */
05242 , { -240, -270, -240, -430, -1080} /* TG,CG,C,T,C */
05243 , { -240, -270, -240, -430, -1080} /* TG,CG,C,T,G */
05244 , { -240, -270, -240, -430, -1080} /* TG,CG,C,T,T */
05245 }
05246 }
05247 , { { { -160, -190, -160, -350, -1000} /* TG,CG,G,E,E */
05248 , { -160, -190, -160, -350, -1000} /* TG,CG,G,E,A */
05249 , { -160, -190, -160, -350, -1000} /* TG,CG,G,E,C */
05250 , { -160, -190, -160, -350, -1000} /* TG,CG,G,E,G */
05251 , { -160, -190, -160, -350, -1000} /* TG,CG,G,E,T */
05252 }
05253 , { { -200, -230, -200, -390, -1040} /* TG,CG,G,A,E */
05254 , { -200, -230, -200, -390, -1040} /* TG,CG,G,A,A */
05255 , { -200, -230, -200, -390, -1040} /* TG,CG,G,A,C */
05256 , { -200, -230, -200, -390, -1040} /* TG,CG,G,A,G */
05257 , { -200, -230, -200, -390, -1040} /* TG,CG,G,A,T */
05258 }
05259 , { { -160, -190, -160, -350, -1000} /* TG,CG,G,C,E */
05260 , { -160, -190, -160, -350, -1000} /* TG,CG,G,C,A */
05261 , { -160, -190, -160, -350, -1000} /* TG,CG,G,C,C */
05262 , { -160, -190, -160, -350, -1000} /* TG,CG,G,C,G */
05263 , { -160, -190, -160, -350, -1000} /* TG,CG,G,C,T */
05264 }
05265 , { { -210, -240, -210, -400, -1050} /* TG,CG,G,G,E */
05266 , { -210, -240, -210, -400, -1050} /* TG,CG,G,G,A */
05267 , { -210, -240, -210, -400, -1050} /* TG,CG,G,G,C */
05268 , { -210, -240, -210, -400, -1050} /* TG,CG,G,G,G */
05269 , { -210, -240, -210, -400, -1050} /* TG,CG,G,G,T */
05270 }
05271 , { { -240, -270, -240, -430, -1080} /* TG,CG,G,T,E */
05272 , { -240, -270, -240, -430, -1080} /* TG,CG,G,T,A */
05273 , { -240, -270, -240, -430, -1080} /* TG,CG,G,T,C */
05274 , { -240, -270, -240, -430, -1080} /* TG,CG,G,T,G */
05275 , { -240, -270, -240, -430, -1080} /* TG,CG,G,T,T */
05276 }
05277 }
05278 , { { { -160, -190, -160, -350, -1000} /* TG,CG,T,E,E */
05279 , { -160, -190, -160, -350, -1000} /* TG,CG,T,E,A */
05280 , { -160, -190, -160, -350, -1000} /* TG,CG,T,E,C */
05281 , { -160, -190, -160, -350, -1000} /* TG,CG,T,E,G */
05282 , { -160, -190, -160, -350, -1000} /* TG,CG,T,E,T */
05283 }
05284 , { { -200, -230, -200, -390, -1040} /* TG,CG,T,A,E */
05285 , { -200, -230, -200, -390, -1040} /* TG,CG,T,A,A */
05286 , { -200, -230, -200, -390, -1040} /* TG,CG,T,A,C */
05287 , { -200, -230, -200, -390, -1040} /* TG,CG,T,A,G */
05288 , { -200, -230, -200, -390, -1040} /* TG,CG,T,A,T */
05289 }
05290 , { { -160, -190, -160, -350, -1000} /* TG,CG,T,C,E */
05291 , { -160, -190, -160, -350, -1000} /* TG,CG,T,C,A */
05292 , { -160, -190, -160, -350, -1000} /* TG,CG,T,C,C */
05293 , { -160, -190, -160, -350, -1000} /* TG,CG,T,C,G */
05294 , { -160, -190, -160, -350, -1000} /* TG,CG,T,C,T */
05295 }
05296 , { { -210, -240, -210, -400, -1050} /* TG,CG,T,G,E */
05297 , { -210, -240, -210, -400, -1050} /* TG,CG,T,G,A */
05298 , { -210, -240, -210, -400, -1050} /* TG,CG,T,G,C */
05299 , { -210, -240, -210, -400, -1050} /* TG,CG,T,G,G */
05300 , { -210, -240, -210, -400, -1050} /* TG,CG,T,G,T */
05301 }
05302 , { { -240, -270, -240, -430, -1080} /* TG,CG,T,T,E */
05303 , { -240, -270, -240, -430, -1080} /* TG,CG,T,T,A */
05304 , { -240, -270, -240, -430, -1080} /* TG,CG,T,T,C */
05305 , { -240, -270, -240, -430, -1080} /* TG,CG,T,T,G */

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05306      , { -240, -270, -240, -430, -1080} /* TG,CG,T,T,T */
05307      }
05308      }
05309      }
05310      , {{{ 170, 140, 170, -20, -670} /* TG,GC,E,E,E */
05311      , { 170, 140, 170, -20, -670} /* TG,GC,E,E,A */
05312      , { 170, 140, 170, -20, -670} /* TG,GC,E,E,C */
05313      , { 170, 140, 170, -20, -670} /* TG,GC,E,E,G */
05314      , { 170, 140, 170, -20, -670} /* TG,GC,E,E,T */
05315      }
05316      , {{ -360, -390, -360, -550, -1200} /* TG,GC,E,A,E */
05317      , { -360, -390, -360, -550, -1200} /* TG,GC,E,A,A */
05318      , { -360, -390, -360, -550, -1200} /* TG,GC,E,A,C */
05319      , { -360, -390, -360, -550, -1200} /* TG,GC,E,A,G */
05320      , { -360, -390, -360, -550, -1200} /* TG,GC,E,A,T */
05321      }
05322      , {{ -70, -100, -70, -260, -910} /* TG,GC,E,C,E */
05323      , { -70, -100, -70, -260, -910} /* TG,GC,E,C,A */
05324      , { -70, -100, -70, -260, -910} /* TG,GC,E,C,C */
05325      , { -70, -100, -70, -260, -910} /* TG,GC,E,C,G */
05326      , { -70, -100, -70, -260, -910} /* TG,GC,E,C,T */
05327      }
05328      , {{ -250, -280, -250, -440, -1090} /* TG,GC,E,G,E */
05329      , { -250, -280, -250, -440, -1090} /* TG,GC,E,G,A */
05330      , { -250, -280, -250, -440, -1090} /* TG,GC,E,G,C */
05331      , { -250, -280, -250, -440, -1090} /* TG,GC,E,G,G */
05332      , { -250, -280, -250, -440, -1090} /* TG,GC,E,G,T */
05333      }
05334      , {{{ 170, 140, 170, -20, -670} /* TG,GC,E,T,E */
05335      , { 170, 140, 170, -20, -670} /* TG,GC,E,T,A */
05336      , { 170, 140, 170, -20, -670} /* TG,GC,E,T,C */
05337      , { 170, 140, 170, -20, -670} /* TG,GC,E,T,G */
05338      , { 170, 140, 170, -20, -670} /* TG,GC,E,T,T */
05339      }
05340      }
05341      , {{{ 170, 140, 170, -20, -670} /* TG,GC,A,E,E */
05342      , { 170, 140, 170, -20, -670} /* TG,GC,A,E,A */
05343      , { 170, 140, 170, -20, -670} /* TG,GC,A,E,C */
05344      , { 170, 140, 170, -20, -670} /* TG,GC,A,E,G */
05345      , { 170, 140, 170, -20, -670} /* TG,GC,A,E,T */
05346      }
05347      , {{{ -360, -390, -360, -550, -1200} /* TG,GC,A,A,E */
05348      , { -360, -390, -360, -550, -1200} /* TG,GC,A,A,A */
05349      , { -360, -390, -360, -550, -1200} /* TG,GC,A,A,C */
05350      , { -360, -390, -360, -550, -1200} /* TG,GC,A,A,G */
05351      , { -360, -390, -360, -550, -1200} /* TG,GC,A,A,T */
05352      }
05353      , {{ -70, -100, -70, -260, -910} /* TG,GC,A,C,E */
05354      , { -70, -100, -70, -260, -910} /* TG,GC,A,C,A */
05355      , { -70, -100, -70, -260, -910} /* TG,GC,A,C,C */
05356      , { -70, -100, -70, -260, -910} /* TG,GC,A,C,G */
05357      , { -70, -100, -70, -260, -910} /* TG,GC,A,C,T */
05358      }
05359      , {{{ -250, -280, -250, -440, -1090} /* TG,GC,A,G,E */
05360      , { -250, -280, -250, -440, -1090} /* TG,GC,A,G,A */
05361      , { -250, -280, -250, -440, -1090} /* TG,GC,A,G,C */
05362      , { -250, -280, -250, -440, -1090} /* TG,GC,A,G,G */
05363      , { -250, -280, -250, -440, -1090} /* TG,GC,A,G,T */
05364      }
05365      , {{{ 170, 140, 170, -20, -670} /* TG,GC,A,T,E */
05366      , { 170, 140, 170, -20, -670} /* TG,GC,A,T,A */
05367      , { 170, 140, 170, -20, -670} /* TG,GC,A,T,C */
05368      , { 170, 140, 170, -20, -670} /* TG,GC,A,T,G */
05369      , { 170, 140, 170, -20, -670} /* TG,GC,A,T,T */
05370      }
05371      }
05372      , {{{ 170, 140, 170, -20, -670} /* TG,GC,C,E,E */
05373      , { 170, 140, 170, -20, -670} /* TG,GC,C,E,A */
05374      , { 170, 140, 170, -20, -670} /* TG,GC,C,E,C */
05375      , { 170, 140, 170, -20, -670} /* TG,GC,C,E,G */
05376      , { 170, 140, 170, -20, -670} /* TG,GC,C,E,T */
05377      }
05378      , {{ -360, -390, -360, -550, -1200} /* TG,GC,C,A,E */
05379      , { -360, -390, -360, -550, -1200} /* TG,GC,C,A,A */
05380      , { -360, -390, -360, -550, -1200} /* TG,GC,C,A,C */
05381      , { -360, -390, -360, -550, -1200} /* TG,GC,C,A,G */
05382      , { -360, -390, -360, -550, -1200} /* TG,GC,C,A,T */
05383      }
05384      , {{ -70, -100, -70, -260, -910} /* TG,GC,C,C,E */
05385      , { -70, -100, -70, -260, -910} /* TG,GC,C,C,A */
05386      , { -70, -100, -70, -260, -910} /* TG,GC,C,C,C */
05387      , { -70, -100, -70, -260, -910} /* TG,GC,C,C,G */
05388      , { -70, -100, -70, -260, -910} /* TG,GC,C,C,T */
05389      }
05390      , {{ -250, -280, -250, -440, -1090} /* TG,GC,C,G,E */
05391      , { -250, -280, -250, -440, -1090} /* TG,GC,C,G,A */
05392      , { -250, -280, -250, -440, -1090} /* TG,GC,C,G,C */

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05393      , { -250, -280, -250, -440, -1090} /* TG,GC,C,G,G */
05394      , { -250, -280, -250, -440, -1090} /* TG,GC,C,G,T */
05395      }
05396      , {{ 170, 140, 170, -20, -670} /* TG,GC,C,T,E */
05397      , { 170, 140, 170, -20, -670} /* TG,GC,C,T,A */
05398      , { 170, 140, 170, -20, -670} /* TG,GC,C,T,C */
05399      , { 170, 140, 170, -20, -670} /* TG,GC,C,T,G */
05400      , { 170, 140, 170, -20, -670} /* TG,GC,C,T,T */
05401      }
05402      }
05403      , {{ { 170, 140, 170, -20, -670} /* TG,GC,G,E,E */
05404      , { 170, 140, 170, -20, -670} /* TG,GC,G,E,A */
05405      , { 170, 140, 170, -20, -670} /* TG,GC,G,E,C */
05406      , { 170, 140, 170, -20, -670} /* TG,GC,G,E,G */
05407      , { 170, 140, 170, -20, -670} /* TG,GC,G,E,T */
05408      }
05409      , {{ { -360, -390, -360, -550, -1200} /* TG,GC,G,A,E */
05410      , { -360, -390, -360, -550, -1200} /* TG,GC,G,A,A */
05411      , { -360, -390, -360, -550, -1200} /* TG,GC,G,A,C */
05412      , { -360, -390, -360, -550, -1200} /* TG,GC,G,A,G */
05413      , { -360, -390, -360, -550, -1200} /* TG,GC,G,A,T */
05414      }
05415      , {{ { -70, -100, -70, -260, -910} /* TG,GC,G,C,E */
05416      , { -70, -100, -70, -260, -910} /* TG,GC,G,C,A */
05417      , { -70, -100, -70, -260, -910} /* TG,GC,G,C,C */
05418      , { -70, -100, -70, -260, -910} /* TG,GC,G,C,G */
05419      , { -70, -100, -70, -260, -910} /* TG,GC,G,C,T */
05420      }
05421      , {{ { -250, -280, -250, -440, -1090} /* TG,GC,G,G,E */
05422      , { -250, -280, -250, -440, -1090} /* TG,GC,G,G,A */
05423      , { -250, -280, -250, -440, -1090} /* TG,GC,G,G,C */
05424      , { -250, -280, -250, -440, -1090} /* TG,GC,G,G,G */
05425      , { -250, -280, -250, -440, -1090} /* TG,GC,G,G,T */
05426      }
05427      , {{ { 170, 140, 170, -20, -670} /* TG,GC,G,T,E */
05428      , { 170, 140, 170, -20, -670} /* TG,GC,G,T,A */
05429      , { 170, 140, 170, -20, -670} /* TG,GC,G,T,C */
05430      , { 170, 140, 170, -20, -670} /* TG,GC,G,T,G */
05431      , { 170, 140, 170, -20, -670} /* TG,GC,G,T,T */
05432      }
05433      }
05434      , {{ {{ { 170, 140, 170, -20, -670} /* TG,GC,T,E,E */
05435      , { 170, 140, 170, -20, -670} /* TG,GC,T,E,A */
05436      , { 170, 140, 170, -20, -670} /* TG,GC,T,E,C */
05437      , { 170, 140, 170, -20, -670} /* TG,GC,T,E,G */
05438      , { 170, 140, 170, -20, -670} /* TG,GC,T,E,T */
05439      }
05440      , {{ { -360, -390, -360, -550, -1200} /* TG,GC,T,A,E */
05441      , { -360, -390, -360, -550, -1200} /* TG,GC,T,A,A */
05442      , { -360, -390, -360, -550, -1200} /* TG,GC,T,A,C */
05443      , { -360, -390, -360, -550, -1200} /* TG,GC,T,A,G */
05444      , { -360, -390, -360, -550, -1200} /* TG,GC,T,A,T */
05445      }
05446      , {{ { -70, -100, -70, -260, -910} /* TG,GC,T,C,E */
05447      , { -70, -100, -70, -260, -910} /* TG,GC,T,C,A */
05448      , { -70, -100, -70, -260, -910} /* TG,GC,T,C,C */
05449      , { -70, -100, -70, -260, -910} /* TG,GC,T,C,G */
05450      , { -70, -100, -70, -260, -910} /* TG,GC,T,C,T */
05451      }
05452      , {{ { -250, -280, -250, -440, -1090} /* TG,GC,T,G,E */
05453      , { -250, -280, -250, -440, -1090} /* TG,GC,T,G,A */
05454      , { -250, -280, -250, -440, -1090} /* TG,GC,T,G,C */
05455      , { -250, -280, -250, -440, -1090} /* TG,GC,T,G,G */
05456      , { -250, -280, -250, -440, -1090} /* TG,GC,T,G,T */
05457      }
05458      , {{ { 170, 140, 170, -20, -670} /* TG,GC,T,T,E */
05459      , { 170, 140, 170, -20, -670} /* TG,GC,T,T,A */
05460      , { 170, 140, 170, -20, -670} /* TG,GC,T,T,C */
05461      , { 170, 140, 170, -20, -670} /* TG,GC,T,T,G */
05462      , { 170, 140, 170, -20, -670} /* TG,GC,T,T,T */
05463      }
05464      }
05465      }
05466      , {{ {{ { 490, 460, 490, 300, -350} /* TG,GT,E,E,E */
05467      , { 490, 460, 490, 300, -350} /* TG,GT,E,E,A */
05468      , { 490, 460, 490, 300, -350} /* TG,GT,E,E,C */
05469      , { 490, 460, 490, 300, -350} /* TG,GT,E,E,G */
05470      , { 490, 460, 490, 300, -350} /* TG,GT,E,E,T */
05471      }
05472      , {{ { -40, -70, -40, -230, -880} /* TG,GT,E,A,E */
05473      , { -40, -70, -40, -230, -880} /* TG,GT,E,A,A */
05474      , { -40, -70, -40, -230, -880} /* TG,GT,E,A,C */
05475      , { -40, -70, -40, -230, -880} /* TG,GT,E,A,G */
05476      , { -40, -70, -40, -230, -880} /* TG,GT,E,A,T */
05477      }
05478      , {{ { 250, 220, 250, 60, -590} /* TG,GT,E,C,E */
05479      , { 250, 220, 250, 60, -590} /* TG,GT,E,C,A */

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05480      , {      250,      220,      250,      60,      -590} /* TG,GT,E,C,C */
05481      , {      250,      220,      250,      60,      -590} /* TG,GT,E,C,G */
05482      , {      250,      220,      250,      60,      -590} /* TG,GT,E,C,T */
05483      }
05484      , { {      70,      40,      70,      -120,      -770} /* TG,GT,E,G,E */
05485      , {      70,      40,      70,      -120,      -770} /* TG,GT,E,G,A */
05486      , {      70,      40,      70,      -120,      -770} /* TG,GT,E,G,C */
05487      , {      70,      40,      70,      -120,      -770} /* TG,GT,E,G,G */
05488      , {      70,      40,      70,      -120,      -770} /* TG,GT,E,G,T */
05489      }
05490      , { {      490,      460,      490,      300,      -350} /* TG,GT,E,T,E */
05491      , {      490,      460,      490,      300,      -350} /* TG,GT,E,T,A */
05492      , {      490,      460,      490,      300,      -350} /* TG,GT,E,T,C */
05493      , {      490,      460,      490,      300,      -350} /* TG,GT,E,T,G */
05494      , {      490,      460,      490,      300,      -350} /* TG,GT,E,T,T */
05495      }
05496      }
05497      , { { {      490,      460,      490,      300,      -350} /* TG,GT,A,E,E */
05498      , {      490,      460,      490,      300,      -350} /* TG,GT,A,E,A */
05499      , {      490,      460,      490,      300,      -350} /* TG,GT,A,E,C */
05500      , {      490,      460,      490,      300,      -350} /* TG,GT,A,E,G */
05501      , {      490,      460,      490,      300,      -350} /* TG,GT,A,E,T */
05502      }
05503      , { {      -40,      -70,      -40,      -230,      -880} /* TG,GT,A,A,E */
05504      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,A,A,A */
05505      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,A,A,C */
05506      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,A,A,G */
05507      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,A,A,T */
05508      }
05509      , { {      250,      220,      250,      60,      -590} /* TG,GT,A,C,E */
05510      , {      250,      220,      250,      60,      -590} /* TG,GT,A,C,A */
05511      , {      250,      220,      250,      60,      -590} /* TG,GT,A,C,C */
05512      , {      250,      220,      250,      60,      -590} /* TG,GT,A,C,G */
05513      , {      250,      220,      250,      60,      -590} /* TG,GT,A,C,T */
05514      }
05515      , { {      70,      40,      70,      -120,      -770} /* TG,GT,A,G,E */
05516      , {      70,      40,      70,      -120,      -770} /* TG,GT,A,G,A */
05517      , {      70,      40,      70,      -120,      -770} /* TG,GT,A,G,C */
05518      , {      70,      40,      70,      -120,      -770} /* TG,GT,A,G,G */
05519      , {      70,      40,      70,      -120,      -770} /* TG,GT,A,G,T */
05520      }
05521      , { {      490,      460,      490,      300,      -350} /* TG,GT,A,T,E */
05522      , {      490,      460,      490,      300,      -350} /* TG,GT,A,T,A */
05523      , {      490,      460,      490,      300,      -350} /* TG,GT,A,T,C */
05524      , {      490,      460,      490,      300,      -350} /* TG,GT,A,T,G */
05525      , {      490,      460,      490,      300,      -350} /* TG,GT,A,T,T */
05526      }
05527      }
05528      , { { {      490,      460,      490,      300,      -350} /* TG,GT,C,E,E */
05529      , {      490,      460,      490,      300,      -350} /* TG,GT,C,E,A */
05530      , {      490,      460,      490,      300,      -350} /* TG,GT,C,E,C */
05531      , {      490,      460,      490,      300,      -350} /* TG,GT,C,E,G */
05532      , {      490,      460,      490,      300,      -350} /* TG,GT,C,E,T */
05533      }
05534      , { {      -40,      -70,      -40,      -230,      -880} /* TG,GT,C,A,E */
05535      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,C,A,A */
05536      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,C,A,C */
05537      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,C,A,G */
05538      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,C,A,T */
05539      }
05540      , { {      250,      220,      250,      60,      -590} /* TG,GT,C,C,E */
05541      , {      250,      220,      250,      60,      -590} /* TG,GT,C,C,A */
05542      , {      250,      220,      250,      60,      -590} /* TG,GT,C,C,C */
05543      , {      250,      220,      250,      60,      -590} /* TG,GT,C,C,G */
05544      , {      250,      220,      250,      60,      -590} /* TG,GT,C,C,T */
05545      }
05546      , { {      70,      40,      70,      -120,      -770} /* TG,GT,C,G,E */
05547      , {      70,      40,      70,      -120,      -770} /* TG,GT,C,G,A */
05548      , {      70,      40,      70,      -120,      -770} /* TG,GT,C,G,C */
05549      , {      70,      40,      70,      -120,      -770} /* TG,GT,C,G,G */
05550      , {      70,      40,      70,      -120,      -770} /* TG,GT,C,G,T */
05551      }
05552      , { {      490,      460,      490,      300,      -350} /* TG,GT,C,T,E */
05553      , {      490,      460,      490,      300,      -350} /* TG,GT,C,T,A */
05554      , {      490,      460,      490,      300,      -350} /* TG,GT,C,T,C */
05555      , {      490,      460,      490,      300,      -350} /* TG,GT,C,T,G */
05556      , {      490,      460,      490,      300,      -350} /* TG,GT,C,T,T */
05557      }
05558      }
05559      , { { {      490,      460,      490,      300,      -350} /* TG,GT,G,E,E */
05560      , {      490,      460,      490,      300,      -350} /* TG,GT,G,E,A */
05561      , {      490,      460,      490,      300,      -350} /* TG,GT,G,E,C */
05562      , {      490,      460,      490,      300,      -350} /* TG,GT,G,E,G */
05563      , {      490,      460,      490,      300,      -350} /* TG,GT,G,E,T */
05564      }
05565      , { {      -40,      -70,      -40,      -230,      -880} /* TG,GT,G,A,E */
05566      , {      -40,      -70,      -40,      -230,      -880} /* TG,GT,G,A,A */

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05567 , { -40, -70, -40, -230, -880} /* TG,GT,G,A,C */
05568 , { -40, -70, -40, -230, -880} /* TG,GT,G,A,G */
05569 , { -40, -70, -40, -230, -880} /* TG,GT,G,A,T */
05570 }
05571 , { { 250, 220, 250, 60, -590} /* TG,GT,G,C,E */
05572 , { 250, 220, 250, 60, -590} /* TG,GT,G,C,A */
05573 , { 250, 220, 250, 60, -590} /* TG,GT,G,C,C */
05574 , { 250, 220, 250, 60, -590} /* TG,GT,G,C,G */
05575 , { 250, 220, 250, 60, -590} /* TG,GT,G,C,T */
05576 }
05577 , { { 70, 40, 70, -120, -770} /* TG,GT,G,G,E */
05578 , { 70, 40, 70, -120, -770} /* TG,GT,G,G,A */
05579 , { 70, 40, 70, -120, -770} /* TG,GT,G,G,C */
05580 , { 70, 40, 70, -120, -770} /* TG,GT,G,G,G */
05581 , { 70, 40, 70, -120, -770} /* TG,GT,G,G,T */
05582 }
05583 , { { 490, 460, 490, 300, -350} /* TG,GT,G,T,E */
05584 , { 490, 460, 490, 300, -350} /* TG,GT,G,T,A */
05585 , { 490, 460, 490, 300, -350} /* TG,GT,G,T,C */
05586 , { 490, 460, 490, 300, -350} /* TG,GT,G,T,G */
05587 , { 490, 460, 490, 300, -350} /* TG,GT,G,T,T */
05588 }
05589 }
05590 , { { { 490, 460, 490, 300, -350} /* TG,GT,T,E,E */
05591 , { 490, 460, 490, 300, -350} /* TG,GT,T,E,A */
05592 , { 490, 460, 490, 300, -350} /* TG,GT,T,E,C */
05593 , { 490, 460, 490, 300, -350} /* TG,GT,T,E,G */
05594 , { 490, 460, 490, 300, -350} /* TG,GT,T,E,T */
05595 }
05596 , { { -40, -70, -40, -230, -880} /* TG,GT,T,A,E */
05597 , { -40, -70, -40, -230, -880} /* TG,GT,T,A,A */
05598 , { -40, -70, -40, -230, -880} /* TG,GT,T,A,C */
05599 , { -40, -70, -40, -230, -880} /* TG,GT,T,A,G */
05600 , { -40, -70, -40, -230, -880} /* TG,GT,T,A,T */
05601 }
05602 , { { 250, 220, 250, 60, -590} /* TG,GT,T,C,E */
05603 , { 250, 220, 250, 60, -590} /* TG,GT,T,C,A */
05604 , { 250, 220, 250, 60, -590} /* TG,GT,T,C,C */
05605 , { 250, 220, 250, 60, -590} /* TG,GT,T,C,G */
05606 , { 250, 220, 250, 60, -590} /* TG,GT,T,C,T */
05607 }
05608 , { { 70, 40, 70, -120, -770} /* TG,GT,T,G,E */
05609 , { 70, 40, 70, -120, -770} /* TG,GT,T,G,A */
05610 , { 70, 40, 70, -120, -770} /* TG,GT,T,G,C */
05611 , { 70, 40, 70, -120, -770} /* TG,GT,T,G,G */
05612 , { 70, 40, 70, -120, -770} /* TG,GT,T,G,T */
05613 }
05614 , { { 490, 460, 490, 300, -350} /* TG,GT,T,T,E */
05615 , { 490, 460, 490, 300, -350} /* TG,GT,T,T,A */
05616 , { 490, 460, 490, 300, -350} /* TG,GT,T,T,C */
05617 , { 490, 460, 490, 300, -350} /* TG,GT,T,T,G */
05618 , { 490, 460, 490, 300, -350} /* TG,GT,T,T,T */
05619 }
05620 }
05621 }
05622 , { { { 520, 490, 520, 330, -320} /* TG,TG,E,E,E */
05623 , { 520, 490, 520, 330, -320} /* TG,TG,E,E,A */
05624 , { 520, 490, 520, 330, -320} /* TG,TG,E,E,C */
05625 , { 520, 490, 520, 330, -320} /* TG,TG,E,E,G */
05626 , { 520, 490, 520, 330, -320} /* TG,TG,E,E,T */
05627 }
05628 , { { 490, 460, 490, 300, -350} /* TG,TG,E,A,E */
05629 , { 490, 460, 490, 300, -350} /* TG,TG,E,A,A */
05630 , { 490, 460, 490, 300, -350} /* TG,TG,E,A,C */
05631 , { 490, 460, 490, 300, -350} /* TG,TG,E,A,G */
05632 , { 490, 460, 490, 300, -350} /* TG,TG,E,A,T */
05633 }
05634 , { { 520, 490, 520, 330, -320} /* TG,TG,E,C,E */
05635 , { 520, 490, 520, 330, -320} /* TG,TG,E,C,A */
05636 , { 520, 490, 520, 330, -320} /* TG,TG,E,C,C */
05637 , { 520, 490, 520, 330, -320} /* TG,TG,E,C,G */
05638 , { 520, 490, 520, 330, -320} /* TG,TG,E,C,T */
05639 }
05640 , { { 330, 300, 330, 140, -510} /* TG,TG,E,G,E */
05641 , { 330, 300, 330, 140, -510} /* TG,TG,E,G,A */
05642 , { 330, 300, 330, 140, -510} /* TG,TG,E,G,C */
05643 , { 330, 300, 330, 140, -510} /* TG,TG,E,G,G */
05644 , { 330, 300, 330, 140, -510} /* TG,TG,E,G,T */
05645 }
05646 , { { -320, -350, -320, -510, -1160} /* TG,TG,E,T,E */
05647 , { -320, -350, -320, -510, -1160} /* TG,TG,E,T,A */
05648 , { -320, -350, -320, -510, -1160} /* TG,TG,E,T,C */
05649 , { -320, -350, -320, -510, -1160} /* TG,TG,E,T,G */
05650 , { -320, -350, -320, -510, -1160} /* TG,TG,E,T,T */
05651 }
05652 }
05653 , { { { 520, 490, 520, 330, -320} /* TG,TG,A,E,E */

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05654 , { 520, 490, 520, 330, -320} /* TG,TG,A,E,A */
05655 , { 520, 490, 520, 330, -320} /* TG,TG,A,E,C */
05656 , { 520, 490, 520, 330, -320} /* TG,TG,A,E,G */
05657 , { 520, 490, 520, 330, -320} /* TG,TG,A,E,T */
05658 }
05659 , { { 490, 460, 490, 300, -350} /* TG,TG,A,A,E */
05660 , { 490, 460, 490, 300, -350} /* TG,TG,A,A,A */
05661 , { 490, 460, 490, 300, -350} /* TG,TG,A,A,C */
05662 , { 490, 460, 490, 300, -350} /* TG,TG,A,A,G */
05663 , { 490, 460, 490, 300, -350} /* TG,TG,A,A,T */
05664 }
05665 , { { 520, 490, 520, 330, -320} /* TG,TG,A,C,E */
05666 , { 520, 490, 520, 330, -320} /* TG,TG,A,C,A */
05667 , { 520, 490, 520, 330, -320} /* TG,TG,A,C,C */
05668 , { 520, 490, 520, 330, -320} /* TG,TG,A,C,G */
05669 , { 520, 490, 520, 330, -320} /* TG,TG,A,C,T */
05670 }
05671 , { { 330, 300, 330, 140, -510} /* TG,TG,A,G,E */
05672 , { 330, 300, 330, 140, -510} /* TG,TG,A,G,A */
05673 , { 330, 300, 330, 140, -510} /* TG,TG,A,G,C */
05674 , { 330, 300, 330, 140, -510} /* TG,TG,A,G,G */
05675 , { 330, 300, 330, 140, -510} /* TG,TG,A,G,T */
05676 }
05677 , { { -320, -350, -320, -510, -1160} /* TG,TG,A,T,E */
05678 , { -320, -350, -320, -510, -1160} /* TG,TG,A,T,A */
05679 , { -320, -350, -320, -510, -1160} /* TG,TG,A,T,C */
05680 , { -320, -350, -320, -510, -1160} /* TG,TG,A,T,G */
05681 , { -320, -350, -320, -510, -1160} /* TG,TG,A,T,T */
05682 }
05683 }
05684 , { { { 520, 490, 520, 330, -320} /* TG,TG,C,E,E */
05685 , { 520, 490, 520, 330, -320} /* TG,TG,C,E,A */
05686 , { 520, 490, 520, 330, -320} /* TG,TG,C,E,C */
05687 , { 520, 490, 520, 330, -320} /* TG,TG,C,E,G */
05688 , { 520, 490, 520, 330, -320} /* TG,TG,C,E,T */
05689 }
05690 , { { 490, 460, 490, 300, -350} /* TG,TG,C,A,E */
05691 , { 490, 460, 490, 300, -350} /* TG,TG,C,A,A */
05692 , { 490, 460, 490, 300, -350} /* TG,TG,C,A,C */
05693 , { 490, 460, 490, 300, -350} /* TG,TG,C,A,G */
05694 , { 490, 460, 490, 300, -350} /* TG,TG,C,A,T */
05695 }
05696 , { { 520, 490, 520, 330, -320} /* TG,TG,C,C,E */
05697 , { 520, 490, 520, 330, -320} /* TG,TG,C,C,A */
05698 , { 520, 490, 520, 330, -320} /* TG,TG,C,C,C */
05699 , { 520, 490, 520, 330, -320} /* TG,TG,C,C,G */
05700 , { 520, 490, 520, 330, -320} /* TG,TG,C,C,T */
05701 }
05702 , { { 330, 300, 330, 140, -510} /* TG,TG,C,G,E */
05703 , { 330, 300, 330, 140, -510} /* TG,TG,C,G,A */
05704 , { 330, 300, 330, 140, -510} /* TG,TG,C,G,C */
05705 , { 330, 300, 330, 140, -510} /* TG,TG,C,G,G */
05706 , { 330, 300, 330, 140, -510} /* TG,TG,C,G,T */
05707 }
05708 , { { -320, -350, -320, -510, -1160} /* TG,TG,C,T,E */
05709 , { -320, -350, -320, -510, -1160} /* TG,TG,C,T,A */
05710 , { -320, -350, -320, -510, -1160} /* TG,TG,C,T,C */
05711 , { -320, -350, -320, -510, -1160} /* TG,TG,C,T,G */
05712 , { -320, -350, -320, -510, -1160} /* TG,TG,C,T,T */
05713 }
05714 }
05715 , { { { 520, 490, 520, 330, -320} /* TG,TG,G,E,E */
05716 , { 520, 490, 520, 330, -320} /* TG,TG,G,E,A */
05717 , { 520, 490, 520, 330, -320} /* TG,TG,G,E,C */
05718 , { 520, 490, 520, 330, -320} /* TG,TG,G,E,G */
05719 , { 520, 490, 520, 330, -320} /* TG,TG,G,E,T */
05720 }
05721 , { { 490, 460, 490, 300, -350} /* TG,TG,G,A,E */
05722 , { 490, 460, 490, 300, -350} /* TG,TG,G,A,A */
05723 , { 490, 460, 490, 300, -350} /* TG,TG,G,A,C */
05724 , { 490, 460, 490, 300, -350} /* TG,TG,G,A,G */
05725 , { 490, 460, 490, 300, -350} /* TG,TG,G,A,T */
05726 }
05727 , { { 520, 490, 520, 330, -320} /* TG,TG,G,C,E */
05728 , { 520, 490, 520, 330, -320} /* TG,TG,G,C,A */
05729 , { 520, 490, 520, 330, -320} /* TG,TG,G,C,C */
05730 , { 520, 490, 520, 330, -320} /* TG,TG,G,C,G */
05731 , { 520, 490, 520, 330, -320} /* TG,TG,G,C,T */
05732 }
05733 , { { 330, 300, 330, 140, -510} /* TG,TG,G,G,E */
05734 , { 330, 300, 330, 140, -510} /* TG,TG,G,G,A */
05735 , { 330, 300, 330, 140, -510} /* TG,TG,G,G,C */
05736 , { 330, 300, 330, 140, -510} /* TG,TG,G,G,G */
05737 , { 330, 300, 330, 140, -510} /* TG,TG,G,G,T */
05738 }
05739 , { { -320, -350, -320, -510, -1160} /* TG,TG,G,T,E */
05740 , { -320, -350, -320, -510, -1160} /* TG,TG,G,T,A */

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05741      , { -320, -350, -320, -510, -1160} /* TG,TG,G,T,C */
05742      , { -320, -350, -320, -510, -1160} /* TG,TG,G,T,G */
05743      , { -320, -350, -320, -510, -1160} /* TG,TG,G,T,T */
05744      }
05745      }
05746      , {{{ 520, 490, 520, 330, -320} /* TG,TG,T,E,E */
05747      , { 520, 490, 520, 330, -320} /* TG,TG,T,E,A */
05748      , { 520, 490, 520, 330, -320} /* TG,TG,T,E,C */
05749      , { 520, 490, 520, 330, -320} /* TG,TG,T,E,G */
05750      , { 520, 490, 520, 330, -320} /* TG,TG,T,E,T */
05751      }
05752      , {{{ 490, 460, 490, 300, -350} /* TG,TG,T,A,E */
05753      , { 490, 460, 490, 300, -350} /* TG,TG,T,A,A */
05754      , { 490, 460, 490, 300, -350} /* TG,TG,T,A,C */
05755      , { 490, 460, 490, 300, -350} /* TG,TG,T,A,G */
05756      , { 490, 460, 490, 300, -350} /* TG,TG,T,A,T */
05757      }
05758      , {{{ 520, 490, 520, 330, -320} /* TG,TG,T,C,E */
05759      , { 520, 490, 520, 330, -320} /* TG,TG,T,C,A */
05760      , { 520, 490, 520, 330, -320} /* TG,TG,T,C,C */
05761      , { 520, 490, 520, 330, -320} /* TG,TG,T,C,G */
05762      , { 520, 490, 520, 330, -320} /* TG,TG,T,C,T */
05763      }
05764      , {{{ 330, 300, 330, 140, -510} /* TG,TG,T,G,E */
05765      , { 330, 300, 330, 140, -510} /* TG,TG,T,G,A */
05766      , { 330, 300, 330, 140, -510} /* TG,TG,T,G,C */
05767      , { 330, 300, 330, 140, -510} /* TG,TG,T,G,G */
05768      , { 330, 300, 330, 140, -510} /* TG,TG,T,G,T */
05769      }
05770      , {{{ -320, -350, -320, -510, -1160} /* TG,TG,T,T,E */
05771      , { -320, -350, -320, -510, -1160} /* TG,TG,T,T,A */
05772      , { -320, -350, -320, -510, -1160} /* TG,TG,T,T,C */
05773      , { -320, -350, -320, -510, -1160} /* TG,TG,T,T,G */
05774      , { -320, -350, -320, -510, -1160} /* TG,TG,T,T,T */
05775      }
05776      }
05777      }
05778      , {{{ 780, 750, 780, 590, -60} /* TG,AT,E,E,E */
05779      , { 780, 750, 780, 590, -60} /* TG,AT,E,E,A */
05780      , { 780, 750, 780, 590, -60} /* TG,AT,E,E,C */
05781      , { 780, 750, 780, 590, -60} /* TG,AT,E,E,G */
05782      , { 780, 750, 780, 590, -60} /* TG,AT,E,E,T */
05783      }
05784      , {{{ 660, 630, 660, 470, -180} /* TG,AT,E,A,E */
05785      , { 660, 630, 660, 470, -180} /* TG,AT,E,A,A */
05786      , { 660, 630, 660, 470, -180} /* TG,AT,E,A,C */
05787      , { 660, 630, 660, 470, -180} /* TG,AT,E,A,G */
05788      , { 660, 630, 660, 470, -180} /* TG,AT,E,A,T */
05789      }
05790      , {{{ 780, 750, 780, 590, -60} /* TG,AT,E,C,E */
05791      , { 780, 750, 780, 590, -60} /* TG,AT,E,C,A */
05792      , { 780, 750, 780, 590, -60} /* TG,AT,E,C,C */
05793      , { 780, 750, 780, 590, -60} /* TG,AT,E,C,G */
05794      , { 780, 750, 780, 590, -60} /* TG,AT,E,C,T */
05795      }
05796      , {{{ 730, 700, 730, 540, -110} /* TG,AT,E,G,E */
05797      , { 730, 700, 730, 540, -110} /* TG,AT,E,G,A */
05798      , { 730, 700, 730, 540, -110} /* TG,AT,E,G,C */
05799      , { 730, 700, 730, 540, -110} /* TG,AT,E,G,G */
05800      , { 730, 700, 730, 540, -110} /* TG,AT,E,G,T */
05801      }
05802      , {{{ 690, 660, 690, 500, -150} /* TG,AT,E,T,E */
05803      , { 690, 660, 690, 500, -150} /* TG,AT,E,T,A */
05804      , { 690, 660, 690, 500, -150} /* TG,AT,E,T,C */
05805      , { 690, 660, 690, 500, -150} /* TG,AT,E,T,G */
05806      , { 690, 660, 690, 500, -150} /* TG,AT,E,T,T */
05807      }
05808      }
05809      , {{{ 780, 750, 780, 590, -60} /* TG,AT,A,E,E */
05810      , { 780, 750, 780, 590, -60} /* TG,AT,A,E,A */
05811      , { 780, 750, 780, 590, -60} /* TG,AT,A,E,C */
05812      , { 780, 750, 780, 590, -60} /* TG,AT,A,E,G */
05813      , { 780, 750, 780, 590, -60} /* TG,AT,A,E,T */
05814      }
05815      , {{{ 660, 630, 660, 470, -180} /* TG,AT,A,A,E */
05816      , { 660, 630, 660, 470, -180} /* TG,AT,A,A,A */
05817      , { 660, 630, 660, 470, -180} /* TG,AT,A,A,C */
05818      , { 660, 630, 660, 470, -180} /* TG,AT,A,A,G */
05819      , { 660, 630, 660, 470, -180} /* TG,AT,A,A,T */
05820      }
05821      , {{{ 780, 750, 780, 590, -60} /* TG,AT,A,C,E */
05822      , { 780, 750, 780, 590, -60} /* TG,AT,A,C,A */
05823      , { 780, 750, 780, 590, -60} /* TG,AT,A,C,C */
05824      , { 780, 750, 780, 590, -60} /* TG,AT,A,C,G */
05825      , { 780, 750, 780, 590, -60} /* TG,AT,A,C,T */
05826      }
05827      , {{{ 730, 700, 730, 540, -110} /* TG,AT,A,G,E */

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05828 , { 730, 700, 730, 540, -110} /* TG,AT,A,G,A */
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05830 , { 730, 700, 730, 540, -110} /* TG,AT,A,G,G */
05831 , { 730, 700, 730, 540, -110} /* TG,AT,A,G,T */
05832 }
05833 , {{ 690, 660, 690, 500, -150} /* TG,AT,A,T,E */
05834 , { 690, 660, 690, 500, -150} /* TG,AT,A,T,A */
05835 , { 690, 660, 690, 500, -150} /* TG,AT,A,T,C */
05836 , { 690, 660, 690, 500, -150} /* TG,AT,A,T,G */
05837 , { 690, 660, 690, 500, -150} /* TG,AT,A,T,T */
05838 }
05839 }
05840 , {{{ 780, 750, 780, 590, -60} /* TG,AT,C,E,E */
05841 , { 780, 750, 780, 590, -60} /* TG,AT,C,E,A */
05842 , { 780, 750, 780, 590, -60} /* TG,AT,C,E,C */
05843 , { 780, 750, 780, 590, -60} /* TG,AT,C,E,G */
05844 , { 780, 750, 780, 590, -60} /* TG,AT,C,E,T */
05845 }
05846 , {{ 660, 630, 660, 470, -180} /* TG,AT,C,A,E */
05847 , { 660, 630, 660, 470, -180} /* TG,AT,C,A,A */
05848 , { 660, 630, 660, 470, -180} /* TG,AT,C,A,C */
05849 , { 660, 630, 660, 470, -180} /* TG,AT,C,A,G */
05850 , { 660, 630, 660, 470, -180} /* TG,AT,C,A,T */
05851 }
05852 , {{ 780, 750, 780, 590, -60} /* TG,AT,C,C,E */
05853 , { 780, 750, 780, 590, -60} /* TG,AT,C,C,A */
05854 , { 780, 750, 780, 590, -60} /* TG,AT,C,C,C */
05855 , { 780, 750, 780, 590, -60} /* TG,AT,C,C,G */
05856 , { 780, 750, 780, 590, -60} /* TG,AT,C,C,T */
05857 }
05858 , {{ 730, 700, 730, 540, -110} /* TG,AT,C,G,E */
05859 , { 730, 700, 730, 540, -110} /* TG,AT,C,G,A */
05860 , { 730, 700, 730, 540, -110} /* TG,AT,C,G,C */
05861 , { 730, 700, 730, 540, -110} /* TG,AT,C,G,G */
05862 , { 730, 700, 730, 540, -110} /* TG,AT,C,G,T */
05863 }
05864 , {{ 690, 660, 690, 500, -150} /* TG,AT,C,T,E */
05865 , { 690, 660, 690, 500, -150} /* TG,AT,C,T,A */
05866 , { 690, 660, 690, 500, -150} /* TG,AT,C,T,C */
05867 , { 690, 660, 690, 500, -150} /* TG,AT,C,T,G */
05868 , { 690, 660, 690, 500, -150} /* TG,AT,C,T,T */
05869 }
05870 }
05871 , {{{ 780, 750, 780, 590, -60} /* TG,AT,G,E,E */
05872 , { 780, 750, 780, 590, -60} /* TG,AT,G,E,A */
05873 , { 780, 750, 780, 590, -60} /* TG,AT,G,E,C */
05874 , { 780, 750, 780, 590, -60} /* TG,AT,G,E,G */
05875 , { 780, 750, 780, 590, -60} /* TG,AT,G,E,T */
05876 }
05877 , {{ 660, 630, 660, 470, -180} /* TG,AT,G,A,E */
05878 , { 660, 630, 660, 470, -180} /* TG,AT,G,A,A */
05879 , { 660, 630, 660, 470, -180} /* TG,AT,G,A,C */
05880 , { 660, 630, 660, 470, -180} /* TG,AT,G,A,G */
05881 , { 660, 630, 660, 470, -180} /* TG,AT,G,A,T */
05882 }
05883 , {{ 780, 750, 780, 590, -60} /* TG,AT,G,C,E */
05884 , { 780, 750, 780, 590, -60} /* TG,AT,G,C,A */
05885 , { 780, 750, 780, 590, -60} /* TG,AT,G,C,C */
05886 , { 780, 750, 780, 590, -60} /* TG,AT,G,C,G */
05887 , { 780, 750, 780, 590, -60} /* TG,AT,G,C,T */
05888 }
05889 , {{{ 730, 700, 730, 540, -110} /* TG,AT,G,G,E */
05890 , { 730, 700, 730, 540, -110} /* TG,AT,G,G,A */
05891 , { 730, 700, 730, 540, -110} /* TG,AT,G,G,C */
05892 , { 730, 700, 730, 540, -110} /* TG,AT,G,G,G */
05893 , { 730, 700, 730, 540, -110} /* TG,AT,G,G,T */
05894 }
05895 , {{ 690, 660, 690, 500, -150} /* TG,AT,G,T,E */
05896 , { 690, 660, 690, 500, -150} /* TG,AT,G,T,A */
05897 , { 690, 660, 690, 500, -150} /* TG,AT,G,T,C */
05898 , { 690, 660, 690, 500, -150} /* TG,AT,G,T,G */
05899 , { 690, 660, 690, 500, -150} /* TG,AT,G,T,T */
05900 }
05901 }
05902 , {{{ 780, 750, 780, 590, -60} /* TG,AT,T,E,E */
05903 , { 780, 750, 780, 590, -60} /* TG,AT,T,E,A */
05904 , { 780, 750, 780, 590, -60} /* TG,AT,T,E,C */
05905 , { 780, 750, 780, 590, -60} /* TG,AT,T,E,G */
05906 , { 780, 750, 780, 590, -60} /* TG,AT,T,E,T */
05907 }
05908 , {{ 660, 630, 660, 470, -180} /* TG,AT,T,A,E */
05909 , { 660, 630, 660, 470, -180} /* TG,AT,T,A,A */
05910 , { 660, 630, 660, 470, -180} /* TG,AT,T,A,C */
05911 , { 660, 630, 660, 470, -180} /* TG,AT,T,A,G */
05912 , { 660, 630, 660, 470, -180} /* TG,AT,T,A,T */
05913 }
05914 , {{ 780, 750, 780, 590, -60} /* TG,AT,T,C,E */
```

```

05915      , {      780,      750,      780,      590,      -60} /* TG,AT,T,C,A */
05916      , {      780,      750,      780,      590,      -60} /* TG,AT,T,C,C */
05917      , {      780,      750,      780,      590,      -60} /* TG,AT,T,C,G */
05918      , {      780,      750,      780,      590,      -60} /* TG,AT,T,C,T */
05919      }
05920      , {{      730,      700,      730,      540,     -110} /* TG,AT,T,G,E */
05921      , {      730,      700,      730,      540,     -110} /* TG,AT,T,G,A */
05922      , {      730,      700,      730,      540,     -110} /* TG,AT,T,G,C */
05923      , {      730,      700,      730,      540,     -110} /* TG,AT,T,G,G */
05924      , {      730,      700,      730,      540,     -110} /* TG,AT,T,G,T */
05925      }
05926      , {{      690,      660,      690,      500,     -150} /* TG,AT,T,T,E */
05927      , {      690,      660,      690,      500,     -150} /* TG,AT,T,T,A */
05928      , {      690,      660,      690,      500,     -150} /* TG,AT,T,T,C */
05929      , {      690,      660,      690,      500,     -150} /* TG,AT,T,T,G */
05930      , {      690,      660,      690,      500,     -150} /* TG,AT,T,T,T */
05931      }
05932      }
05933      }
05934      , {{{      520,      490,      520,      330,     -320} /* TG,TA,E,E,E */
05935      , {      520,      490,      520,      330,     -320} /* TG,TA,E,E,A */
05936      , {      520,      490,      520,      330,     -320} /* TG,TA,E,E,C */
05937      , {      520,      490,      520,      330,     -320} /* TG,TA,E,E,G */
05938      , {      520,      490,      520,      330,     -320} /* TG,TA,E,E,T */
05939      }
05940      , {{      490,      460,      490,      300,     -350} /* TG,TA,E,A,E */
05941      , {      490,      460,      490,      300,     -350} /* TG,TA,E,A,A */
05942      , {      490,      460,      490,      300,     -350} /* TG,TA,E,A,C */
05943      , {      490,      460,      490,      300,     -350} /* TG,TA,E,A,G */
05944      , {      490,      460,      490,      300,     -350} /* TG,TA,E,A,T */
05945      }
05946      , {{      520,      490,      520,      330,     -320} /* TG,TA,E,C,E */
05947      , {      520,      490,      520,      330,     -320} /* TG,TA,E,C,A */
05948      , {      520,      490,      520,      330,     -320} /* TG,TA,E,C,C */
05949      , {      520,      490,      520,      330,     -320} /* TG,TA,E,C,G */
05950      , {      520,      490,      520,      330,     -320} /* TG,TA,E,C,T */
05951      }
05952      , {{      330,      300,      330,      140,     -510} /* TG,TA,E,G,E */
05953      , {      330,      300,      330,      140,     -510} /* TG,TA,E,G,A */
05954      , {      330,      300,      330,      140,     -510} /* TG,TA,E,G,C */
05955      , {      330,      300,      330,      140,     -510} /* TG,TA,E,G,G */
05956      , {      330,      300,      330,      140,     -510} /* TG,TA,E,G,T */
05957      }
05958      , {{     -320,     -350,     -320,     -510,    -1160} /* TG,TA,E,T,E */
05959      , {     -320,     -350,     -320,     -510,    -1160} /* TG,TA,E,T,A */
05960      , {     -320,     -350,     -320,     -510,    -1160} /* TG,TA,E,T,C */
05961      , {     -320,     -350,     -320,     -510,    -1160} /* TG,TA,E,T,G */
05962      , {     -320,     -350,     -320,     -510,    -1160} /* TG,TA,E,T,T */
05963      }
05964      }
05965      , {{{      520,      490,      520,      330,     -320} /* TG,TA,A,E,E */
05966      , {      520,      490,      520,      330,     -320} /* TG,TA,A,E,A */
05967      , {      520,      490,      520,      330,     -320} /* TG,TA,A,E,C */
05968      , {      520,      490,      520,      330,     -320} /* TG,TA,A,E,G */
05969      , {      520,      490,      520,      330,     -320} /* TG,TA,A,E,T */
05970      }
05971      , {{      490,      460,      490,      300,     -350} /* TG,TA,A,A,E */
05972      , {      490,      460,      490,      300,     -350} /* TG,TA,A,A,A */
05973      , {      490,      460,      490,      300,     -350} /* TG,TA,A,A,C */
05974      , {      490,      460,      490,      300,     -350} /* TG,TA,A,A,G */
05975      , {      490,      460,      490,      300,     -350} /* TG,TA,A,A,T */
05976      }
05977      , {{      520,      490,      520,      330,     -320} /* TG,TA,A,C,E */
05978      , {      520,      490,      520,      330,     -320} /* TG,TA,A,C,A */
05979      , {      520,      490,      520,      330,     -320} /* TG,TA,A,C,C */
05980      , {      520,      490,      520,      330,     -320} /* TG,TA,A,C,G */
05981      , {      520,      490,      520,      330,     -320} /* TG,TA,A,C,T */
05982      }
05983      , {{      330,      300,      330,      140,     -510} /* TG,TA,A,G,E */
05984      , {      330,      300,      330,      140,     -510} /* TG,TA,A,G,A */
05985      , {      330,      300,      330,      140,     -510} /* TG,TA,A,G,C */
05986      , {      330,      300,      330,      140,     -510} /* TG,TA,A,G,G */
05987      , {      330,      300,      330,      140,     -510} /* TG,TA,A,G,T */
05988      }
05989      , {{     -320,     -350,     -320,     -510,    -1160} /* TG,TA,A,T,E */
05990      , {     -320,     -350,     -320,     -510,    -1160} /* TG,TA,A,T,A */
05991      , {     -320,     -350,     -320,     -510,    -1160} /* TG,TA,A,T,C */
05992      , {     -320,     -350,     -320,     -510,    -1160} /* TG,TA,A,T,G */
05993      , {     -320,     -350,     -320,     -510,    -1160} /* TG,TA,A,T,T */
05994      }
05995      }
05996      , {{{      520,      490,      520,      330,     -320} /* TG,TA,C,E,E */
05997      , {      520,      490,      520,      330,     -320} /* TG,TA,C,E,A */
05998      , {      520,      490,      520,      330,     -320} /* TG,TA,C,E,C */
05999      , {      520,      490,      520,      330,     -320} /* TG,TA,C,E,G */
06000      , {      520,      490,      520,      330,     -320} /* TG,TA,C,E,T */
06001      }

```

```

06002 ,{{ 490, 460, 490, 300, -350} /* TG,TA,C,A,E */
06003 ,{ 490, 460, 490, 300, -350} /* TG,TA,C,A,A */
06004 ,{ 490, 460, 490, 300, -350} /* TG,TA,C,A,C */
06005 ,{ 490, 460, 490, 300, -350} /* TG,TA,C,A,G */
06006 ,{ 490, 460, 490, 300, -350} /* TG,TA,C,A,T */
06007 }
06008 ,{{ 520, 490, 520, 330, -320} /* TG,TA,C,C,E */
06009 ,{ 520, 490, 520, 330, -320} /* TG,TA,C,C,A */
06010 ,{ 520, 490, 520, 330, -320} /* TG,TA,C,C,C */
06011 ,{ 520, 490, 520, 330, -320} /* TG,TA,C,C,G */
06012 ,{ 520, 490, 520, 330, -320} /* TG,TA,C,C,T */
06013 }
06014 ,{{ 330, 300, 330, 140, -510} /* TG,TA,C,G,E */
06015 ,{ 330, 300, 330, 140, -510} /* TG,TA,C,G,A */
06016 ,{ 330, 300, 330, 140, -510} /* TG,TA,C,G,C */
06017 ,{ 330, 300, 330, 140, -510} /* TG,TA,C,G,G */
06018 ,{ 330, 300, 330, 140, -510} /* TG,TA,C,G,T */
06019 }
06020 ,{{ -320, -350, -320, -510, -1160} /* TG,TA,C,T,E */
06021 ,{ -320, -350, -320, -510, -1160} /* TG,TA,C,T,A */
06022 ,{ -320, -350, -320, -510, -1160} /* TG,TA,C,T,C */
06023 ,{ -320, -350, -320, -510, -1160} /* TG,TA,C,T,G */
06024 ,{ -320, -350, -320, -510, -1160} /* TG,TA,C,T,T */
06025 }
06026 }
06027 ,{{{ 520, 490, 520, 330, -320} /* TG,TA,G,E,E */
06028 ,{ 520, 490, 520, 330, -320} /* TG,TA,G,E,A */
06029 ,{ 520, 490, 520, 330, -320} /* TG,TA,G,E,C */
06030 ,{ 520, 490, 520, 330, -320} /* TG,TA,G,E,G */
06031 ,{ 520, 490, 520, 330, -320} /* TG,TA,G,E,T */
06032 }
06033 ,{{ 490, 460, 490, 300, -350} /* TG,TA,G,A,E */
06034 ,{ 490, 460, 490, 300, -350} /* TG,TA,G,A,A */
06035 ,{ 490, 460, 490, 300, -350} /* TG,TA,G,A,C */
06036 ,{ 490, 460, 490, 300, -350} /* TG,TA,G,A,G */
06037 ,{ 490, 460, 490, 300, -350} /* TG,TA,G,A,T */
06038 }
06039 ,{{ 520, 490, 520, 330, -320} /* TG,TA,G,C,E */
06040 ,{ 520, 490, 520, 330, -320} /* TG,TA,G,C,A */
06041 ,{ 520, 490, 520, 330, -320} /* TG,TA,G,C,C */
06042 ,{ 520, 490, 520, 330, -320} /* TG,TA,G,C,G */
06043 ,{ 520, 490, 520, 330, -320} /* TG,TA,G,C,T */
06044 }
06045 ,{{ 330, 300, 330, 140, -510} /* TG,TA,G,G,E */
06046 ,{ 330, 300, 330, 140, -510} /* TG,TA,G,G,A */
06047 ,{ 330, 300, 330, 140, -510} /* TG,TA,G,G,C */
06048 ,{ 330, 300, 330, 140, -510} /* TG,TA,G,G,G */
06049 ,{ 330, 300, 330, 140, -510} /* TG,TA,G,G,T */
06050 }
06051 ,{{ -320, -350, -320, -510, -1160} /* TG,TA,G,T,E */
06052 ,{ -320, -350, -320, -510, -1160} /* TG,TA,G,T,A */
06053 ,{ -320, -350, -320, -510, -1160} /* TG,TA,G,T,C */
06054 ,{ -320, -350, -320, -510, -1160} /* TG,TA,G,T,G */
06055 ,{ -320, -350, -320, -510, -1160} /* TG,TA,G,T,T */
06056 }
06057 }
06058 ,{{{ 520, 490, 520, 330, -320} /* TG,TA,T,E,E */
06059 ,{ 520, 490, 520, 330, -320} /* TG,TA,T,E,A */
06060 ,{ 520, 490, 520, 330, -320} /* TG,TA,T,E,C */
06061 ,{ 520, 490, 520, 330, -320} /* TG,TA,T,E,G */
06062 ,{ 520, 490, 520, 330, -320} /* TG,TA,T,E,T */
06063 }
06064 ,{{ 490, 460, 490, 300, -350} /* TG,TA,T,A,E */
06065 ,{ 490, 460, 490, 300, -350} /* TG,TA,T,A,A */
06066 ,{ 490, 460, 490, 300, -350} /* TG,TA,T,A,C */
06067 ,{ 490, 460, 490, 300, -350} /* TG,TA,T,A,G */
06068 ,{ 490, 460, 490, 300, -350} /* TG,TA,T,A,T */
06069 }
06070 ,{{ 520, 490, 520, 330, -320} /* TG,TA,T,C,E */
06071 ,{ 520, 490, 520, 330, -320} /* TG,TA,T,C,A */
06072 ,{ 520, 490, 520, 330, -320} /* TG,TA,T,C,C */
06073 ,{ 520, 490, 520, 330, -320} /* TG,TA,T,C,G */
06074 ,{ 520, 490, 520, 330, -320} /* TG,TA,T,C,T */
06075 }
06076 ,{{ 330, 300, 330, 140, -510} /* TG,TA,T,G,E */
06077 ,{ 330, 300, 330, 140, -510} /* TG,TA,T,G,A */
06078 ,{ 330, 300, 330, 140, -510} /* TG,TA,T,G,C */
06079 ,{ 330, 300, 330, 140, -510} /* TG,TA,T,G,G */
06080 ,{ 330, 300, 330, 140, -510} /* TG,TA,T,G,T */
06081 }
06082 ,{{ -320, -350, -320, -510, -1160} /* TG,TA,T,T,E */
06083 ,{ -320, -350, -320, -510, -1160} /* TG,TA,T,T,A */
06084 ,{ -320, -350, -320, -510, -1160} /* TG,TA,T,T,C */
06085 ,{ -320, -350, -320, -510, -1160} /* TG,TA,T,T,G */
06086 ,{ -320, -350, -320, -510, -1160} /* TG,TA,T,T,T */
06087 }
06088 }

```

```

06089      }
06090      ,{{{      780,      750,      780,      590,      -60} /* TG,NN,E,E,E */
06091      ,{      780,      750,      780,      590,      -60} /* TG,NN,E,E,A */
06092      ,{      780,      750,      780,      590,      -60} /* TG,NN,E,E,C */
06093      ,{      780,      750,      780,      590,      -60} /* TG,NN,E,E,G */
06094      ,{      780,      750,      780,      590,      -60} /* TG,NN,E,E,T */
06095      }
06096      ,{{{      660,      630,      660,      470,      -180} /* TG,NN,E,A,E */
06097      ,{      660,      630,      660,      470,      -180} /* TG,NN,E,A,A */
06098      ,{      660,      630,      660,      470,      -180} /* TG,NN,E,A,C */
06099      ,{      660,      630,      660,      470,      -180} /* TG,NN,E,A,G */
06100      ,{      660,      630,      660,      470,      -180} /* TG,NN,E,A,T */
06101      }
06102      ,{{{      780,      750,      780,      590,      -60} /* TG,NN,E,C,E */
06103      ,{      780,      750,      780,      590,      -60} /* TG,NN,E,C,A */
06104      ,{      780,      750,      780,      590,      -60} /* TG,NN,E,C,C */
06105      ,{      780,      750,      780,      590,      -60} /* TG,NN,E,C,G */
06106      ,{      780,      750,      780,      590,      -60} /* TG,NN,E,C,T */
06107      }
06108      ,{{{      730,      700,      730,      540,      -110} /* TG,NN,E,G,E */
06109      ,{      730,      700,      730,      540,      -110} /* TG,NN,E,G,A */
06110      ,{      730,      700,      730,      540,      -110} /* TG,NN,E,G,C */
06111      ,{      730,      700,      730,      540,      -110} /* TG,NN,E,G,G */
06112      ,{      730,      700,      730,      540,      -110} /* TG,NN,E,G,T */
06113      }
06114      ,{{{      690,      660,      690,      500,      -150} /* TG,NN,E,T,E */
06115      ,{      690,      660,      690,      500,      -150} /* TG,NN,E,T,A */
06116      ,{      690,      660,      690,      500,      -150} /* TG,NN,E,T,C */
06117      ,{      690,      660,      690,      500,      -150} /* TG,NN,E,T,G */
06118      ,{      690,      660,      690,      500,      -150} /* TG,NN,E,T,T */
06119      }
06120      }
06121      ,{{{      780,      750,      780,      590,      -60} /* TG,NN,A,E,E */
06122      ,{      780,      750,      780,      590,      -60} /* TG,NN,A,E,A */
06123      ,{      780,      750,      780,      590,      -60} /* TG,NN,A,E,C */
06124      ,{      780,      750,      780,      590,      -60} /* TG,NN,A,E,G */
06125      ,{      780,      750,      780,      590,      -60} /* TG,NN,A,E,T */
06126      }
06127      ,{{{      660,      630,      660,      470,      -180} /* TG,NN,A,A,E */
06128      ,{      660,      630,      660,      470,      -180} /* TG,NN,A,A,A */
06129      ,{      660,      630,      660,      470,      -180} /* TG,NN,A,A,C */
06130      ,{      660,      630,      660,      470,      -180} /* TG,NN,A,A,G */
06131      ,{      660,      630,      660,      470,      -180} /* TG,NN,A,A,T */
06132      }
06133      ,{{{      780,      750,      780,      590,      -60} /* TG,NN,A,C,E */
06134      ,{      780,      750,      780,      590,      -60} /* TG,NN,A,C,A */
06135      ,{      780,      750,      780,      590,      -60} /* TG,NN,A,C,C */
06136      ,{      780,      750,      780,      590,      -60} /* TG,NN,A,C,G */
06137      ,{      780,      750,      780,      590,      -60} /* TG,NN,A,C,T */
06138      }
06139      ,{{{      730,      700,      730,      540,      -110} /* TG,NN,A,G,E */
06140      ,{      730,      700,      730,      540,      -110} /* TG,NN,A,G,A */
06141      ,{      730,      700,      730,      540,      -110} /* TG,NN,A,G,C */
06142      ,{      730,      700,      730,      540,      -110} /* TG,NN,A,G,G */
06143      ,{      730,      700,      730,      540,      -110} /* TG,NN,A,G,T */
06144      }
06145      ,{{{      690,      660,      690,      500,      -150} /* TG,NN,A,T,E */
06146      ,{      690,      660,      690,      500,      -150} /* TG,NN,A,T,A */
06147      ,{      690,      660,      690,      500,      -150} /* TG,NN,A,T,C */
06148      ,{      690,      660,      690,      500,      -150} /* TG,NN,A,T,G */
06149      ,{      690,      660,      690,      500,      -150} /* TG,NN,A,T,T */
06150      }
06151      }
06152      ,{{{      780,      750,      780,      590,      -60} /* TG,NN,C,E,E */
06153      ,{      780,      750,      780,      590,      -60} /* TG,NN,C,E,A */
06154      ,{      780,      750,      780,      590,      -60} /* TG,NN,C,E,C */
06155      ,{      780,      750,      780,      590,      -60} /* TG,NN,C,E,G */
06156      ,{      780,      750,      780,      590,      -60} /* TG,NN,C,E,T */
06157      }
06158      ,{{{      660,      630,      660,      470,      -180} /* TG,NN,C,A,E */
06159      ,{      660,      630,      660,      470,      -180} /* TG,NN,C,A,A */
06160      ,{      660,      630,      660,      470,      -180} /* TG,NN,C,A,C */
06161      ,{      660,      630,      660,      470,      -180} /* TG,NN,C,A,G */
06162      ,{      660,      630,      660,      470,      -180} /* TG,NN,C,A,T */
06163      }
06164      ,{{{      780,      750,      780,      590,      -60} /* TG,NN,C,C,E */
06165      ,{      780,      750,      780,      590,      -60} /* TG,NN,C,C,A */
06166      ,{      780,      750,      780,      590,      -60} /* TG,NN,C,C,C */
06167      ,{      780,      750,      780,      590,      -60} /* TG,NN,C,C,G */
06168      ,{      780,      750,      780,      590,      -60} /* TG,NN,C,C,T */
06169      }
06170      ,{{{      730,      700,      730,      540,      -110} /* TG,NN,C,G,E */
06171      ,{      730,      700,      730,      540,      -110} /* TG,NN,C,G,A */
06172      ,{      730,      700,      730,      540,      -110} /* TG,NN,C,G,C */
06173      ,{      730,      700,      730,      540,      -110} /* TG,NN,C,G,G */
06174      ,{      730,      700,      730,      540,      -110} /* TG,NN,C,G,T */
06175      }

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```
06176 ,{{ 690, 660, 690, 500, -150} /* TG,NN,C,T,E */
06177 ,{ 690, 660, 690, 500, -150} /* TG,NN,C,T,A */
06178 ,{ 690, 660, 690, 500, -150} /* TG,NN,C,T,C */
06179 ,{ 690, 660, 690, 500, -150} /* TG,NN,C,T,G */
06180 ,{ 690, 660, 690, 500, -150} /* TG,NN,C,T,T */
06181 }
06182 }
06183 ,{{{ 780, 750, 780, 590, -60} /* TG,NN,G,E,E */
06184 ,{ 780, 750, 780, 590, -60} /* TG,NN,G,E,A */
06185 ,{ 780, 750, 780, 590, -60} /* TG,NN,G,E,C */
06186 ,{ 780, 750, 780, 590, -60} /* TG,NN,G,E,G */
06187 ,{ 780, 750, 780, 590, -60} /* TG,NN,G,E,T */
06188 }
06189 ,{{{ 660, 630, 660, 470, -180} /* TG,NN,G,A,E */
06190 ,{ 660, 630, 660, 470, -180} /* TG,NN,G,A,A */
06191 ,{ 660, 630, 660, 470, -180} /* TG,NN,G,A,C */
06192 ,{ 660, 630, 660, 470, -180} /* TG,NN,G,A,G */
06193 ,{ 660, 630, 660, 470, -180} /* TG,NN,G,A,T */
06194 }
06195 ,{{{ 780, 750, 780, 590, -60} /* TG,NN,G,C,E */
06196 ,{ 780, 750, 780, 590, -60} /* TG,NN,G,C,A */
06197 ,{ 780, 750, 780, 590, -60} /* TG,NN,G,C,C */
06198 ,{ 780, 750, 780, 590, -60} /* TG,NN,G,C,G */
06199 ,{ 780, 750, 780, 590, -60} /* TG,NN,G,C,T */
06200 }
06201 ,{{{ 730, 700, 730, 540, -110} /* TG,NN,G,G,E */
06202 ,{ 730, 700, 730, 540, -110} /* TG,NN,G,G,A */
06203 ,{ 730, 700, 730, 540, -110} /* TG,NN,G,G,C */
06204 ,{ 730, 700, 730, 540, -110} /* TG,NN,G,G,G */
06205 ,{ 730, 700, 730, 540, -110} /* TG,NN,G,G,T */
06206 }
06207 ,{{{ 690, 660, 690, 500, -150} /* TG,NN,G,T,E */
06208 ,{ 690, 660, 690, 500, -150} /* TG,NN,G,T,A */
06209 ,{ 690, 660, 690, 500, -150} /* TG,NN,G,T,C */
06210 ,{ 690, 660, 690, 500, -150} /* TG,NN,G,T,G */
06211 ,{ 690, 660, 690, 500, -150} /* TG,NN,G,T,T */
06212 }
06213 }
06214 ,{{{ 780, 750, 780, 590, -60} /* TG,NN,T,E,E */
06215 ,{ 780, 750, 780, 590, -60} /* TG,NN,T,E,A */
06216 ,{ 780, 750, 780, 590, -60} /* TG,NN,T,E,C */
06217 ,{ 780, 750, 780, 590, -60} /* TG,NN,T,E,G */
06218 ,{ 780, 750, 780, 590, -60} /* TG,NN,T,E,T */
06219 }
06220 ,{{{ 660, 630, 660, 470, -180} /* TG,NN,T,A,E */
06221 ,{ 660, 630, 660, 470, -180} /* TG,NN,T,A,A */
06222 ,{ 660, 630, 660, 470, -180} /* TG,NN,T,A,C */
06223 ,{ 660, 630, 660, 470, -180} /* TG,NN,T,A,G */
06224 ,{ 660, 630, 660, 470, -180} /* TG,NN,T,A,T */
06225 }
06226 ,{{{ 780, 750, 780, 590, -60} /* TG,NN,T,C,E */
06227 ,{ 780, 750, 780, 590, -60} /* TG,NN,T,C,A */
06228 ,{ 780, 750, 780, 590, -60} /* TG,NN,T,C,C */
06229 ,{ 780, 750, 780, 590, -60} /* TG,NN,T,C,G */
06230 ,{ 780, 750, 780, 590, -60} /* TG,NN,T,C,T */
06231 }
06232 ,{{{ 730, 700, 730, 540, -110} /* TG,NN,T,G,E */
06233 ,{ 730, 700, 730, 540, -110} /* TG,NN,T,G,A */
06234 ,{ 730, 700, 730, 540, -110} /* TG,NN,T,G,C */
06235 ,{ 730, 700, 730, 540, -110} /* TG,NN,T,G,G */
06236 ,{ 730, 700, 730, 540, -110} /* TG,NN,T,G,T */
06237 }
06238 ,{{{ 690, 660, 690, 500, -150} /* TG,NN,T,T,E */
06239 ,{ 690, 660, 690, 500, -150} /* TG,NN,T,T,A */
06240 ,{ 690, 660, 690, 500, -150} /* TG,NN,T,T,C */
06241 ,{ 690, 660, 690, 500, -150} /* TG,NN,T,T,G */
06242 ,{ 690, 660, 690, 500, -150} /* TG,NN,T,T,T */
06243 }
06244 }
06245 }
06246 }
06247 ,{{{ INF, INF, INF, INF, INF} /* AT,NP,E,E,E */
06248 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,A */
06249 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,C */
06250 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,G */
06251 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,E,T */
06252 }
06253 ,{{{ INF, INF, INF, INF, INF} /* AT,NP,E,A,E */
06254 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,A,A */
06255 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,A,C */
06256 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,A,G */
06257 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,A,T */
06258 }
06259 ,{{{ INF, INF, INF, INF, INF} /* AT,NP,E,C,E */
06260 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,C,A */
06261 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,C,C */
06262 ,{ INF, INF, INF, INF, INF} /* AT,NP,E,C,G */
```

```

06263      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,C,T */
06264      }
06265      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,E */
06266      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,A */
06267      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,C */
06268      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,G */
06269      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,G,T */
06270      }
06271      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,T,E */
06272      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,T,A */
06273      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,T,C */
06274      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,T,G */
06275      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,E,T,T */
06276      }
06277      }
06278      , {{{      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,E,E */
06279      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,E,A */
06280      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,E,C */
06281      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,E,G */
06282      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,E,T */
06283      }
06284      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,A,E */
06285      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,A,A */
06286      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,A,C */
06287      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,A,G */
06288      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,A,T */
06289      }
06290      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,C,E */
06291      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,C,A */
06292      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,C,C */
06293      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,C,G */
06294      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,C,T */
06295      }
06296      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,G,E */
06297      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,G,A */
06298      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,G,C */
06299      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,G,G */
06300      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,G,T */
06301      }
06302      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,T,E */
06303      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,T,A */
06304      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,T,C */
06305      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,T,G */
06306      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,A,T,T */
06307      }
06308      }
06309      , {{{      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,E,E */
06310      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,E,A */
06311      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,E,C */
06312      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,E,G */
06313      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,E,T */
06314      }
06315      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,A,E */
06316      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,A,A */
06317      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,A,C */
06318      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,A,G */
06319      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,A,T */
06320      }
06321      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,C,E */
06322      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,C,A */
06323      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,C,C */
06324      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,C,G */
06325      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,C,T */
06326      }
06327      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,G,E */
06328      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,G,A */
06329      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,G,C */
06330      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,G,G */
06331      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,G,T */
06332      }
06333      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,T,E */
06334      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,T,A */
06335      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,T,C */
06336      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,T,G */
06337      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,C,T,T */
06338      }
06339      }
06340      , {{{      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,E,E */
06341      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,E,A */
06342      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,E,C */
06343      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,E,G */
06344      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,E,T */
06345      }
06346      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,A,E */
06347      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,A,A */
06348      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,A,C */
06349      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,A,G */

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06350      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,A,T */
06351      }
06352      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,C,E */
06353      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,C,A */
06354      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,C,C */
06355      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,C,G */
06356      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,C,T */
06357      }
06358      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,G,E */
06359      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,G,A */
06360      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,G,C */
06361      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,G,G */
06362      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,G,T */
06363      }
06364      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,T,E */
06365      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,T,A */
06366      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,T,C */
06367      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,T,G */
06368      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,G,T,T */
06369      }
06370      }
06371      , {{{      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,E,E */
06372      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,E,A */
06373      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,E,C */
06374      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,E,G */
06375      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,E,T */
06376      }
06377      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,A,E */
06378      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,A,A */
06379      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,A,C */
06380      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,A,G */
06381      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,A,T */
06382      }
06383      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,C,E */
06384      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,C,A */
06385      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,C,C */
06386      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,C,G */
06387      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,C,T */
06388      }
06389      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,G,E */
06390      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,G,A */
06391      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,G,C */
06392      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,G,G */
06393      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,G,T */
06394      }
06395      , {{      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,T,E */
06396      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,T,A */
06397      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,T,C */
06398      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,T,G */
06399      , {      INF,      INF,      INF,      INF,      INF} /* AT,NP,T,T,T */
06400      }
06401      }
06402      }
06403      , {{{      100,      -20,      100,      50,      10} /* AT,CG,E,E,E */
06404      , {      100,      -20,      100,      50,      10} /* AT,CG,E,E,A */
06405      , {      100,      -20,      100,      50,      10} /* AT,CG,E,E,C */
06406      , {      100,      -20,      100,      50,      10} /* AT,CG,E,E,G */
06407      , {      100,      -20,      100,      50,      10} /* AT,CG,E,E,T */
06408      }
06409      , {{      60,      -60,      60,      10,      -30} /* AT,CG,E,A,E */
06410      , {      60,      -60,      60,      10,      -30} /* AT,CG,E,A,A */
06411      , {      60,      -60,      60,      10,      -30} /* AT,CG,E,A,C */
06412      , {      60,      -60,      60,      10,      -30} /* AT,CG,E,A,G */
06413      , {      60,      -60,      60,      10,      -30} /* AT,CG,E,A,T */
06414      }
06415      , {{      100,      -20,      100,      50,      10} /* AT,CG,E,C,E */
06416      , {      100,      -20,      100,      50,      10} /* AT,CG,E,C,A */
06417      , {      100,      -20,      100,      50,      10} /* AT,CG,E,C,C */
06418      , {      100,      -20,      100,      50,      10} /* AT,CG,E,C,G */
06419      , {      100,      -20,      100,      50,      10} /* AT,CG,E,C,T */
06420      }
06421      , {{      50,      -70,      50,      0,      -40} /* AT,CG,E,G,E */
06422      , {      50,      -70,      50,      0,      -40} /* AT,CG,E,G,A */
06423      , {      50,      -70,      50,      0,      -40} /* AT,CG,E,G,C */
06424      , {      50,      -70,      50,      0,      -40} /* AT,CG,E,G,G */
06425      , {      50,      -70,      50,      0,      -40} /* AT,CG,E,G,T */
06426      }
06427      , {{      20,      -100,      20,      -30,      -70} /* AT,CG,E,T,E */
06428      , {      20,      -100,      20,      -30,      -70} /* AT,CG,E,T,A */
06429      , {      20,      -100,      20,      -30,      -70} /* AT,CG,E,T,C */
06430      , {      20,      -100,      20,      -30,      -70} /* AT,CG,E,T,G */
06431      , {      20,      -100,      20,      -30,      -70} /* AT,CG,E,T,T */
06432      }
06433      }
06434      , {{{      100,      -20,      100,      50,      10} /* AT,CG,A,E,E */
06435      , {      100,      -20,      100,      50,      10} /* AT,CG,A,E,A */
06436      , {      100,      -20,      100,      50,      10} /* AT,CG,A,E,C */

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06437      , {      100,      -20,      100,      50,      10} /* AT,CG,A,E,G */
06438      , {      100,      -20,      100,      50,      10} /* AT,CG,A,E,T */
06439      }
06440      , {{      60,      -60,      60,      10,     -30} /* AT,CG,A,A,E */
06441      , {      60,      -60,      60,      10,     -30} /* AT,CG,A,A,A */
06442      , {      60,      -60,      60,      10,     -30} /* AT,CG,A,A,C */
06443      , {      60,      -60,      60,      10,     -30} /* AT,CG,A,A,G */
06444      , {      60,      -60,      60,      10,     -30} /* AT,CG,A,A,T */
06445      }
06446      , {{      100,      -20,      100,      50,      10} /* AT,CG,A,C,E */
06447      , {      100,      -20,      100,      50,      10} /* AT,CG,A,C,A */
06448      , {      100,      -20,      100,      50,      10} /* AT,CG,A,C,C */
06449      , {      100,      -20,      100,      50,      10} /* AT,CG,A,C,G */
06450      , {      100,      -20,      100,      50,      10} /* AT,CG,A,C,T */
06451      }
06452      , {{      50,      -70,      50,      0,     -40} /* AT,CG,A,G,E */
06453      , {      50,      -70,      50,      0,     -40} /* AT,CG,A,G,A */
06454      , {      50,      -70,      50,      0,     -40} /* AT,CG,A,G,C */
06455      , {      50,      -70,      50,      0,     -40} /* AT,CG,A,G,G */
06456      , {      50,      -70,      50,      0,     -40} /* AT,CG,A,G,T */
06457      }
06458      , {{      20,     -100,      20,     -30,     -70} /* AT,CG,A,T,E */
06459      , {      20,     -100,      20,     -30,     -70} /* AT,CG,A,T,A */
06460      , {      20,     -100,      20,     -30,     -70} /* AT,CG,A,T,C */
06461      , {      20,     -100,      20,     -30,     -70} /* AT,CG,A,T,G */
06462      , {      20,     -100,      20,     -30,     -70} /* AT,CG,A,T,T */
06463      }
06464      }
06465      , {{{      100,      -20,      100,      50,      10} /* AT,CG,C,E,E */
06466      , {      100,      -20,      100,      50,      10} /* AT,CG,C,E,A */
06467      , {      100,      -20,      100,      50,      10} /* AT,CG,C,E,C */
06468      , {      100,      -20,      100,      50,      10} /* AT,CG,C,E,G */
06469      , {      100,      -20,      100,      50,      10} /* AT,CG,C,E,T */
06470      }
06471      , {{      60,      -60,      60,      10,     -30} /* AT,CG,C,A,E */
06472      , {      60,      -60,      60,      10,     -30} /* AT,CG,C,A,A */
06473      , {      60,      -60,      60,      10,     -30} /* AT,CG,C,A,C */
06474      , {      60,      -60,      60,      10,     -30} /* AT,CG,C,A,G */
06475      , {      60,      -60,      60,      10,     -30} /* AT,CG,C,A,T */
06476      }
06477      , {{      100,      -20,      100,      50,      10} /* AT,CG,C,C,E */
06478      , {      100,      -20,      100,      50,      10} /* AT,CG,C,C,A */
06479      , {      100,      -20,      100,      50,      10} /* AT,CG,C,C,C */
06480      , {      100,      -20,      100,      50,      10} /* AT,CG,C,C,G */
06481      , {      100,      -20,      100,      50,      10} /* AT,CG,C,C,T */
06482      }
06483      , {{      50,      -70,      50,      0,     -40} /* AT,CG,C,G,E */
06484      , {      50,      -70,      50,      0,     -40} /* AT,CG,C,G,A */
06485      , {      50,      -70,      50,      0,     -40} /* AT,CG,C,G,C */
06486      , {      50,      -70,      50,      0,     -40} /* AT,CG,C,G,G */
06487      , {      50,      -70,      50,      0,     -40} /* AT,CG,C,G,T */
06488      }
06489      , {{      20,     -100,      20,     -30,     -70} /* AT,CG,C,T,E */
06490      , {      20,     -100,      20,     -30,     -70} /* AT,CG,C,T,A */
06491      , {      20,     -100,      20,     -30,     -70} /* AT,CG,C,T,C */
06492      , {      20,     -100,      20,     -30,     -70} /* AT,CG,C,T,G */
06493      , {      20,     -100,      20,     -30,     -70} /* AT,CG,C,T,T */
06494      }
06495      }
06496      , {{{      100,      -20,      100,      50,      10} /* AT,CG,G,E,E */
06497      , {      100,      -20,      100,      50,      10} /* AT,CG,G,E,A */
06498      , {      100,      -20,      100,      50,      10} /* AT,CG,G,E,C */
06499      , {      100,      -20,      100,      50,      10} /* AT,CG,G,E,G */
06500      , {      100,      -20,      100,      50,      10} /* AT,CG,G,E,T */
06501      }
06502      , {{      60,      -60,      60,      10,     -30} /* AT,CG,G,A,E */
06503      , {      60,      -60,      60,      10,     -30} /* AT,CG,G,A,A */
06504      , {      60,      -60,      60,      10,     -30} /* AT,CG,G,A,C */
06505      , {      60,      -60,      60,      10,     -30} /* AT,CG,G,A,G */
06506      , {      60,      -60,      60,      10,     -30} /* AT,CG,G,A,T */
06507      }
06508      , {{      100,      -20,      100,      50,      10} /* AT,CG,G,C,E */
06509      , {      100,      -20,      100,      50,      10} /* AT,CG,G,C,A */
06510      , {      100,      -20,      100,      50,      10} /* AT,CG,G,C,C */
06511      , {      100,      -20,      100,      50,      10} /* AT,CG,G,C,G */
06512      , {      100,      -20,      100,      50,      10} /* AT,CG,G,C,T */
06513      }
06514      , {{      50,      -70,      50,      0,     -40} /* AT,CG,G,G,E */
06515      , {      50,      -70,      50,      0,     -40} /* AT,CG,G,G,A */
06516      , {      50,      -70,      50,      0,     -40} /* AT,CG,G,G,C */
06517      , {      50,      -70,      50,      0,     -40} /* AT,CG,G,G,G */
06518      , {      50,      -70,      50,      0,     -40} /* AT,CG,G,G,T */
06519      }
06520      , {{      20,     -100,      20,     -30,     -70} /* AT,CG,G,T,E */
06521      , {      20,     -100,      20,     -30,     -70} /* AT,CG,G,T,A */
06522      , {      20,     -100,      20,     -30,     -70} /* AT,CG,G,T,C */
06523      , {      20,     -100,      20,     -30,     -70} /* AT,CG,G,T,G */

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06524      , {      20,   -100,    20,   -30,   -70} /* AT,CG,G,T,T */
06525      }
06526      }
06527      ,{{{      100,   -20,    100,    50,    10} /* AT,CG,T,E,E */
06528      , {      100,   -20,    100,    50,    10} /* AT,CG,T,E,A */
06529      , {      100,   -20,    100,    50,    10} /* AT,CG,T,E,C */
06530      , {      100,   -20,    100,    50,    10} /* AT,CG,T,E,G */
06531      , {      100,   -20,    100,    50,    10} /* AT,CG,T,E,T */
06532      }
06533      ,{{{      60,   -60,    60,    10,   -30} /* AT,CG,T,A,E */
06534      , {      60,   -60,    60,    10,   -30} /* AT,CG,T,A,A */
06535      , {      60,   -60,    60,    10,   -30} /* AT,CG,T,A,C */
06536      , {      60,   -60,    60,    10,   -30} /* AT,CG,T,A,G */
06537      , {      60,   -60,    60,    10,   -30} /* AT,CG,T,A,T */
06538      }
06539      ,{{{      100,   -20,    100,    50,    10} /* AT,CG,T,C,E */
06540      , {      100,   -20,    100,    50,    10} /* AT,CG,T,C,A */
06541      , {      100,   -20,    100,    50,    10} /* AT,CG,T,C,C */
06542      , {      100,   -20,    100,    50,    10} /* AT,CG,T,C,G */
06543      , {      100,   -20,    100,    50,    10} /* AT,CG,T,C,T */
06544      }
06545      ,{{{      50,   -70,    50,    0,   -40} /* AT,CG,T,G,E */
06546      , {      50,   -70,    50,    0,   -40} /* AT,CG,T,G,A */
06547      , {      50,   -70,    50,    0,   -40} /* AT,CG,T,G,C */
06548      , {      50,   -70,    50,    0,   -40} /* AT,CG,T,G,G */
06549      , {      50,   -70,    50,    0,   -40} /* AT,CG,T,G,T */
06550      }
06551      ,{{{      20,   -100,    20,   -30,   -70} /* AT,CG,T,T,E */
06552      , {      20,   -100,    20,   -30,   -70} /* AT,CG,T,T,A */
06553      , {      20,   -100,    20,   -30,   -70} /* AT,CG,T,T,C */
06554      , {      20,   -100,    20,   -30,   -70} /* AT,CG,T,T,G */
06555      , {      20,   -100,    20,   -30,   -70} /* AT,CG,T,T,T */
06556      }
06557      }
06558      }
06559      ,{{{      430,    310,    430,    380,    340} /* AT,GC,E,E,E */
06560      , {      430,    310,    430,    380,    340} /* AT,GC,E,E,A */
06561      , {      430,    310,    430,    380,    340} /* AT,GC,E,E,C */
06562      , {      430,    310,    430,    380,    340} /* AT,GC,E,E,G */
06563      , {      430,    310,    430,    380,    340} /* AT,GC,E,E,T */
06564      }
06565      ,{{{     -100,   -220,   -100,   -150,   -190} /* AT,GC,E,A,E */
06566      , {     -100,   -220,   -100,   -150,   -190} /* AT,GC,E,A,A */
06567      , {     -100,   -220,   -100,   -150,   -190} /* AT,GC,E,A,C */
06568      , {     -100,   -220,   -100,   -150,   -190} /* AT,GC,E,A,G */
06569      , {     -100,   -220,   -100,   -150,   -190} /* AT,GC,E,A,T */
06570      }
06571      ,{{{      190,     70,    190,    140,    100} /* AT,GC,E,C,E */
06572      , {      190,     70,    190,    140,    100} /* AT,GC,E,C,A */
06573      , {      190,     70,    190,    140,    100} /* AT,GC,E,C,C */
06574      , {      190,     70,    190,    140,    100} /* AT,GC,E,C,G */
06575      , {      190,     70,    190,    140,    100} /* AT,GC,E,C,T */
06576      }
06577      ,{{{      10,   -110,     10,   -40,   -80} /* AT,GC,E,G,E */
06578      , {      10,   -110,     10,   -40,   -80} /* AT,GC,E,G,A */
06579      , {      10,   -110,     10,   -40,   -80} /* AT,GC,E,G,C */
06580      , {      10,   -110,     10,   -40,   -80} /* AT,GC,E,G,G */
06581      , {      10,   -110,     10,   -40,   -80} /* AT,GC,E,G,T */
06582      }
06583      ,{{{      430,    310,    430,    380,    340} /* AT,GC,E,T,E */
06584      , {      430,    310,    430,    380,    340} /* AT,GC,E,T,A */
06585      , {      430,    310,    430,    380,    340} /* AT,GC,E,T,C */
06586      , {      430,    310,    430,    380,    340} /* AT,GC,E,T,G */
06587      , {      430,    310,    430,    380,    340} /* AT,GC,E,T,T */
06588      }
06589      }
06590      ,{{{      430,    310,    430,    380,    340} /* AT,GC,A,E,E */
06591      , {      430,    310,    430,    380,    340} /* AT,GC,A,E,A */
06592      , {      430,    310,    430,    380,    340} /* AT,GC,A,E,C */
06593      , {      430,    310,    430,    380,    340} /* AT,GC,A,E,G */
06594      , {      430,    310,    430,    380,    340} /* AT,GC,A,E,T */
06595      }
06596      ,{{{     -100,   -220,   -100,   -150,   -190} /* AT,GC,A,A,E */
06597      , {     -100,   -220,   -100,   -150,   -190} /* AT,GC,A,A,A */
06598      , {     -100,   -220,   -100,   -150,   -190} /* AT,GC,A,A,C */
06599      , {     -100,   -220,   -100,   -150,   -190} /* AT,GC,A,A,G */
06600      , {     -100,   -220,   -100,   -150,   -190} /* AT,GC,A,A,T */
06601      }
06602      ,{{{      190,     70,    190,    140,    100} /* AT,GC,A,C,E */
06603      , {      190,     70,    190,    140,    100} /* AT,GC,A,C,A */
06604      , {      190,     70,    190,    140,    100} /* AT,GC,A,C,C */
06605      , {      190,     70,    190,    140,    100} /* AT,GC,A,C,G */
06606      , {      190,     70,    190,    140,    100} /* AT,GC,A,C,T */
06607      }
06608      ,{{{      10,   -110,     10,   -40,   -80} /* AT,GC,A,G,E */
06609      , {      10,   -110,     10,   -40,   -80} /* AT,GC,A,G,A */
06610      , {      10,   -110,     10,   -40,   -80} /* AT,GC,A,G,C */

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06611      , {      10,    -110,     10,    -40,    -80} /* AT,GC,A,G,G */
06612      , {      10,    -110,     10,    -40,    -80} /* AT,GC,A,G,T */
06613      }
06614      , {{      430,     310,     430,     380,     340} /* AT,GC,A,T,E */
06615      , {      430,     310,     430,     380,     340} /* AT,GC,A,T,A */
06616      , {      430,     310,     430,     380,     340} /* AT,GC,A,T,C */
06617      , {      430,     310,     430,     380,     340} /* AT,GC,A,T,G */
06618      , {      430,     310,     430,     380,     340} /* AT,GC,A,T,T */
06619      }
06620      }
06621      , {{      430,     310,     430,     380,     340} /* AT,GC,C,E,E */
06622      , {      430,     310,     430,     380,     340} /* AT,GC,C,E,A */
06623      , {      430,     310,     430,     380,     340} /* AT,GC,C,E,C */
06624      , {      430,     310,     430,     380,     340} /* AT,GC,C,E,G */
06625      , {      430,     310,     430,     380,     340} /* AT,GC,C,E,T */
06626      }
06627      , {{    -100,    -220,    -100,    -150,    -190} /* AT,GC,C,A,E */
06628      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,C,A,A */
06629      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,C,A,C */
06630      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,C,A,G */
06631      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,C,A,T */
06632      }
06633      , {{      190,       70,     190,     140,     100} /* AT,GC,C,C,E */
06634      , {      190,       70,     190,     140,     100} /* AT,GC,C,C,A */
06635      , {      190,       70,     190,     140,     100} /* AT,GC,C,C,C */
06636      , {      190,       70,     190,     140,     100} /* AT,GC,C,C,G */
06637      , {      190,       70,     190,     140,     100} /* AT,GC,C,C,T */
06638      }
06639      , {{      10,    -110,     10,    -40,    -80} /* AT,GC,C,G,E */
06640      , {      10,    -110,     10,    -40,    -80} /* AT,GC,C,G,A */
06641      , {      10,    -110,     10,    -40,    -80} /* AT,GC,C,G,C */
06642      , {      10,    -110,     10,    -40,    -80} /* AT,GC,C,G,G */
06643      , {      10,    -110,     10,    -40,    -80} /* AT,GC,C,G,T */
06644      }
06645      , {{      430,     310,     430,     380,     340} /* AT,GC,C,T,E */
06646      , {      430,     310,     430,     380,     340} /* AT,GC,C,T,A */
06647      , {      430,     310,     430,     380,     340} /* AT,GC,C,T,C */
06648      , {      430,     310,     430,     380,     340} /* AT,GC,C,T,G */
06649      , {      430,     310,     430,     380,     340} /* AT,GC,C,T,T */
06650      }
06651      }
06652      , {{{      430,     310,     430,     380,     340} /* AT,GC,G,E,E */
06653      , {      430,     310,     430,     380,     340} /* AT,GC,G,E,A */
06654      , {      430,     310,     430,     380,     340} /* AT,GC,G,E,C */
06655      , {      430,     310,     430,     380,     340} /* AT,GC,G,E,G */
06656      , {      430,     310,     430,     380,     340} /* AT,GC,G,E,T */
06657      }
06658      , {{    -100,    -220,    -100,    -150,    -190} /* AT,GC,G,A,E */
06659      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,G,A,A */
06660      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,G,A,C */
06661      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,G,A,G */
06662      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,G,A,T */
06663      }
06664      , {{{      190,       70,     190,     140,     100} /* AT,GC,G,C,E */
06665      , {      190,       70,     190,     140,     100} /* AT,GC,G,C,A */
06666      , {      190,       70,     190,     140,     100} /* AT,GC,G,C,C */
06667      , {      190,       70,     190,     140,     100} /* AT,GC,G,C,G */
06668      , {      190,       70,     190,     140,     100} /* AT,GC,G,C,T */
06669      }
06670      , {{{      10,    -110,     10,    -40,    -80} /* AT,GC,G,G,E */
06671      , {      10,    -110,     10,    -40,    -80} /* AT,GC,G,G,A */
06672      , {      10,    -110,     10,    -40,    -80} /* AT,GC,G,G,C */
06673      , {      10,    -110,     10,    -40,    -80} /* AT,GC,G,G,G */
06674      , {      10,    -110,     10,    -40,    -80} /* AT,GC,G,G,T */
06675      }
06676      , {{{      430,     310,     430,     380,     340} /* AT,GC,G,T,E */
06677      , {      430,     310,     430,     380,     340} /* AT,GC,G,T,A */
06678      , {      430,     310,     430,     380,     340} /* AT,GC,G,T,C */
06679      , {      430,     310,     430,     380,     340} /* AT,GC,G,T,G */
06680      , {      430,     310,     430,     380,     340} /* AT,GC,G,T,T */
06681      }
06682      }
06683      , {{{      430,     310,     430,     380,     340} /* AT,GC,T,E,E */
06684      , {      430,     310,     430,     380,     340} /* AT,GC,T,E,A */
06685      , {      430,     310,     430,     380,     340} /* AT,GC,T,E,C */
06686      , {      430,     310,     430,     380,     340} /* AT,GC,T,E,G */
06687      , {      430,     310,     430,     380,     340} /* AT,GC,T,E,T */
06688      }
06689      , {{{    -100,    -220,    -100,    -150,    -190} /* AT,GC,T,A,E */
06690      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,T,A,A */
06691      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,T,A,C */
06692      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,T,A,G */
06693      , {    -100,    -220,    -100,    -150,    -190} /* AT,GC,T,A,T */
06694      }
06695      , {{{      190,       70,     190,     140,     100} /* AT,GC,T,C,E */
06696      , {      190,       70,     190,     140,     100} /* AT,GC,T,C,A */
06697      , {      190,       70,     190,     140,     100} /* AT,GC,T,C,C */

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06698 , { 190, 70, 190, 140, 100} /* AT,GC,T,C,G */
06699 , { 190, 70, 190, 140, 100} /* AT,GC,T,C,T */
06700 }
06701 , {{ 10, -110, 10, -40, -80} /* AT,GC,T,G,E */
06702 , { 10, -110, 10, -40, -80} /* AT,GC,T,G,A */
06703 , { 10, -110, 10, -40, -80} /* AT,GC,T,G,C */
06704 , { 10, -110, 10, -40, -80} /* AT,GC,T,G,G */
06705 , { 10, -110, 10, -40, -80} /* AT,GC,T,G,T */
06706 }
06707 , {{ 430, 310, 430, 380, 340} /* AT,GC,T,T,E */
06708 , { 430, 310, 430, 380, 340} /* AT,GC,T,T,A */
06709 , { 430, 310, 430, 380, 340} /* AT,GC,T,T,C */
06710 , { 430, 310, 430, 380, 340} /* AT,GC,T,T,G */
06711 , { 430, 310, 430, 380, 340} /* AT,GC,T,T,T */
06712 }
06713 }
06714 }
06715 , {{{ 750, 630, 750, 700, 660} /* AT,GT,E,E,E */
06716 , { 750, 630, 750, 700, 660} /* AT,GT,E,E,A */
06717 , { 750, 630, 750, 700, 660} /* AT,GT,E,E,C */
06718 , { 750, 630, 750, 700, 660} /* AT,GT,E,E,G */
06719 , { 750, 630, 750, 700, 660} /* AT,GT,E,E,T */
06720 }
06721 , {{ 220, 100, 220, 170, 130} /* AT,GT,E,A,E */
06722 , { 220, 100, 220, 170, 130} /* AT,GT,E,A,A */
06723 , { 220, 100, 220, 170, 130} /* AT,GT,E,A,C */
06724 , { 220, 100, 220, 170, 130} /* AT,GT,E,A,G */
06725 , { 220, 100, 220, 170, 130} /* AT,GT,E,A,T */
06726 }
06727 , {{ 510, 390, 510, 460, 420} /* AT,GT,E,C,E */
06728 , { 510, 390, 510, 460, 420} /* AT,GT,E,C,A */
06729 , { 510, 390, 510, 460, 420} /* AT,GT,E,C,C */
06730 , { 510, 390, 510, 460, 420} /* AT,GT,E,C,G */
06731 , { 510, 390, 510, 460, 420} /* AT,GT,E,C,T */
06732 }
06733 , {{ 330, 210, 330, 280, 240} /* AT,GT,E,G,E */
06734 , { 330, 210, 330, 280, 240} /* AT,GT,E,G,A */
06735 , { 330, 210, 330, 280, 240} /* AT,GT,E,G,C */
06736 , { 330, 210, 330, 280, 240} /* AT,GT,E,G,G */
06737 , { 330, 210, 330, 280, 240} /* AT,GT,E,G,T */
06738 }
06739 , {{ 750, 630, 750, 700, 660} /* AT,GT,E,T,E */
06740 , { 750, 630, 750, 700, 660} /* AT,GT,E,T,A */
06741 , { 750, 630, 750, 700, 660} /* AT,GT,E,T,C */
06742 , { 750, 630, 750, 700, 660} /* AT,GT,E,T,G */
06743 , { 750, 630, 750, 700, 660} /* AT,GT,E,T,T */
06744 }
06745 }
06746 , {{{ 750, 630, 750, 700, 660} /* AT,GT,A,E,E */
06747 , { 750, 630, 750, 700, 660} /* AT,GT,A,E,A */
06748 , { 750, 630, 750, 700, 660} /* AT,GT,A,E,C */
06749 , { 750, 630, 750, 700, 660} /* AT,GT,A,E,G */
06750 , { 750, 630, 750, 700, 660} /* AT,GT,A,E,T */
06751 }
06752 , {{ 220, 100, 220, 170, 130} /* AT,GT,A,A,E */
06753 , { 220, 100, 220, 170, 130} /* AT,GT,A,A,A */
06754 , { 220, 100, 220, 170, 130} /* AT,GT,A,A,C */
06755 , { 220, 100, 220, 170, 130} /* AT,GT,A,A,G */
06756 , { 220, 100, 220, 170, 130} /* AT,GT,A,A,T */
06757 }
06758 , {{ 510, 390, 510, 460, 420} /* AT,GT,A,C,E */
06759 , { 510, 390, 510, 460, 420} /* AT,GT,A,C,A */
06760 , { 510, 390, 510, 460, 420} /* AT,GT,A,C,C */
06761 , { 510, 390, 510, 460, 420} /* AT,GT,A,C,G */
06762 , { 510, 390, 510, 460, 420} /* AT,GT,A,C,T */
06763 }
06764 , {{ 330, 210, 330, 280, 240} /* AT,GT,A,G,E */
06765 , { 330, 210, 330, 280, 240} /* AT,GT,A,G,A */
06766 , { 330, 210, 330, 280, 240} /* AT,GT,A,G,C */
06767 , { 330, 210, 330, 280, 240} /* AT,GT,A,G,G */
06768 , { 330, 210, 330, 280, 240} /* AT,GT,A,G,T */
06769 }
06770 , {{ 750, 630, 750, 700, 660} /* AT,GT,A,T,E */
06771 , { 750, 630, 750, 700, 660} /* AT,GT,A,T,A */
06772 , { 750, 630, 750, 700, 660} /* AT,GT,A,T,C */
06773 , { 750, 630, 750, 700, 660} /* AT,GT,A,T,G */
06774 , { 750, 630, 750, 700, 660} /* AT,GT,A,T,T */
06775 }
06776 }
06777 , {{{ 750, 630, 750, 700, 660} /* AT,GT,C,E,E */
06778 , { 750, 630, 750, 700, 660} /* AT,GT,C,E,A */
06779 , { 750, 630, 750, 700, 660} /* AT,GT,C,E,C */
06780 , { 750, 630, 750, 700, 660} /* AT,GT,C,E,G */
06781 , { 750, 630, 750, 700, 660} /* AT,GT,C,E,T */
06782 }
06783 , {{ 220, 100, 220, 170, 130} /* AT,GT,C,A,E */
06784 , { 220, 100, 220, 170, 130} /* AT,GT,C,A,A */

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06785      , {      220,      100,      220,      170,      130} /* AT,GT,C,A,C */
06786      , {      220,      100,      220,      170,      130} /* AT,GT,C,A,G */
06787      , {      220,      100,      220,      170,      130} /* AT,GT,C,A,T */
06788      }
06789      , {{      510,      390,      510,      460,      420} /* AT,GT,C,C,E */
06790      , {      510,      390,      510,      460,      420} /* AT,GT,C,C,A */
06791      , {      510,      390,      510,      460,      420} /* AT,GT,C,C,C */
06792      , {      510,      390,      510,      460,      420} /* AT,GT,C,C,G */
06793      , {      510,      390,      510,      460,      420} /* AT,GT,C,C,T */
06794      }
06795      , {{      330,      210,      330,      280,      240} /* AT,GT,C,G,E */
06796      , {      330,      210,      330,      280,      240} /* AT,GT,C,G,A */
06797      , {      330,      210,      330,      280,      240} /* AT,GT,C,G,C */
06798      , {      330,      210,      330,      280,      240} /* AT,GT,C,G,G */
06799      , {      330,      210,      330,      280,      240} /* AT,GT,C,G,T */
06800      }
06801      , {{      750,      630,      750,      700,      660} /* AT,GT,C,T,E */
06802      , {      750,      630,      750,      700,      660} /* AT,GT,C,T,A */
06803      , {      750,      630,      750,      700,      660} /* AT,GT,C,T,C */
06804      , {      750,      630,      750,      700,      660} /* AT,GT,C,T,G */
06805      , {      750,      630,      750,      700,      660} /* AT,GT,C,T,T */
06806      }
06807      }
06808      , {{{      750,      630,      750,      700,      660} /* AT,GT,G,E,E */
06809      , {      750,      630,      750,      700,      660} /* AT,GT,G,E,A */
06810      , {      750,      630,      750,      700,      660} /* AT,GT,G,E,C */
06811      , {      750,      630,      750,      700,      660} /* AT,GT,G,E,G */
06812      , {      750,      630,      750,      700,      660} /* AT,GT,G,E,T */
06813      }
06814      , {{      220,      100,      220,      170,      130} /* AT,GT,G,A,E */
06815      , {      220,      100,      220,      170,      130} /* AT,GT,G,A,A */
06816      , {      220,      100,      220,      170,      130} /* AT,GT,G,A,C */
06817      , {      220,      100,      220,      170,      130} /* AT,GT,G,A,G */
06818      , {      220,      100,      220,      170,      130} /* AT,GT,G,A,T */
06819      }
06820      , {{      510,      390,      510,      460,      420} /* AT,GT,G,C,E */
06821      , {      510,      390,      510,      460,      420} /* AT,GT,G,C,A */
06822      , {      510,      390,      510,      460,      420} /* AT,GT,G,C,C */
06823      , {      510,      390,      510,      460,      420} /* AT,GT,G,C,G */
06824      , {      510,      390,      510,      460,      420} /* AT,GT,G,C,T */
06825      }
06826      , {{      330,      210,      330,      280,      240} /* AT,GT,G,G,E */
06827      , {      330,      210,      330,      280,      240} /* AT,GT,G,G,A */
06828      , {      330,      210,      330,      280,      240} /* AT,GT,G,G,C */
06829      , {      330,      210,      330,      280,      240} /* AT,GT,G,G,G */
06830      , {      330,      210,      330,      280,      240} /* AT,GT,G,G,T */
06831      }
06832      , {{{      750,      630,      750,      700,      660} /* AT,GT,G,T,E */
06833      , {      750,      630,      750,      700,      660} /* AT,GT,G,T,A */
06834      , {      750,      630,      750,      700,      660} /* AT,GT,G,T,C */
06835      , {      750,      630,      750,      700,      660} /* AT,GT,G,T,G */
06836      , {      750,      630,      750,      700,      660} /* AT,GT,G,T,T */
06837      }
06838      }
06839      , {{{      750,      630,      750,      700,      660} /* AT,GT,T,E,E */
06840      , {      750,      630,      750,      700,      660} /* AT,GT,T,E,A */
06841      , {      750,      630,      750,      700,      660} /* AT,GT,T,E,C */
06842      , {      750,      630,      750,      700,      660} /* AT,GT,T,E,G */
06843      , {      750,      630,      750,      700,      660} /* AT,GT,T,E,T */
06844      }
06845      , {{      220,      100,      220,      170,      130} /* AT,GT,T,A,E */
06846      , {      220,      100,      220,      170,      130} /* AT,GT,T,A,A */
06847      , {      220,      100,      220,      170,      130} /* AT,GT,T,A,C */
06848      , {      220,      100,      220,      170,      130} /* AT,GT,T,A,G */
06849      , {      220,      100,      220,      170,      130} /* AT,GT,T,A,T */
06850      }
06851      , {{      510,      390,      510,      460,      420} /* AT,GT,T,C,E */
06852      , {      510,      390,      510,      460,      420} /* AT,GT,T,C,A */
06853      , {      510,      390,      510,      460,      420} /* AT,GT,T,C,C */
06854      , {      510,      390,      510,      460,      420} /* AT,GT,T,C,G */
06855      , {      510,      390,      510,      460,      420} /* AT,GT,T,C,T */
06856      }
06857      , {{      330,      210,      330,      280,      240} /* AT,GT,T,G,E */
06858      , {      330,      210,      330,      280,      240} /* AT,GT,T,G,A */
06859      , {      330,      210,      330,      280,      240} /* AT,GT,T,G,C */
06860      , {      330,      210,      330,      280,      240} /* AT,GT,T,G,G */
06861      , {      330,      210,      330,      280,      240} /* AT,GT,T,G,T */
06862      }
06863      , {{{      750,      630,      750,      700,      660} /* AT,GT,T,T,E */
06864      , {      750,      630,      750,      700,      660} /* AT,GT,T,T,A */
06865      , {      750,      630,      750,      700,      660} /* AT,GT,T,T,C */
06866      , {      750,      630,      750,      700,      660} /* AT,GT,T,T,G */
06867      , {      750,      630,      750,      700,      660} /* AT,GT,T,T,T */
06868      }
06869      }
06870      }
06871      , {{{      780,      660,      780,      730,      690} /* AT,TG,E,E,E */

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06872      , {      780,      660,      780,      730,      690} /* AT,TG,E,E,A */
06873      , {      780,      660,      780,      730,      690} /* AT,TG,E,E,C */
06874      , {      780,      660,      780,      730,      690} /* AT,TG,E,E,G */
06875      , {      780,      660,      780,      730,      690} /* AT,TG,E,E,T */
06876      }
06877      , { {      750,      630,      750,      700,      660} /* AT,TG,E,A,E */
06878      , {      750,      630,      750,      700,      660} /* AT,TG,E,A,A */
06879      , {      750,      630,      750,      700,      660} /* AT,TG,E,A,C */
06880      , {      750,      630,      750,      700,      660} /* AT,TG,E,A,G */
06881      , {      750,      630,      750,      700,      660} /* AT,TG,E,A,T */
06882      }
06883      , { {      780,      660,      780,      730,      690} /* AT,TG,E,C,E */
06884      , {      780,      660,      780,      730,      690} /* AT,TG,E,C,A */
06885      , {      780,      660,      780,      730,      690} /* AT,TG,E,C,C */
06886      , {      780,      660,      780,      730,      690} /* AT,TG,E,C,G */
06887      , {      780,      660,      780,      730,      690} /* AT,TG,E,C,T */
06888      }
06889      , { {      590,      470,      590,      540,      500} /* AT,TG,E,G,E */
06890      , {      590,      470,      590,      540,      500} /* AT,TG,E,G,A */
06891      , {      590,      470,      590,      540,      500} /* AT,TG,E,G,C */
06892      , {      590,      470,      590,      540,      500} /* AT,TG,E,G,G */
06893      , {      590,      470,      590,      540,      500} /* AT,TG,E,G,T */
06894      }
06895      , { {      -60,     -180,      -60,     -110,     -150} /* AT,TG,E,T,E */
06896      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,E,T,A */
06897      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,E,T,C */
06898      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,E,T,G */
06899      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,E,T,T */
06900      }
06901      }
06902      , { { {      780,      660,      780,      730,      690} /* AT,TG,A,E,E */
06903      , {      780,      660,      780,      730,      690} /* AT,TG,A,E,A */
06904      , {      780,      660,      780,      730,      690} /* AT,TG,A,E,C */
06905      , {      780,      660,      780,      730,      690} /* AT,TG,A,E,G */
06906      , {      780,      660,      780,      730,      690} /* AT,TG,A,E,T */
06907      }
06908      , { {      750,      630,      750,      700,      660} /* AT,TG,A,A,E */
06909      , {      750,      630,      750,      700,      660} /* AT,TG,A,A,A */
06910      , {      750,      630,      750,      700,      660} /* AT,TG,A,A,C */
06911      , {      750,      630,      750,      700,      660} /* AT,TG,A,A,G */
06912      , {      750,      630,      750,      700,      660} /* AT,TG,A,A,T */
06913      }
06914      , { {      780,      660,      780,      730,      690} /* AT,TG,A,C,E */
06915      , {      780,      660,      780,      730,      690} /* AT,TG,A,C,A */
06916      , {      780,      660,      780,      730,      690} /* AT,TG,A,C,C */
06917      , {      780,      660,      780,      730,      690} /* AT,TG,A,C,G */
06918      , {      780,      660,      780,      730,      690} /* AT,TG,A,C,T */
06919      }
06920      , { {      590,      470,      590,      540,      500} /* AT,TG,A,G,E */
06921      , {      590,      470,      590,      540,      500} /* AT,TG,A,G,A */
06922      , {      590,      470,      590,      540,      500} /* AT,TG,A,G,C */
06923      , {      590,      470,      590,      540,      500} /* AT,TG,A,G,G */
06924      , {      590,      470,      590,      540,      500} /* AT,TG,A,G,T */
06925      }
06926      , { {      -60,     -180,      -60,     -110,     -150} /* AT,TG,A,T,E */
06927      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,A,T,A */
06928      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,A,T,C */
06929      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,A,T,G */
06930      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,A,T,T */
06931      }
06932      }
06933      , { { {      780,      660,      780,      730,      690} /* AT,TG,C,E,E */
06934      , {      780,      660,      780,      730,      690} /* AT,TG,C,E,A */
06935      , {      780,      660,      780,      730,      690} /* AT,TG,C,E,C */
06936      , {      780,      660,      780,      730,      690} /* AT,TG,C,E,G */
06937      , {      780,      660,      780,      730,      690} /* AT,TG,C,E,T */
06938      }
06939      , { {      750,      630,      750,      700,      660} /* AT,TG,C,A,E */
06940      , {      750,      630,      750,      700,      660} /* AT,TG,C,A,A */
06941      , {      750,      630,      750,      700,      660} /* AT,TG,C,A,C */
06942      , {      750,      630,      750,      700,      660} /* AT,TG,C,A,G */
06943      , {      750,      630,      750,      700,      660} /* AT,TG,C,A,T */
06944      }
06945      , { {      780,      660,      780,      730,      690} /* AT,TG,C,C,E */
06946      , {      780,      660,      780,      730,      690} /* AT,TG,C,C,A */
06947      , {      780,      660,      780,      730,      690} /* AT,TG,C,C,C */
06948      , {      780,      660,      780,      730,      690} /* AT,TG,C,C,G */
06949      , {      780,      660,      780,      730,      690} /* AT,TG,C,C,T */
06950      }
06951      , { {      590,      470,      590,      540,      500} /* AT,TG,C,G,E */
06952      , {      590,      470,      590,      540,      500} /* AT,TG,C,G,A */
06953      , {      590,      470,      590,      540,      500} /* AT,TG,C,G,C */
06954      , {      590,      470,      590,      540,      500} /* AT,TG,C,G,G */
06955      , {      590,      470,      590,      540,      500} /* AT,TG,C,G,T */
06956      }
06957      , { {      -60,     -180,      -60,     -110,     -150} /* AT,TG,C,T,E */
06958      , {      -60,     -180,      -60,     -110,     -150} /* AT,TG,C,T,A */

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06959 , { -60, -180, -60, -110, -150} /* AT,TG,C,T,C */
06960 , { -60, -180, -60, -110, -150} /* AT,TG,C,T,G */
06961 , { -60, -180, -60, -110, -150} /* AT,TG,C,T,T */
06962 }
06963 }
06964 , {{{ 780, 660, 780, 730, 690} /* AT,TG,G,E,E */
06965 , { 780, 660, 780, 730, 690} /* AT,TG,G,E,A */
06966 , { 780, 660, 780, 730, 690} /* AT,TG,G,E,C */
06967 , { 780, 660, 780, 730, 690} /* AT,TG,G,E,G */
06968 , { 780, 660, 780, 730, 690} /* AT,TG,G,E,T */
06969 }
06970 , {{{ 750, 630, 750, 700, 660} /* AT,TG,G,A,E */
06971 , { 750, 630, 750, 700, 660} /* AT,TG,G,A,A */
06972 , { 750, 630, 750, 700, 660} /* AT,TG,G,A,C */
06973 , { 750, 630, 750, 700, 660} /* AT,TG,G,A,G */
06974 , { 750, 630, 750, 700, 660} /* AT,TG,G,A,T */
06975 }
06976 , {{{ 780, 660, 780, 730, 690} /* AT,TG,G,C,E */
06977 , { 780, 660, 780, 730, 690} /* AT,TG,G,C,A */
06978 , { 780, 660, 780, 730, 690} /* AT,TG,G,C,C */
06979 , { 780, 660, 780, 730, 690} /* AT,TG,G,C,G */
06980 , { 780, 660, 780, 730, 690} /* AT,TG,G,C,T */
06981 }
06982 , {{{ 590, 470, 590, 540, 500} /* AT,TG,G,G,E */
06983 , { 590, 470, 590, 540, 500} /* AT,TG,G,G,A */
06984 , { 590, 470, 590, 540, 500} /* AT,TG,G,G,C */
06985 , { 590, 470, 590, 540, 500} /* AT,TG,G,G,G */
06986 , { 590, 470, 590, 540, 500} /* AT,TG,G,G,T */
06987 }
06988 , {{{ -60, -180, -60, -110, -150} /* AT,TG,G,T,E */
06989 , { -60, -180, -60, -110, -150} /* AT,TG,G,T,A */
06990 , { -60, -180, -60, -110, -150} /* AT,TG,G,T,C */
06991 , { -60, -180, -60, -110, -150} /* AT,TG,G,T,G */
06992 , { -60, -180, -60, -110, -150} /* AT,TG,G,T,T */
06993 }
06994 }
06995 , {{{ 780, 660, 780, 730, 690} /* AT,TG,T,E,E */
06996 , { 780, 660, 780, 730, 690} /* AT,TG,T,E,A */
06997 , { 780, 660, 780, 730, 690} /* AT,TG,T,E,C */
06998 , { 780, 660, 780, 730, 690} /* AT,TG,T,E,G */
06999 , { 780, 660, 780, 730, 690} /* AT,TG,T,E,T */
07000 }
07001 , {{{ 750, 630, 750, 700, 660} /* AT,TG,T,A,E */
07002 , { 750, 630, 750, 700, 660} /* AT,TG,T,A,A */
07003 , { 750, 630, 750, 700, 660} /* AT,TG,T,A,C */
07004 , { 750, 630, 750, 700, 660} /* AT,TG,T,A,G */
07005 , { 750, 630, 750, 700, 660} /* AT,TG,T,A,T */
07006 }
07007 , {{{ 780, 660, 780, 730, 690} /* AT,TG,T,C,E */
07008 , { 780, 660, 780, 730, 690} /* AT,TG,T,C,A */
07009 , { 780, 660, 780, 730, 690} /* AT,TG,T,C,C */
07010 , { 780, 660, 780, 730, 690} /* AT,TG,T,C,G */
07011 , { 780, 660, 780, 730, 690} /* AT,TG,T,C,T */
07012 }
07013 , {{{ 590, 470, 590, 540, 500} /* AT,TG,T,G,E */
07014 , { 590, 470, 590, 540, 500} /* AT,TG,T,G,A */
07015 , { 590, 470, 590, 540, 500} /* AT,TG,T,G,C */
07016 , { 590, 470, 590, 540, 500} /* AT,TG,T,G,G */
07017 , { 590, 470, 590, 540, 500} /* AT,TG,T,G,T */
07018 }
07019 , {{{ -60, -180, -60, -110, -150} /* AT,TG,T,T,E */
07020 , { -60, -180, -60, -110, -150} /* AT,TG,T,T,A */
07021 , { -60, -180, -60, -110, -150} /* AT,TG,T,T,C */
07022 , { -60, -180, -60, -110, -150} /* AT,TG,T,T,G */
07023 , { -60, -180, -60, -110, -150} /* AT,TG,T,T,T */
07024 }
07025 }
07026 }
07027 , {{{ 1040, 920, 1040, 990, 950} /* AT,AT,E,E,E */
07028 , { 1040, 920, 1040, 990, 950} /* AT,AT,E,E,A */
07029 , { 1040, 920, 1040, 990, 950} /* AT,AT,E,E,C */
07030 , { 1040, 920, 1040, 990, 950} /* AT,AT,E,E,G */
07031 , { 1040, 920, 1040, 990, 950} /* AT,AT,E,E,T */
07032 }
07033 , {{{ 920, 800, 920, 870, 830} /* AT,AT,E,A,E */
07034 , { 920, 800, 920, 870, 830} /* AT,AT,E,A,A */
07035 , { 920, 800, 920, 870, 830} /* AT,AT,E,A,C */
07036 , { 920, 800, 920, 870, 830} /* AT,AT,E,A,G */
07037 , { 920, 800, 920, 870, 830} /* AT,AT,E,A,T */
07038 }
07039 , {{{ 1040, 920, 1040, 990, 950} /* AT,AT,E,C,E */
07040 , { 1040, 920, 1040, 990, 950} /* AT,AT,E,C,A */
07041 , { 1040, 920, 1040, 990, 950} /* AT,AT,E,C,C */
07042 , { 1040, 920, 1040, 990, 950} /* AT,AT,E,C,G */
07043 , { 1040, 920, 1040, 990, 950} /* AT,AT,E,C,T */
07044 }
07045 , {{{ 990, 870, 990, 940, 900} /* AT,AT,E,G,E */

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07046 , { 990, 870, 990, 940, 900} /* AT,AT,E,G,A */
07047 , { 990, 870, 990, 940, 900} /* AT,AT,E,G,C */
07048 , { 990, 870, 990, 940, 900} /* AT,AT,E,G,G */
07049 , { 990, 870, 990, 940, 900} /* AT,AT,E,G,T */
07050 }
07051 , { { 950, 830, 950, 900, 860} /* AT,AT,E,T,E */
07052 , { 950, 830, 950, 900, 860} /* AT,AT,E,T,A */
07053 , { 950, 830, 950, 900, 860} /* AT,AT,E,T,C */
07054 , { 950, 830, 950, 900, 860} /* AT,AT,E,T,G */
07055 , { 950, 830, 950, 900, 860} /* AT,AT,E,T,T */
07056 }
07057 }
07058 , { { { 1040, 920, 1040, 990, 950} /* AT,AT,A,E,E */
07059 , { 1040, 920, 1040, 990, 950} /* AT,AT,A,E,A */
07060 , { 1040, 920, 1040, 990, 950} /* AT,AT,A,E,C */
07061 , { 1040, 920, 1040, 990, 950} /* AT,AT,A,E,G */
07062 , { 1040, 920, 1040, 990, 950} /* AT,AT,A,E,T */
07063 }
07064 , { { 920, 800, 920, 870, 830} /* AT,AT,A,A,E */
07065 , { 920, 800, 920, 870, 830} /* AT,AT,A,A,A */
07066 , { 920, 800, 920, 870, 830} /* AT,AT,A,A,C */
07067 , { 920, 800, 920, 870, 830} /* AT,AT,A,A,G */
07068 , { 920, 800, 920, 870, 830} /* AT,AT,A,A,T */
07069 }
07070 , { { 1040, 920, 1040, 990, 950} /* AT,AT,A,C,E */
07071 , { 1040, 920, 1040, 990, 950} /* AT,AT,A,C,A */
07072 , { 1040, 920, 1040, 990, 950} /* AT,AT,A,C,C */
07073 , { 1040, 920, 1040, 990, 950} /* AT,AT,A,C,G */
07074 , { 1040, 920, 1040, 990, 950} /* AT,AT,A,C,T */
07075 }
07076 , { { 990, 870, 990, 940, 900} /* AT,AT,A,G,E */
07077 , { 990, 870, 990, 940, 900} /* AT,AT,A,G,A */
07078 , { 990, 870, 990, 940, 900} /* AT,AT,A,G,C */
07079 , { 990, 870, 990, 940, 900} /* AT,AT,A,G,G */
07080 , { 990, 870, 990, 940, 900} /* AT,AT,A,G,T */
07081 }
07082 , { { 950, 830, 950, 900, 860} /* AT,AT,A,T,E */
07083 , { 950, 830, 950, 900, 860} /* AT,AT,A,T,A */
07084 , { 950, 830, 950, 900, 860} /* AT,AT,A,T,C */
07085 , { 950, 830, 950, 900, 860} /* AT,AT,A,T,G */
07086 , { 950, 830, 950, 900, 860} /* AT,AT,A,T,T */
07087 }
07088 }
07089 , { { { 1040, 920, 1040, 990, 950} /* AT,AT,C,E,E */
07090 , { 1040, 920, 1040, 990, 950} /* AT,AT,C,E,A */
07091 , { 1040, 920, 1040, 990, 950} /* AT,AT,C,E,C */
07092 , { 1040, 920, 1040, 990, 950} /* AT,AT,C,E,G */
07093 , { 1040, 920, 1040, 990, 950} /* AT,AT,C,E,T */
07094 }
07095 , { { 920, 800, 920, 870, 830} /* AT,AT,C,A,E */
07096 , { 920, 800, 920, 870, 830} /* AT,AT,C,A,A */
07097 , { 920, 800, 920, 870, 830} /* AT,AT,C,A,C */
07098 , { 920, 800, 920, 870, 830} /* AT,AT,C,A,G */
07099 , { 920, 800, 920, 870, 830} /* AT,AT,C,A,T */
07100 }
07101 , { { 1040, 920, 1040, 990, 950} /* AT,AT,C,C,E */
07102 , { 1040, 920, 1040, 990, 950} /* AT,AT,C,C,A */
07103 , { 1040, 920, 1040, 990, 950} /* AT,AT,C,C,C */
07104 , { 1040, 920, 1040, 990, 950} /* AT,AT,C,C,G */
07105 , { 1040, 920, 1040, 990, 950} /* AT,AT,C,C,T */
07106 }
07107 , { { 990, 870, 990, 940, 900} /* AT,AT,C,G,E */
07108 , { 990, 870, 990, 940, 900} /* AT,AT,C,G,A */
07109 , { 990, 870, 990, 940, 900} /* AT,AT,C,G,C */
07110 , { 990, 870, 990, 940, 900} /* AT,AT,C,G,G */
07111 , { 990, 870, 990, 940, 900} /* AT,AT,C,G,T */
07112 }
07113 , { { 950, 830, 950, 900, 860} /* AT,AT,C,T,E */
07114 , { 950, 830, 950, 900, 860} /* AT,AT,C,T,A */
07115 , { 950, 830, 950, 900, 860} /* AT,AT,C,T,C */
07116 , { 950, 830, 950, 900, 860} /* AT,AT,C,T,G */
07117 , { 950, 830, 950, 900, 860} /* AT,AT,C,T,T */
07118 }
07119 }
07120 , { { { 1040, 920, 1040, 990, 950} /* AT,AT,G,E,E */
07121 , { 1040, 920, 1040, 990, 950} /* AT,AT,G,E,A */
07122 , { 1040, 920, 1040, 990, 950} /* AT,AT,G,E,C */
07123 , { 1040, 920, 1040, 990, 950} /* AT,AT,G,E,G */
07124 , { 1040, 920, 1040, 990, 950} /* AT,AT,G,E,T */
07125 }
07126 , { { 920, 800, 920, 870, 830} /* AT,AT,G,A,E */
07127 , { 920, 800, 920, 870, 830} /* AT,AT,G,A,A */
07128 , { 920, 800, 920, 870, 830} /* AT,AT,G,A,C */
07129 , { 920, 800, 920, 870, 830} /* AT,AT,G,A,G */
07130 , { 920, 800, 920, 870, 830} /* AT,AT,G,A,T */
07131 }
07132 , { { 1040, 920, 1040, 990, 950} /* AT,AT,G,C,E */
```

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07133      , { 1040, 920, 1040, 990, 950} /* AT,AT,G,C,A */
07134      , { 1040, 920, 1040, 990, 950} /* AT,AT,G,C,C */
07135      , { 1040, 920, 1040, 990, 950} /* AT,AT,G,C,G */
07136      , { 1040, 920, 1040, 990, 950} /* AT,AT,G,C,T */
07137      }
07138      , { { 990, 870, 990, 940, 900} /* AT,AT,G,G,E */
07139      , { 990, 870, 990, 940, 900} /* AT,AT,G,G,A */
07140      , { 990, 870, 990, 940, 900} /* AT,AT,G,G,C */
07141      , { 990, 870, 990, 940, 900} /* AT,AT,G,G,G */
07142      , { 990, 870, 990, 940, 900} /* AT,AT,G,G,T */
07143      }
07144      , { { 950, 830, 950, 900, 860} /* AT,AT,G,T,E */
07145      , { 950, 830, 950, 900, 860} /* AT,AT,G,T,A */
07146      , { 950, 830, 950, 900, 860} /* AT,AT,G,T,C */
07147      , { 950, 830, 950, 900, 860} /* AT,AT,G,T,G */
07148      , { 950, 830, 950, 900, 860} /* AT,AT,G,T,T */
07149      }
07150      }
07151      , { { { 1040, 920, 1040, 990, 950} /* AT,AT,T,E,E */
07152      , { 1040, 920, 1040, 990, 950} /* AT,AT,T,E,A */
07153      , { 1040, 920, 1040, 990, 950} /* AT,AT,T,E,C */
07154      , { 1040, 920, 1040, 990, 950} /* AT,AT,T,E,G */
07155      , { 1040, 920, 1040, 990, 950} /* AT,AT,T,E,T */
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07157      , { { 920, 800, 920, 870, 830} /* AT,AT,T,A,E */
07158      , { 920, 800, 920, 870, 830} /* AT,AT,T,A,A */
07159      , { 920, 800, 920, 870, 830} /* AT,AT,T,A,C */
07160      , { 920, 800, 920, 870, 830} /* AT,AT,T,A,G */
07161      , { 920, 800, 920, 870, 830} /* AT,AT,T,A,T */
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07164      , { 1040, 920, 1040, 990, 950} /* AT,AT,T,C,A */
07165      , { 1040, 920, 1040, 990, 950} /* AT,AT,T,C,C */
07166      , { 1040, 920, 1040, 990, 950} /* AT,AT,T,C,G */
07167      , { 1040, 920, 1040, 990, 950} /* AT,AT,T,C,T */
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07169      , { { 990, 870, 990, 940, 900} /* AT,AT,T,G,E */
07170      , { 990, 870, 990, 940, 900} /* AT,AT,T,G,A */
07171      , { 990, 870, 990, 940, 900} /* AT,AT,T,G,C */
07172      , { 990, 870, 990, 940, 900} /* AT,AT,T,G,G */
07173      , { 990, 870, 990, 940, 900} /* AT,AT,T,G,T */
07174      }
07175      , { { 950, 830, 950, 900, 860} /* AT,AT,T,T,E */
07176      , { 950, 830, 950, 900, 860} /* AT,AT,T,T,A */
07177      , { 950, 830, 950, 900, 860} /* AT,AT,T,T,C */
07178      , { 950, 830, 950, 900, 860} /* AT,AT,T,T,G */
07179      , { 950, 830, 950, 900, 860} /* AT,AT,T,T,T */
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07182      }
07183      , { { { 780, 660, 780, 730, 690} /* AT,TA,E,E,E */
07184      , { 780, 660, 780, 730, 690} /* AT,TA,E,E,A */
07185      , { 780, 660, 780, 730, 690} /* AT,TA,E,E,C */
07186      , { 780, 660, 780, 730, 690} /* AT,TA,E,E,G */
07187      , { 780, 660, 780, 730, 690} /* AT,TA,E,E,T */
07188      }
07189      , { { 750, 630, 750, 700, 660} /* AT,TA,E,A,E */
07190      , { 750, 630, 750, 700, 660} /* AT,TA,E,A,A */
07191      , { 750, 630, 750, 700, 660} /* AT,TA,E,A,C */
07192      , { 750, 630, 750, 700, 660} /* AT,TA,E,A,G */
07193      , { 750, 630, 750, 700, 660} /* AT,TA,E,A,T */
07194      }
07195      , { { 780, 660, 780, 730, 690} /* AT,TA,E,C,E */
07196      , { 780, 660, 780, 730, 690} /* AT,TA,E,C,A */
07197      , { 780, 660, 780, 730, 690} /* AT,TA,E,C,C */
07198      , { 780, 660, 780, 730, 690} /* AT,TA,E,C,G */
07199      , { 780, 660, 780, 730, 690} /* AT,TA,E,C,T */
07200      }
07201      , { { 590, 470, 590, 540, 500} /* AT,TA,E,G,E */
07202      , { 590, 470, 590, 540, 500} /* AT,TA,E,G,A */
07203      , { 590, 470, 590, 540, 500} /* AT,TA,E,G,C */
07204      , { 590, 470, 590, 540, 500} /* AT,TA,E,G,G */
07205      , { 590, 470, 590, 540, 500} /* AT,TA,E,G,T */
07206      }
07207      , { { -60, -180, -60, -110, -150} /* AT,TA,E,T,E */
07208      , { -60, -180, -60, -110, -150} /* AT,TA,E,T,A */
07209      , { -60, -180, -60, -110, -150} /* AT,TA,E,T,C */
07210      , { -60, -180, -60, -110, -150} /* AT,TA,E,T,G */
07211      , { -60, -180, -60, -110, -150} /* AT,TA,E,T,T */
07212      }
07213      }
07214      , { { { 780, 660, 780, 730, 690} /* AT,TA,A,E,E */
07215      , { 780, 660, 780, 730, 690} /* AT,TA,A,E,A */
07216      , { 780, 660, 780, 730, 690} /* AT,TA,A,E,C */
07217      , { 780, 660, 780, 730, 690} /* AT,TA,A,E,G */
07218      , { 780, 660, 780, 730, 690} /* AT,TA,A,E,T */
07219      }

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07223 ,{ 750, 630, 750, 700, 660} /* AT,TA,A,A,G */
07224 ,{ 750, 630, 750, 700, 660} /* AT,TA,A,A,T */
07225 }
07226 ,{{ 780, 660, 780, 730, 690} /* AT,TA,A,C,E */
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07228 ,{ 780, 660, 780, 730, 690} /* AT,TA,A,C,C */
07229 ,{ 780, 660, 780, 730, 690} /* AT,TA,A,C,G */
07230 ,{ 780, 660, 780, 730, 690} /* AT,TA,A,C,T */
07231 }
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07233 ,{ 590, 470, 590, 540, 500} /* AT,TA,A,G,A */
07234 ,{ 590, 470, 590, 540, 500} /* AT,TA,A,G,C */
07235 ,{ 590, 470, 590, 540, 500} /* AT,TA,A,G,G */
07236 ,{ 590, 470, 590, 540, 500} /* AT,TA,A,G,T */
07237 }
07238 ,{{ -60, -180, -60, -110, -150} /* AT,TA,A,T,E */
07239 ,{ -60, -180, -60, -110, -150} /* AT,TA,A,T,A */
07240 ,{ -60, -180, -60, -110, -150} /* AT,TA,A,T,C */
07241 ,{ -60, -180, -60, -110, -150} /* AT,TA,A,T,G */
07242 ,{ -60, -180, -60, -110, -150} /* AT,TA,A,T,T */
07243 }
07244 }
07245 ,{{{ 780, 660, 780, 730, 690} /* AT,TA,C,E,E */
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07249 ,{ 780, 660, 780, 730, 690} /* AT,TA,C,E,T */
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07254 ,{ 750, 630, 750, 700, 660} /* AT,TA,C,A,G */
07255 ,{ 750, 630, 750, 700, 660} /* AT,TA,C,A,T */
07256 }
07257 ,{{ 780, 660, 780, 730, 690} /* AT,TA,C,C,E */
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07259 ,{ 780, 660, 780, 730, 690} /* AT,TA,C,C,C */
07260 ,{ 780, 660, 780, 730, 690} /* AT,TA,C,C,G */
07261 ,{ 780, 660, 780, 730, 690} /* AT,TA,C,C,T */
07262 }
07263 ,{{ 590, 470, 590, 540, 500} /* AT,TA,C,G,E */
07264 ,{ 590, 470, 590, 540, 500} /* AT,TA,C,G,A */
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07266 ,{ 590, 470, 590, 540, 500} /* AT,TA,C,G,G */
07267 ,{ 590, 470, 590, 540, 500} /* AT,TA,C,G,T */
07268 }
07269 ,{{ -60, -180, -60, -110, -150} /* AT,TA,C,T,E */
07270 ,{ -60, -180, -60, -110, -150} /* AT,TA,C,T,A */
07271 ,{ -60, -180, -60, -110, -150} /* AT,TA,C,T,C */
07272 ,{ -60, -180, -60, -110, -150} /* AT,TA,C,T,G */
07273 ,{ -60, -180, -60, -110, -150} /* AT,TA,C,T,T */
07274 }
07275 }
07276 ,{{{ 780, 660, 780, 730, 690} /* AT,TA,G,E,E */
07277 ,{ 780, 660, 780, 730, 690} /* AT,TA,G,E,A */
07278 ,{ 780, 660, 780, 730, 690} /* AT,TA,G,E,C */
07279 ,{ 780, 660, 780, 730, 690} /* AT,TA,G,E,G */
07280 ,{ 780, 660, 780, 730, 690} /* AT,TA,G,E,T */
07281 }
07282 ,{{ 750, 630, 750, 700, 660} /* AT,TA,G,A,E */
07283 ,{ 750, 630, 750, 700, 660} /* AT,TA,G,A,A */
07284 ,{ 750, 630, 750, 700, 660} /* AT,TA,G,A,C */
07285 ,{ 750, 630, 750, 700, 660} /* AT,TA,G,A,G */
07286 ,{ 750, 630, 750, 700, 660} /* AT,TA,G,A,T */
07287 }
07288 ,{{ 780, 660, 780, 730, 690} /* AT,TA,G,C,E */
07289 ,{ 780, 660, 780, 730, 690} /* AT,TA,G,C,A */
07290 ,{ 780, 660, 780, 730, 690} /* AT,TA,G,C,C */
07291 ,{ 780, 660, 780, 730, 690} /* AT,TA,G,C,G */
07292 ,{ 780, 660, 780, 730, 690} /* AT,TA,G,C,T */
07293 }
07294 ,{{ 590, 470, 590, 540, 500} /* AT,TA,G,G,E */
07295 ,{ 590, 470, 590, 540, 500} /* AT,TA,G,G,A */
07296 ,{ 590, 470, 590, 540, 500} /* AT,TA,G,G,C */
07297 ,{ 590, 470, 590, 540, 500} /* AT,TA,G,G,G */
07298 ,{ 590, 470, 590, 540, 500} /* AT,TA,G,G,T */
07299 }
07300 ,{{ -60, -180, -60, -110, -150} /* AT,TA,G,T,E */
07301 ,{ -60, -180, -60, -110, -150} /* AT,TA,G,T,A */
07302 ,{ -60, -180, -60, -110, -150} /* AT,TA,G,T,C */
07303 ,{ -60, -180, -60, -110, -150} /* AT,TA,G,T,G */
07304 ,{ -60, -180, -60, -110, -150} /* AT,TA,G,T,T */
07305 }
07306 }

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07307 ,{{{ 780, 660, 780, 730, 690} /* AT,TA,T,E,E */
07308 ,{ 780, 660, 780, 730, 690} /* AT,TA,T,E,A */
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07310 ,{ 780, 660, 780, 730, 690} /* AT,TA,T,E,G */
07311 ,{ 780, 660, 780, 730, 690} /* AT,TA,T,E,T */
07312 }
07313 ,{{{ 750, 630, 750, 700, 660} /* AT,TA,T,A,E */
07314 ,{ 750, 630, 750, 700, 660} /* AT,TA,T,A,A */
07315 ,{ 750, 630, 750, 700, 660} /* AT,TA,T,A,C */
07316 ,{ 750, 630, 750, 700, 660} /* AT,TA,T,A,G */
07317 ,{ 750, 630, 750, 700, 660} /* AT,TA,T,A,T */
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07319 ,{{{ 780, 660, 780, 730, 690} /* AT,TA,T,C,E */
07320 ,{ 780, 660, 780, 730, 690} /* AT,TA,T,C,A */
07321 ,{ 780, 660, 780, 730, 690} /* AT,TA,T,C,C */
07322 ,{ 780, 660, 780, 730, 690} /* AT,TA,T,C,G */
07323 ,{ 780, 660, 780, 730, 690} /* AT,TA,T,C,T */
07324 }
07325 ,{{{ 590, 470, 590, 540, 500} /* AT,TA,T,G,E */
07326 ,{ 590, 470, 590, 540, 500} /* AT,TA,T,G,A */
07327 ,{ 590, 470, 590, 540, 500} /* AT,TA,T,G,C */
07328 ,{ 590, 470, 590, 540, 500} /* AT,TA,T,G,G */
07329 ,{ 590, 470, 590, 540, 500} /* AT,TA,T,G,T */
07330 }
07331 ,{{{ -60, -180, -60, -110, -150} /* AT,TA,T,T,E */
07332 ,{ -60, -180, -60, -110, -150} /* AT,TA,T,T,A */
07333 ,{ -60, -180, -60, -110, -150} /* AT,TA,T,T,C */
07334 ,{ -60, -180, -60, -110, -150} /* AT,TA,T,T,G */
07335 ,{ -60, -180, -60, -110, -150} /* AT,TA,T,T,T */
07336 }
07337 }
07338 }
07339 ,{{{ 1040, 920, 1040, 990, 950} /* AT,NN,E,E,E */
07340 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,E,E,A */
07341 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,E,E,C */
07342 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,E,E,G */
07343 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,E,E,T */
07344 }
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07348 ,{ 920, 800, 920, 870, 830} /* AT,NN,E,A,G */
07349 ,{ 920, 800, 920, 870, 830} /* AT,NN,E,A,T */
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07351 ,{{{ 1040, 920, 1040, 990, 950} /* AT,NN,E,C,E */
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07353 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,E,C,C */
07354 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,E,C,G */
07355 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,E,C,T */
07356 }
07357 ,{{{ 990, 870, 990, 940, 900} /* AT,NN,E,G,E */
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07359 ,{ 990, 870, 990, 940, 900} /* AT,NN,E,G,C */
07360 ,{ 990, 870, 990, 940, 900} /* AT,NN,E,G,G */
07361 ,{ 990, 870, 990, 940, 900} /* AT,NN,E,G,T */
07362 }
07363 ,{{{ 950, 830, 950, 900, 860} /* AT,NN,E,T,E */
07364 ,{ 950, 830, 950, 900, 860} /* AT,NN,E,T,A */
07365 ,{ 950, 830, 950, 900, 860} /* AT,NN,E,T,C */
07366 ,{ 950, 830, 950, 900, 860} /* AT,NN,E,T,G */
07367 ,{ 950, 830, 950, 900, 860} /* AT,NN,E,T,T */
07368 }
07369 }
07370 ,{{{ 1040, 920, 1040, 990, 950} /* AT,NN,A,E,E */
07371 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,A,E,A */
07372 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,A,E,C */
07373 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,A,E,G */
07374 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,A,E,T */
07375 }
07376 ,{{{ 920, 800, 920, 870, 830} /* AT,NN,A,A,E */
07377 ,{ 920, 800, 920, 870, 830} /* AT,NN,A,A,A */
07378 ,{ 920, 800, 920, 870, 830} /* AT,NN,A,A,C */
07379 ,{ 920, 800, 920, 870, 830} /* AT,NN,A,A,G */
07380 ,{ 920, 800, 920, 870, 830} /* AT,NN,A,A,T */
07381 }
07382 ,{{{ 1040, 920, 1040, 990, 950} /* AT,NN,A,C,E */
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07392 ,{ 990, 870, 990, 940, 900} /* AT,NN,A,G,T */
07393 }

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07397 ,{ 950, 830, 950, 900, 860} /* AT,NN,A,T,G */
07398 ,{ 950, 830, 950, 900, 860} /* AT,NN,A,T,T */
07399 }
07400
07401 ,{{{ 1040, 920, 1040, 990, 950} /* AT,NN,C,E,E */
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07403 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,C,E,C */
07404 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,C,E,G */
07405 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,C,E,T */
07406 }
07407 ,{{ 920, 800, 920, 870, 830} /* AT,NN,C,A,E */
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07409 ,{ 920, 800, 920, 870, 830} /* AT,NN,C,A,C */
07410 ,{ 920, 800, 920, 870, 830} /* AT,NN,C,A,G */
07411 ,{ 920, 800, 920, 870, 830} /* AT,NN,C,A,T */
07412 }
07413 ,{{ 1040, 920, 1040, 990, 950} /* AT,NN,C,C,E */
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07429 ,{ 950, 830, 950, 900, 860} /* AT,NN,C,T,T */
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07431 }
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07434 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,G,E,C */
07435 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,G,E,G */
07436 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,G,E,T */
07437 }
07438 ,{{ 920, 800, 920, 870, 830} /* AT,NN,G,A,E */
07439 ,{ 920, 800, 920, 870, 830} /* AT,NN,G,A,A */
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07442 ,{ 920, 800, 920, 870, 830} /* AT,NN,G,A,T */
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07444 ,{{{ 1040, 920, 1040, 990, 950} /* AT,NN,G,C,E */
07445 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,G,C,A */
07446 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,G,C,C */
07447 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,G,C,G */
07448 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,G,C,T */
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07451 ,{ 990, 870, 990, 940, 900} /* AT,NN,G,G,A */
07452 ,{ 990, 870, 990, 940, 900} /* AT,NN,G,G,C */
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07454 ,{ 990, 870, 990, 940, 900} /* AT,NN,G,G,T */
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07456 ,{{ 950, 830, 950, 900, 860} /* AT,NN,G,T,E */
07457 ,{ 950, 830, 950, 900, 860} /* AT,NN,G,T,A */
07458 ,{ 950, 830, 950, 900, 860} /* AT,NN,G,T,C */
07459 ,{ 950, 830, 950, 900, 860} /* AT,NN,G,T,G */
07460 ,{ 950, 830, 950, 900, 860} /* AT,NN,G,T,T */
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07462 }
07463 ,{{{ 1040, 920, 1040, 990, 950} /* AT,NN,T,E,E */
07464 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,T,E,A */
07465 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,T,E,C */
07466 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,T,E,G */
07467 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,T,E,T */
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07469 ,{{ 920, 800, 920, 870, 830} /* AT,NN,T,A,E */
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07472 ,{ 920, 800, 920, 870, 830} /* AT,NN,T,A,G */
07473 ,{ 920, 800, 920, 870, 830} /* AT,NN,T,A,T */
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07476 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,T,C,A */
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07478 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,T,C,G */
07479 ,{ 1040, 920, 1040, 990, 950} /* AT,NN,T,C,T */
07480 }
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07482 ,{ 990, 870, 990, 940, 900} /* AT,NN,T,G,A */
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07488 ,{ 950, 830, 950, 900, 860} /* AT,NN,T,T,A */
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07493 }
07494 }
07495 }
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07498 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,E,C */
07499 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,E,G */
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07503 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,A,A */
07504 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,A,C */
07505 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,A,G */
07506 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,A,T */
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07508 ,{{ INF, INF, INF, INF, INF} /* TA,NP,E,C,E */
07509 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,C,A */
07510 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,C,C */
07511 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,C,G */
07512 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,C,T */
07513 }
07514 ,{{ INF, INF, INF, INF, INF} /* TA,NP,E,G,E */
07515 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,G,A */
07516 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,G,C */
07517 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,G,G */
07518 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,G,T */
07519 }
07520 ,{{ INF, INF, INF, INF, INF} /* TA,NP,E,T,E */
07521 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,T,A */
07522 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,T,C */
07523 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,T,G */
07524 ,{ INF, INF, INF, INF, INF} /* TA,NP,E,T,T */
07525 }
07526 }
07527 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,A,E,E */
07528 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,E,A */
07529 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,E,C */
07530 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,E,G */
07531 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,E,T */
07532 }
07533 ,{{ INF, INF, INF, INF, INF} /* TA,NP,A,A,E */
07534 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,A,A */
07535 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,A,C */
07536 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,A,G */
07537 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,A,T */
07538 }
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07542 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,C,G */
07543 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,C,T */
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07546 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,G,A */
07547 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,G,C */
07548 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,G,G */
07549 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,G,T */
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07553 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,T,C */
07554 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,T,G */
07555 ,{ INF, INF, INF, INF, INF} /* TA,NP,A,T,T */
07556 }
07557 }
07558 ,{{{ INF, INF, INF, INF, INF} /* TA,NP,C,E,E */
07559 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,E,A */
07560 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,E,C */
07561 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,E,G */
07562 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,E,T */
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07566 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,A,C */
07567 ,{ INF, INF, INF, INF, INF} /* TA,NP,C,A,G */

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07573 , { INF, INF, INF, INF, INF} /* TA,NP,C,C,G */
07574 , { INF, INF, INF, INF, INF} /* TA,NP,C,C,T */
07575 }
07576 , {{ INF, INF, INF, INF, INF} /* TA,NP,C,G,E */
07577 , { INF, INF, INF, INF, INF} /* TA,NP,C,G,A */
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07579 , { INF, INF, INF, INF, INF} /* TA,NP,C,G,G */
07580 , { INF, INF, INF, INF, INF} /* TA,NP,C,G,T */
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07587 }
07588 }
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07605 , { INF, INF, INF, INF, INF} /* TA,NP,G,C,T */
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07607 , {{ INF, INF, INF, INF, INF} /* TA,NP,G,G,E */
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07611 , { INF, INF, INF, INF, INF} /* TA,NP,G,G,T */
07612 }
07613 , {{ INF, INF, INF, INF, INF} /* TA,NP,G,T,E */
07614 , { INF, INF, INF, INF, INF} /* TA,NP,G,T,A */
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07616 , { INF, INF, INF, INF, INF} /* TA,NP,G,T,G */
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07619 }
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07622 , { INF, INF, INF, INF, INF} /* TA,NP,T,E,C */
07623 , { INF, INF, INF, INF, INF} /* TA,NP,T,E,G */
07624 , { INF, INF, INF, INF, INF} /* TA,NP,T,E,T */
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07628 , { INF, INF, INF, INF, INF} /* TA,NP,T,A,C */
07629 , { INF, INF, INF, INF, INF} /* TA,NP,T,A,G */
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07634 , { INF, INF, INF, INF, INF} /* TA,NP,T,C,C */
07635 , { INF, INF, INF, INF, INF} /* TA,NP,T,C,G */
07636 , { INF, INF, INF, INF, INF} /* TA,NP,T,C,T */
07637 }
07638 , {{ INF, INF, INF, INF, INF} /* TA,NP,T,G,E */
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07647 , { INF, INF, INF, INF, INF} /* TA,NP,T,T,G */
07648 , { INF, INF, INF, INF, INF} /* TA,NP,T,T,T */
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07736 , { -210, -240, -210, -400, -1050} /* TA,CG,C,G,T */
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07738 , {{ -240, -270, -240, -430, -1080} /* TA,CG,C,T,E */
07739 , { -240, -270, -240, -430, -1080} /* TA,CG,C,T,A */
07740 , { -240, -270, -240, -430, -1080} /* TA,CG,C,T,C */
07741 , { -240, -270, -240, -430, -1080} /* TA,CG,C,T,G */

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```

07742      , { -240, -270, -240, -430, -1080} /* TA,CG,C,T,T */
07743      }
07744      }
07745      ,{{{ -160, -190, -160, -350, -1000} /* TA,CG,G,E,E */
07746      , { -160, -190, -160, -350, -1000} /* TA,CG,G,E,A */
07747      , { -160, -190, -160, -350, -1000} /* TA,CG,G,E,C */
07748      , { -160, -190, -160, -350, -1000} /* TA,CG,G,E,G */
07749      , { -160, -190, -160, -350, -1000} /* TA,CG,G,E,T */
07750      }
07751      ,{{{ -200, -230, -200, -390, -1040} /* TA,CG,G,A,E */
07752      , { -200, -230, -200, -390, -1040} /* TA,CG,G,A,A */
07753      , { -200, -230, -200, -390, -1040} /* TA,CG,G,A,C */
07754      , { -200, -230, -200, -390, -1040} /* TA,CG,G,A,G */
07755      , { -200, -230, -200, -390, -1040} /* TA,CG,G,A,T */
07756      }
07757      ,{{{ -160, -190, -160, -350, -1000} /* TA,CG,G,C,E */
07758      , { -160, -190, -160, -350, -1000} /* TA,CG,G,C,A */
07759      , { -160, -190, -160, -350, -1000} /* TA,CG,G,C,C */
07760      , { -160, -190, -160, -350, -1000} /* TA,CG,G,C,G */
07761      , { -160, -190, -160, -350, -1000} /* TA,CG,G,C,T */
07762      }
07763      ,{{{ -210, -240, -210, -400, -1050} /* TA,CG,G,G,E */
07764      , { -210, -240, -210, -400, -1050} /* TA,CG,G,G,A */
07765      , { -210, -240, -210, -400, -1050} /* TA,CG,G,G,C */
07766      , { -210, -240, -210, -400, -1050} /* TA,CG,G,G,G */
07767      , { -210, -240, -210, -400, -1050} /* TA,CG,G,G,T */
07768      }
07769      ,{{{ -240, -270, -240, -430, -1080} /* TA,CG,G,T,E */
07770      , { -240, -270, -240, -430, -1080} /* TA,CG,G,T,A */
07771      , { -240, -270, -240, -430, -1080} /* TA,CG,G,T,C */
07772      , { -240, -270, -240, -430, -1080} /* TA,CG,G,T,G */
07773      , { -240, -270, -240, -430, -1080} /* TA,CG,G,T,T */
07774      }
07775      }
07776      ,{{{ -160, -190, -160, -350, -1000} /* TA,CG,T,E,E */
07777      , { -160, -190, -160, -350, -1000} /* TA,CG,T,E,A */
07778      , { -160, -190, -160, -350, -1000} /* TA,CG,T,E,C */
07779      , { -160, -190, -160, -350, -1000} /* TA,CG,T,E,G */
07780      , { -160, -190, -160, -350, -1000} /* TA,CG,T,E,T */
07781      }
07782      ,{{{ -200, -230, -200, -390, -1040} /* TA,CG,T,A,E */
07783      , { -200, -230, -200, -390, -1040} /* TA,CG,T,A,A */
07784      , { -200, -230, -200, -390, -1040} /* TA,CG,T,A,C */
07785      , { -200, -230, -200, -390, -1040} /* TA,CG,T,A,G */
07786      , { -200, -230, -200, -390, -1040} /* TA,CG,T,A,T */
07787      }
07788      ,{{{ -160, -190, -160, -350, -1000} /* TA,CG,T,C,E */
07789      , { -160, -190, -160, -350, -1000} /* TA,CG,T,C,A */
07790      , { -160, -190, -160, -350, -1000} /* TA,CG,T,C,C */
07791      , { -160, -190, -160, -350, -1000} /* TA,CG,T,C,G */
07792      , { -160, -190, -160, -350, -1000} /* TA,CG,T,C,T */
07793      }
07794      ,{{{ -210, -240, -210, -400, -1050} /* TA,CG,T,G,E */
07795      , { -210, -240, -210, -400, -1050} /* TA,CG,T,G,A */
07796      , { -210, -240, -210, -400, -1050} /* TA,CG,T,G,C */
07797      , { -210, -240, -210, -400, -1050} /* TA,CG,T,G,G */
07798      , { -210, -240, -210, -400, -1050} /* TA,CG,T,G,T */
07799      }
07800      ,{{{ -240, -270, -240, -430, -1080} /* TA,CG,T,T,E */
07801      , { -240, -270, -240, -430, -1080} /* TA,CG,T,T,A */
07802      , { -240, -270, -240, -430, -1080} /* TA,CG,T,T,C */
07803      , { -240, -270, -240, -430, -1080} /* TA,CG,T,T,G */
07804      , { -240, -270, -240, -430, -1080} /* TA,CG,T,T,T */
07805      }
07806      }
07807      }
07808      ,{{{ 170, 140, 170, -20, -670} /* TA,GC,E,E,E */
07809      , { 170, 140, 170, -20, -670} /* TA,GC,E,E,A */
07810      , { 170, 140, 170, -20, -670} /* TA,GC,E,E,C */
07811      , { 170, 140, 170, -20, -670} /* TA,GC,E,E,G */
07812      , { 170, 140, 170, -20, -670} /* TA,GC,E,E,T */
07813      }
07814      ,{{{ -360, -390, -360, -550, -1200} /* TA,GC,E,A,E */
07815      , { -360, -390, -360, -550, -1200} /* TA,GC,E,A,A */
07816      , { -360, -390, -360, -550, -1200} /* TA,GC,E,A,C */
07817      , { -360, -390, -360, -550, -1200} /* TA,GC,E,A,G */
07818      , { -360, -390, -360, -550, -1200} /* TA,GC,E,A,T */
07819      }
07820      ,{{{ -70, -100, -70, -260, -910} /* TA,GC,E,C,E */
07821      , { -70, -100, -70, -260, -910} /* TA,GC,E,C,A */
07822      , { -70, -100, -70, -260, -910} /* TA,GC,E,C,C */
07823      , { -70, -100, -70, -260, -910} /* TA,GC,E,C,G */
07824      , { -70, -100, -70, -260, -910} /* TA,GC,E,C,T */
07825      }
07826      ,{{{ -250, -280, -250, -440, -1090} /* TA,GC,E,G,E */
07827      , { -250, -280, -250, -440, -1090} /* TA,GC,E,G,A */
07828      , { -250, -280, -250, -440, -1090} /* TA,GC,E,G,C */

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07829 , { -250, -280, -250, -440, -1090} /* TA,GC,E,G,G */
07830 , { -250, -280, -250, -440, -1090} /* TA,GC,E,G,T */
07831 }
07832 , {{ 170, 140, 170, -20, -670} /* TA,GC,E,T,E */
07833 , { 170, 140, 170, -20, -670} /* TA,GC,E,T,A */
07834 , { 170, 140, 170, -20, -670} /* TA,GC,E,T,C */
07835 , { 170, 140, 170, -20, -670} /* TA,GC,E,T,G */
07836 , { 170, 140, 170, -20, -670} /* TA,GC,E,T,T */
07837 }
07838 }
07839 , {{{ 170, 140, 170, -20, -670} /* TA,GC,A,E,E */
07840 , { 170, 140, 170, -20, -670} /* TA,GC,A,E,A */
07841 , { 170, 140, 170, -20, -670} /* TA,GC,A,E,C */
07842 , { 170, 140, 170, -20, -670} /* TA,GC,A,E,G */
07843 , { 170, 140, 170, -20, -670} /* TA,GC,A,E,T */
07844 }
07845 , {{ -360, -390, -360, -550, -1200} /* TA,GC,A,A,E */
07846 , { -360, -390, -360, -550, -1200} /* TA,GC,A,A,A */
07847 , { -360, -390, -360, -550, -1200} /* TA,GC,A,A,C */
07848 , { -360, -390, -360, -550, -1200} /* TA,GC,A,A,G */
07849 , { -360, -390, -360, -550, -1200} /* TA,GC,A,A,T */
07850 }
07851 , {{ -70, -100, -70, -260, -910} /* TA,GC,A,C,E */
07852 , { -70, -100, -70, -260, -910} /* TA,GC,A,C,A */
07853 , { -70, -100, -70, -260, -910} /* TA,GC,A,C,C */
07854 , { -70, -100, -70, -260, -910} /* TA,GC,A,C,G */
07855 , { -70, -100, -70, -260, -910} /* TA,GC,A,C,T */
07856 }
07857 , {{ -250, -280, -250, -440, -1090} /* TA,GC,A,G,E */
07858 , { -250, -280, -250, -440, -1090} /* TA,GC,A,G,A */
07859 , { -250, -280, -250, -440, -1090} /* TA,GC,A,G,C */
07860 , { -250, -280, -250, -440, -1090} /* TA,GC,A,G,G */
07861 , { -250, -280, -250, -440, -1090} /* TA,GC,A,G,T */
07862 }
07863 , {{ 170, 140, 170, -20, -670} /* TA,GC,A,T,E */
07864 , { 170, 140, 170, -20, -670} /* TA,GC,A,T,A */
07865 , { 170, 140, 170, -20, -670} /* TA,GC,A,T,C */
07866 , { 170, 140, 170, -20, -670} /* TA,GC,A,T,G */
07867 , { 170, 140, 170, -20, -670} /* TA,GC,A,T,T */
07868 }
07869 }
07870 , {{{ 170, 140, 170, -20, -670} /* TA,GC,C,E,E */
07871 , { 170, 140, 170, -20, -670} /* TA,GC,C,E,A */
07872 , { 170, 140, 170, -20, -670} /* TA,GC,C,E,C */
07873 , { 170, 140, 170, -20, -670} /* TA,GC,C,E,G */
07874 , { 170, 140, 170, -20, -670} /* TA,GC,C,E,T */
07875 }
07876 , {{ -360, -390, -360, -550, -1200} /* TA,GC,C,A,E */
07877 , { -360, -390, -360, -550, -1200} /* TA,GC,C,A,A */
07878 , { -360, -390, -360, -550, -1200} /* TA,GC,C,A,C */
07879 , { -360, -390, -360, -550, -1200} /* TA,GC,C,A,G */
07880 , { -360, -390, -360, -550, -1200} /* TA,GC,C,A,T */
07881 }
07882 , {{ -70, -100, -70, -260, -910} /* TA,GC,C,C,E */
07883 , { -70, -100, -70, -260, -910} /* TA,GC,C,C,A */
07884 , { -70, -100, -70, -260, -910} /* TA,GC,C,C,C */
07885 , { -70, -100, -70, -260, -910} /* TA,GC,C,C,G */
07886 , { -70, -100, -70, -260, -910} /* TA,GC,C,C,T */
07887 }
07888 , {{{ -250, -280, -250, -440, -1090} /* TA,GC,C,G,E */
07889 , { -250, -280, -250, -440, -1090} /* TA,GC,C,G,A */
07890 , { -250, -280, -250, -440, -1090} /* TA,GC,C,G,C */
07891 , { -250, -280, -250, -440, -1090} /* TA,GC,C,G,G */
07892 , { -250, -280, -250, -440, -1090} /* TA,GC,C,G,T */
07893 }
07894 , {{ 170, 140, 170, -20, -670} /* TA,GC,C,T,E */
07895 , { 170, 140, 170, -20, -670} /* TA,GC,C,T,A */
07896 , { 170, 140, 170, -20, -670} /* TA,GC,C,T,C */
07897 , { 170, 140, 170, -20, -670} /* TA,GC,C,T,G */
07898 , { 170, 140, 170, -20, -670} /* TA,GC,C,T,T */
07899 }
07900 }
07901 , {{{ 170, 140, 170, -20, -670} /* TA,GC,G,E,E */
07902 , { 170, 140, 170, -20, -670} /* TA,GC,G,E,A */
07903 , { 170, 140, 170, -20, -670} /* TA,GC,G,E,C */
07904 , { 170, 140, 170, -20, -670} /* TA,GC,G,E,G */
07905 , { 170, 140, 170, -20, -670} /* TA,GC,G,E,T */
07906 }
07907 , {{ -360, -390, -360, -550, -1200} /* TA,GC,G,A,E */
07908 , { -360, -390, -360, -550, -1200} /* TA,GC,G,A,A */
07909 , { -360, -390, -360, -550, -1200} /* TA,GC,G,A,C */
07910 , { -360, -390, -360, -550, -1200} /* TA,GC,G,A,G */
07911 , { -360, -390, -360, -550, -1200} /* TA,GC,G,A,T */
07912 }
07913 , {{ -70, -100, -70, -260, -910} /* TA,GC,G,C,E */
07914 , { -70, -100, -70, -260, -910} /* TA,GC,G,C,A */
07915 , { -70, -100, -70, -260, -910} /* TA,GC,G,C,C */

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07916 , { -70, -100, -70, -260, -910} /* TA,GC,G,C,G */
07917 , { -70, -100, -70, -260, -910} /* TA,GC,G,C,T */
07918 }
07919 , {{ -250, -280, -250, -440, -1090} /* TA,GC,G,G,E */
07920 , { -250, -280, -250, -440, -1090} /* TA,GC,G,G,A */
07921 , { -250, -280, -250, -440, -1090} /* TA,GC,G,G,C */
07922 , { -250, -280, -250, -440, -1090} /* TA,GC,G,G,G */
07923 , { -250, -280, -250, -440, -1090} /* TA,GC,G,G,T */
07924 }
07925 , {{ 170, 140, 170, -20, -670} /* TA,GC,G,T,E */
07926 , { 170, 140, 170, -20, -670} /* TA,GC,G,T,A */
07927 , { 170, 140, 170, -20, -670} /* TA,GC,G,T,C */
07928 , { 170, 140, 170, -20, -670} /* TA,GC,G,T,G */
07929 , { 170, 140, 170, -20, -670} /* TA,GC,G,T,T */
07930 }
07931 }
07932 , {{{ 170, 140, 170, -20, -670} /* TA,GC,T,E,E */
07933 , { 170, 140, 170, -20, -670} /* TA,GC,T,E,A */
07934 , { 170, 140, 170, -20, -670} /* TA,GC,T,E,C */
07935 , { 170, 140, 170, -20, -670} /* TA,GC,T,E,G */
07936 , { 170, 140, 170, -20, -670} /* TA,GC,T,E,T */
07937 }
07938 , {{ -360, -390, -360, -550, -1200} /* TA,GC,T,A,E */
07939 , { -360, -390, -360, -550, -1200} /* TA,GC,T,A,A */
07940 , { -360, -390, -360, -550, -1200} /* TA,GC,T,A,C */
07941 , { -360, -390, -360, -550, -1200} /* TA,GC,T,A,G */
07942 , { -360, -390, -360, -550, -1200} /* TA,GC,T,A,T */
07943 }
07944 , {{ -70, -100, -70, -260, -910} /* TA,GC,T,C,E */
07945 , { -70, -100, -70, -260, -910} /* TA,GC,T,C,A */
07946 , { -70, -100, -70, -260, -910} /* TA,GC,T,C,C */
07947 , { -70, -100, -70, -260, -910} /* TA,GC,T,C,G */
07948 , { -70, -100, -70, -260, -910} /* TA,GC,T,C,T */
07949 }
07950 , {{ -250, -280, -250, -440, -1090} /* TA,GC,T,G,E */
07951 , { -250, -280, -250, -440, -1090} /* TA,GC,T,G,A */
07952 , { -250, -280, -250, -440, -1090} /* TA,GC,T,G,C */
07953 , { -250, -280, -250, -440, -1090} /* TA,GC,T,G,G */
07954 , { -250, -280, -250, -440, -1090} /* TA,GC,T,G,T */
07955 }
07956 , {{ 170, 140, 170, -20, -670} /* TA,GC,T,T,E */
07957 , { 170, 140, 170, -20, -670} /* TA,GC,T,T,A */
07958 , { 170, 140, 170, -20, -670} /* TA,GC,T,T,C */
07959 , { 170, 140, 170, -20, -670} /* TA,GC,T,T,G */
07960 , { 170, 140, 170, -20, -670} /* TA,GC,T,T,T */
07961 }
07962 }
07963 }
07964 , {{{ 490, 460, 490, 300, -350} /* TA,GT,E,E,E */
07965 , { 490, 460, 490, 300, -350} /* TA,GT,E,E,A */
07966 , { 490, 460, 490, 300, -350} /* TA,GT,E,E,C */
07967 , { 490, 460, 490, 300, -350} /* TA,GT,E,E,G */
07968 , { 490, 460, 490, 300, -350} /* TA,GT,E,E,T */
07969 }
07970 , {{ -40, -70, -40, -230, -880} /* TA,GT,E,A,E */
07971 , { -40, -70, -40, -230, -880} /* TA,GT,E,A,A */
07972 , { -40, -70, -40, -230, -880} /* TA,GT,E,A,C */
07973 , { -40, -70, -40, -230, -880} /* TA,GT,E,A,G */
07974 , { -40, -70, -40, -230, -880} /* TA,GT,E,A,T */
07975 }
07976 , {{ 250, 220, 250, 60, -590} /* TA,GT,E,C,E */
07977 , { 250, 220, 250, 60, -590} /* TA,GT,E,C,A */
07978 , { 250, 220, 250, 60, -590} /* TA,GT,E,C,C */
07979 , { 250, 220, 250, 60, -590} /* TA,GT,E,C,G */
07980 , { 250, 220, 250, 60, -590} /* TA,GT,E,C,T */
07981 }
07982 , {{ 70, 40, 70, -120, -770} /* TA,GT,E,G,E */
07983 , { 70, 40, 70, -120, -770} /* TA,GT,E,G,A */
07984 , { 70, 40, 70, -120, -770} /* TA,GT,E,G,C */
07985 , { 70, 40, 70, -120, -770} /* TA,GT,E,G,G */
07986 , { 70, 40, 70, -120, -770} /* TA,GT,E,G,T */
07987 }
07988 , {{ 490, 460, 490, 300, -350} /* TA,GT,E,T,E */
07989 , { 490, 460, 490, 300, -350} /* TA,GT,E,T,A */
07990 , { 490, 460, 490, 300, -350} /* TA,GT,E,T,C */
07991 , { 490, 460, 490, 300, -350} /* TA,GT,E,T,G */
07992 , { 490, 460, 490, 300, -350} /* TA,GT,E,T,T */
07993 }
07994 }
07995 , {{{ 490, 460, 490, 300, -350} /* TA,GT,A,E,E */
07996 , { 490, 460, 490, 300, -350} /* TA,GT,A,E,A */
07997 , { 490, 460, 490, 300, -350} /* TA,GT,A,E,C */
07998 , { 490, 460, 490, 300, -350} /* TA,GT,A,E,G */
07999 , { 490, 460, 490, 300, -350} /* TA,GT,A,E,T */
08000 }
08001 , {{ -40, -70, -40, -230, -880} /* TA,GT,A,A,E */
08002 , { -40, -70, -40, -230, -880} /* TA,GT,A,A,A */

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08003      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,A,A,C */
08004      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,A,A,G */
08005      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,A,A,T */
08006      }
08007      , {{      250,      220,      250,      60,      -590} /* TA,GT,A,C,E */
08008      , {      250,      220,      250,      60,      -590} /* TA,GT,A,C,A */
08009      , {      250,      220,      250,      60,      -590} /* TA,GT,A,C,C */
08010      , {      250,      220,      250,      60,      -590} /* TA,GT,A,C,G */
08011      , {      250,      220,      250,      60,      -590} /* TA,GT,A,C,T */
08012      }
08013      , {{      70,      40,      70,      -120,      -770} /* TA,GT,A,G,E */
08014      , {      70,      40,      70,      -120,      -770} /* TA,GT,A,G,A */
08015      , {      70,      40,      70,      -120,      -770} /* TA,GT,A,G,C */
08016      , {      70,      40,      70,      -120,      -770} /* TA,GT,A,G,G */
08017      , {      70,      40,      70,      -120,      -770} /* TA,GT,A,G,T */
08018      }
08019      , {{      490,      460,      490,      300,      -350} /* TA,GT,A,T,E */
08020      , {      490,      460,      490,      300,      -350} /* TA,GT,A,T,A */
08021      , {      490,      460,      490,      300,      -350} /* TA,GT,A,T,C */
08022      , {      490,      460,      490,      300,      -350} /* TA,GT,A,T,G */
08023      , {      490,      460,      490,      300,      -350} /* TA,GT,A,T,T */
08024      }
08025      }
08026      , {{{      490,      460,      490,      300,      -350} /* TA,GT,C,E,E */
08027      , {      490,      460,      490,      300,      -350} /* TA,GT,C,E,A */
08028      , {      490,      460,      490,      300,      -350} /* TA,GT,C,E,C */
08029      , {      490,      460,      490,      300,      -350} /* TA,GT,C,E,G */
08030      , {      490,      460,      490,      300,      -350} /* TA,GT,C,E,T */
08031      }
08032      , {{      -40,      -70,      -40,      -230,      -880} /* TA,GT,C,A,E */
08033      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,C,A,A */
08034      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,C,A,C */
08035      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,C,A,G */
08036      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,C,A,T */
08037      }
08038      , {{      250,      220,      250,      60,      -590} /* TA,GT,C,C,E */
08039      , {      250,      220,      250,      60,      -590} /* TA,GT,C,C,A */
08040      , {      250,      220,      250,      60,      -590} /* TA,GT,C,C,C */
08041      , {      250,      220,      250,      60,      -590} /* TA,GT,C,C,G */
08042      , {      250,      220,      250,      60,      -590} /* TA,GT,C,C,T */
08043      }
08044      , {{      70,      40,      70,      -120,      -770} /* TA,GT,C,G,E */
08045      , {      70,      40,      70,      -120,      -770} /* TA,GT,C,G,A */
08046      , {      70,      40,      70,      -120,      -770} /* TA,GT,C,G,C */
08047      , {      70,      40,      70,      -120,      -770} /* TA,GT,C,G,G */
08048      , {      70,      40,      70,      -120,      -770} /* TA,GT,C,G,T */
08049      }
08050      , {{{      490,      460,      490,      300,      -350} /* TA,GT,C,T,E */
08051      , {      490,      460,      490,      300,      -350} /* TA,GT,C,T,A */
08052      , {      490,      460,      490,      300,      -350} /* TA,GT,C,T,C */
08053      , {      490,      460,      490,      300,      -350} /* TA,GT,C,T,G */
08054      , {      490,      460,      490,      300,      -350} /* TA,GT,C,T,T */
08055      }
08056      }
08057      , {{{      490,      460,      490,      300,      -350} /* TA,GT,G,E,E */
08058      , {      490,      460,      490,      300,      -350} /* TA,GT,G,E,A */
08059      , {      490,      460,      490,      300,      -350} /* TA,GT,G,E,C */
08060      , {      490,      460,      490,      300,      -350} /* TA,GT,G,E,G */
08061      , {      490,      460,      490,      300,      -350} /* TA,GT,G,E,T */
08062      }
08063      , {{      -40,      -70,      -40,      -230,      -880} /* TA,GT,G,A,E */
08064      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,G,A,A */
08065      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,G,A,C */
08066      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,G,A,G */
08067      , {      -40,      -70,      -40,      -230,      -880} /* TA,GT,G,A,T */
08068      }
08069      , {{      250,      220,      250,      60,      -590} /* TA,GT,G,C,E */
08070      , {      250,      220,      250,      60,      -590} /* TA,GT,G,C,A */
08071      , {      250,      220,      250,      60,      -590} /* TA,GT,G,C,C */
08072      , {      250,      220,      250,      60,      -590} /* TA,GT,G,C,G */
08073      , {      250,      220,      250,      60,      -590} /* TA,GT,G,C,T */
08074      }
08075      , {{      70,      40,      70,      -120,      -770} /* TA,GT,G,G,E */
08076      , {      70,      40,      70,      -120,      -770} /* TA,GT,G,G,A */
08077      , {      70,      40,      70,      -120,      -770} /* TA,GT,G,G,C */
08078      , {      70,      40,      70,      -120,      -770} /* TA,GT,G,G,G */
08079      , {      70,      40,      70,      -120,      -770} /* TA,GT,G,G,T */
08080      }
08081      , {{{      490,      460,      490,      300,      -350} /* TA,GT,G,T,E */
08082      , {      490,      460,      490,      300,      -350} /* TA,GT,G,T,A */
08083      , {      490,      460,      490,      300,      -350} /* TA,GT,G,T,C */
08084      , {      490,      460,      490,      300,      -350} /* TA,GT,G,T,G */
08085      , {      490,      460,      490,      300,      -350} /* TA,GT,G,T,T */
08086      }
08087      }
08088      , {{{      490,      460,      490,      300,      -350} /* TA,GT,T,E,E */
08089      , {      490,      460,      490,      300,      -350} /* TA,GT,T,E,A */

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08090 , { 490, 460, 490, 300, -350} /* TA,GT,T,E,C */
08091 , { 490, 460, 490, 300, -350} /* TA,GT,T,E,G */
08092 , { 490, 460, 490, 300, -350} /* TA,GT,T,E,T */
08093 }
08094 , { { -40, -70, -40, -230, -880} /* TA,GT,T,A,E */
08095 , { -40, -70, -40, -230, -880} /* TA,GT,T,A,A */
08096 , { -40, -70, -40, -230, -880} /* TA,GT,T,A,C */
08097 , { -40, -70, -40, -230, -880} /* TA,GT,T,A,G */
08098 , { -40, -70, -40, -230, -880} /* TA,GT,T,A,T */
08099 }
08100 , { { 250, 220, 250, 60, -590} /* TA,GT,T,C,E */
08101 , { 250, 220, 250, 60, -590} /* TA,GT,T,C,A */
08102 , { 250, 220, 250, 60, -590} /* TA,GT,T,C,C */
08103 , { 250, 220, 250, 60, -590} /* TA,GT,T,C,G */
08104 , { 250, 220, 250, 60, -590} /* TA,GT,T,C,T */
08105 }
08106 , { { 70, 40, 70, -120, -770} /* TA,GT,T,G,E */
08107 , { 70, 40, 70, -120, -770} /* TA,GT,T,G,A */
08108 , { 70, 40, 70, -120, -770} /* TA,GT,T,G,C */
08109 , { 70, 40, 70, -120, -770} /* TA,GT,T,G,G */
08110 , { 70, 40, 70, -120, -770} /* TA,GT,T,G,T */
08111 }
08112 , { { 490, 460, 490, 300, -350} /* TA,GT,T,T,E */
08113 , { 490, 460, 490, 300, -350} /* TA,GT,T,T,A */
08114 , { 490, 460, 490, 300, -350} /* TA,GT,T,T,C */
08115 , { 490, 460, 490, 300, -350} /* TA,GT,T,T,G */
08116 , { 490, 460, 490, 300, -350} /* TA,GT,T,T,T */
08117 }
08118 }
08119 }
08120 , { { { 520, 490, 520, 330, -320} /* TA,TG,E,E,E */
08121 , { 520, 490, 520, 330, -320} /* TA,TG,E,E,A */
08122 , { 520, 490, 520, 330, -320} /* TA,TG,E,E,C */
08123 , { 520, 490, 520, 330, -320} /* TA,TG,E,E,G */
08124 , { 520, 490, 520, 330, -320} /* TA,TG,E,E,T */
08125 }
08126 , { { 490, 460, 490, 300, -350} /* TA,TG,E,A,E */
08127 , { 490, 460, 490, 300, -350} /* TA,TG,E,A,A */
08128 , { 490, 460, 490, 300, -350} /* TA,TG,E,A,C */
08129 , { 490, 460, 490, 300, -350} /* TA,TG,E,A,G */
08130 , { 490, 460, 490, 300, -350} /* TA,TG,E,A,T */
08131 }
08132 , { { 520, 490, 520, 330, -320} /* TA,TG,E,C,E */
08133 , { 520, 490, 520, 330, -320} /* TA,TG,E,C,A */
08134 , { 520, 490, 520, 330, -320} /* TA,TG,E,C,C */
08135 , { 520, 490, 520, 330, -320} /* TA,TG,E,C,G */
08136 , { 520, 490, 520, 330, -320} /* TA,TG,E,C,T */
08137 }
08138 , { { 330, 300, 330, 140, -510} /* TA,TG,E,G,E */
08139 , { 330, 300, 330, 140, -510} /* TA,TG,E,G,A */
08140 , { 330, 300, 330, 140, -510} /* TA,TG,E,G,C */
08141 , { 330, 300, 330, 140, -510} /* TA,TG,E,G,G */
08142 , { 330, 300, 330, 140, -510} /* TA,TG,E,G,T */
08143 }
08144 , { { -320, -350, -320, -510, -1160} /* TA,TG,E,T,E */
08145 , { -320, -350, -320, -510, -1160} /* TA,TG,E,T,A */
08146 , { -320, -350, -320, -510, -1160} /* TA,TG,E,T,C */
08147 , { -320, -350, -320, -510, -1160} /* TA,TG,E,T,G */
08148 , { -320, -350, -320, -510, -1160} /* TA,TG,E,T,T */
08149 }
08150 }
08151 , { { { 520, 490, 520, 330, -320} /* TA,TG,A,E,E */
08152 , { 520, 490, 520, 330, -320} /* TA,TG,A,E,A */
08153 , { 520, 490, 520, 330, -320} /* TA,TG,A,E,C */
08154 , { 520, 490, 520, 330, -320} /* TA,TG,A,E,G */
08155 , { 520, 490, 520, 330, -320} /* TA,TG,A,E,T */
08156 }
08157 , { { 490, 460, 490, 300, -350} /* TA,TG,A,A,E */
08158 , { 490, 460, 490, 300, -350} /* TA,TG,A,A,A */
08159 , { 490, 460, 490, 300, -350} /* TA,TG,A,A,C */
08160 , { 490, 460, 490, 300, -350} /* TA,TG,A,A,G */
08161 , { 490, 460, 490, 300, -350} /* TA,TG,A,A,T */
08162 }
08163 , { { 520, 490, 520, 330, -320} /* TA,TG,A,C,E */
08164 , { 520, 490, 520, 330, -320} /* TA,TG,A,C,A */
08165 , { 520, 490, 520, 330, -320} /* TA,TG,A,C,C */
08166 , { 520, 490, 520, 330, -320} /* TA,TG,A,C,G */
08167 , { 520, 490, 520, 330, -320} /* TA,TG,A,C,T */
08168 }
08169 , { { 330, 300, 330, 140, -510} /* TA,TG,A,G,E */
08170 , { 330, 300, 330, 140, -510} /* TA,TG,A,G,A */
08171 , { 330, 300, 330, 140, -510} /* TA,TG,A,G,C */
08172 , { 330, 300, 330, 140, -510} /* TA,TG,A,G,G */
08173 , { 330, 300, 330, 140, -510} /* TA,TG,A,G,T */
08174 }
08175 , { { -320, -350, -320, -510, -1160} /* TA,TG,A,T,E */
08176 , { -320, -350, -320, -510, -1160} /* TA,TG,A,T,A */
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08177      , { -320, -350, -320, -510, -1160} /* TA, TG, A, T, C */
08178      , { -320, -350, -320, -510, -1160} /* TA, TG, A, T, G */
08179      , { -320, -350, -320, -510, -1160} /* TA, TG, A, T, T */
08180      }
08181      }
08182      , { { 520, 490, 520, 330, -320} /* TA, TG, C, E, E */
08183      , { 520, 490, 520, 330, -320} /* TA, TG, C, E, A */
08184      , { 520, 490, 520, 330, -320} /* TA, TG, C, E, C */
08185      , { 520, 490, 520, 330, -320} /* TA, TG, C, E, G */
08186      , { 520, 490, 520, 330, -320} /* TA, TG, C, E, T */
08187      }
08188      , { { 490, 460, 490, 300, -350} /* TA, TG, C, A, E */
08189      , { 490, 460, 490, 300, -350} /* TA, TG, C, A, A */
08190      , { 490, 460, 490, 300, -350} /* TA, TG, C, A, C */
08191      , { 490, 460, 490, 300, -350} /* TA, TG, C, A, G */
08192      , { 490, 460, 490, 300, -350} /* TA, TG, C, A, T */
08193      }
08194      , { { 520, 490, 520, 330, -320} /* TA, TG, C, C, E */
08195      , { 520, 490, 520, 330, -320} /* TA, TG, C, C, A */
08196      , { 520, 490, 520, 330, -320} /* TA, TG, C, C, C */
08197      , { 520, 490, 520, 330, -320} /* TA, TG, C, C, G */
08198      , { 520, 490, 520, 330, -320} /* TA, TG, C, C, T */
08199      }
08200      , { { 330, 300, 330, 140, -510} /* TA, TG, C, G, E */
08201      , { 330, 300, 330, 140, -510} /* TA, TG, C, G, A */
08202      , { 330, 300, 330, 140, -510} /* TA, TG, C, G, C */
08203      , { 330, 300, 330, 140, -510} /* TA, TG, C, G, G */
08204      , { 330, 300, 330, 140, -510} /* TA, TG, C, G, T */
08205      }
08206      , { { -320, -350, -320, -510, -1160} /* TA, TG, C, T, E */
08207      , { -320, -350, -320, -510, -1160} /* TA, TG, C, T, A */
08208      , { -320, -350, -320, -510, -1160} /* TA, TG, C, T, C */
08209      , { -320, -350, -320, -510, -1160} /* TA, TG, C, T, G */
08210      , { -320, -350, -320, -510, -1160} /* TA, TG, C, T, T */
08211      }
08212      }
08213      , { { 520, 490, 520, 330, -320} /* TA, TG, G, E, E */
08214      , { 520, 490, 520, 330, -320} /* TA, TG, G, E, A */
08215      , { 520, 490, 520, 330, -320} /* TA, TG, G, E, C */
08216      , { 520, 490, 520, 330, -320} /* TA, TG, G, E, G */
08217      , { 520, 490, 520, 330, -320} /* TA, TG, G, E, T */
08218      }
08219      , { { 490, 460, 490, 300, -350} /* TA, TG, G, A, E */
08220      , { 490, 460, 490, 300, -350} /* TA, TG, G, A, A */
08221      , { 490, 460, 490, 300, -350} /* TA, TG, G, A, C */
08222      , { 490, 460, 490, 300, -350} /* TA, TG, G, A, G */
08223      , { 490, 460, 490, 300, -350} /* TA, TG, G, A, T */
08224      }
08225      , { { 520, 490, 520, 330, -320} /* TA, TG, G, C, E */
08226      , { 520, 490, 520, 330, -320} /* TA, TG, G, C, A */
08227      , { 520, 490, 520, 330, -320} /* TA, TG, G, C, C */
08228      , { 520, 490, 520, 330, -320} /* TA, TG, G, C, G */
08229      , { 520, 490, 520, 330, -320} /* TA, TG, G, C, T */
08230      }
08231      , { { 330, 300, 330, 140, -510} /* TA, TG, G, G, E */
08232      , { 330, 300, 330, 140, -510} /* TA, TG, G, G, A */
08233      , { 330, 300, 330, 140, -510} /* TA, TG, G, G, C */
08234      , { 330, 300, 330, 140, -510} /* TA, TG, G, G, G */
08235      , { 330, 300, 330, 140, -510} /* TA, TG, G, G, T */
08236      }
08237      , { { -320, -350, -320, -510, -1160} /* TA, TG, G, T, E */
08238      , { -320, -350, -320, -510, -1160} /* TA, TG, G, T, A */
08239      , { -320, -350, -320, -510, -1160} /* TA, TG, G, T, C */
08240      , { -320, -350, -320, -510, -1160} /* TA, TG, G, T, G */
08241      , { -320, -350, -320, -510, -1160} /* TA, TG, G, T, T */
08242      }
08243      }
08244      , { { 520, 490, 520, 330, -320} /* TA, TG, T, E, E */
08245      , { 520, 490, 520, 330, -320} /* TA, TG, T, E, A */
08246      , { 520, 490, 520, 330, -320} /* TA, TG, T, E, C */
08247      , { 520, 490, 520, 330, -320} /* TA, TG, T, E, G */
08248      , { 520, 490, 520, 330, -320} /* TA, TG, T, E, T */
08249      }
08250      , { { 490, 460, 490, 300, -350} /* TA, TG, T, A, E */
08251      , { 490, 460, 490, 300, -350} /* TA, TG, T, A, A */
08252      , { 490, 460, 490, 300, -350} /* TA, TG, T, A, C */
08253      , { 490, 460, 490, 300, -350} /* TA, TG, T, A, G */
08254      , { 490, 460, 490, 300, -350} /* TA, TG, T, A, T */
08255      }
08256      , { { 520, 490, 520, 330, -320} /* TA, TG, T, C, E */
08257      , { 520, 490, 520, 330, -320} /* TA, TG, T, C, A */
08258      , { 520, 490, 520, 330, -320} /* TA, TG, T, C, C */
08259      , { 520, 490, 520, 330, -320} /* TA, TG, T, C, G */
08260      , { 520, 490, 520, 330, -320} /* TA, TG, T, C, T */
08261      }
08262      , { { 330, 300, 330, 140, -510} /* TA, TG, T, G, E */
08263      , { 330, 300, 330, 140, -510} /* TA, TG, T, G, A */

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08264      , {      330,      300,      330,      140,      -510} /* TA,TG,T,G,C */
08265      , {      330,      300,      330,      140,      -510} /* TA,TG,T,G,G */
08266      , {      330,      300,      330,      140,      -510} /* TA,TG,T,G,T */
08267      }
08268      , {{      -320,      -350,      -320,      -510,      -1160} /* TA,TG,T,T,E */
08269      , {      -320,      -350,      -320,      -510,      -1160} /* TA,TG,T,T,A */
08270      , {      -320,      -350,      -320,      -510,      -1160} /* TA,TG,T,T,C */
08271      , {      -320,      -350,      -320,      -510,      -1160} /* TA,TG,T,T,G */
08272      , {      -320,      -350,      -320,      -510,      -1160} /* TA,TG,T,T,T */
08273      }
08274      }
08275      }
08276      , {{{      780,      750,      780,      590,      -60} /* TA,AT,E,E,E */
08277      , {      780,      750,      780,      590,      -60} /* TA,AT,E,E,A */
08278      , {      780,      750,      780,      590,      -60} /* TA,AT,E,E,C */
08279      , {      780,      750,      780,      590,      -60} /* TA,AT,E,E,G */
08280      , {      780,      750,      780,      590,      -60} /* TA,AT,E,E,T */
08281      }
08282      , {{      660,      630,      660,      470,      -180} /* TA,AT,E,A,E */
08283      , {      660,      630,      660,      470,      -180} /* TA,AT,E,A,A */
08284      , {      660,      630,      660,      470,      -180} /* TA,AT,E,A,C */
08285      , {      660,      630,      660,      470,      -180} /* TA,AT,E,A,G */
08286      , {      660,      630,      660,      470,      -180} /* TA,AT,E,A,T */
08287      }
08288      , {{      780,      750,      780,      590,      -60} /* TA,AT,E,C,E */
08289      , {      780,      750,      780,      590,      -60} /* TA,AT,E,C,A */
08290      , {      780,      750,      780,      590,      -60} /* TA,AT,E,C,C */
08291      , {      780,      750,      780,      590,      -60} /* TA,AT,E,C,G */
08292      , {      780,      750,      780,      590,      -60} /* TA,AT,E,C,T */
08293      }
08294      , {{      730,      700,      730,      540,      -110} /* TA,AT,E,G,E */
08295      , {      730,      700,      730,      540,      -110} /* TA,AT,E,G,A */
08296      , {      730,      700,      730,      540,      -110} /* TA,AT,E,G,C */
08297      , {      730,      700,      730,      540,      -110} /* TA,AT,E,G,G */
08298      , {      730,      700,      730,      540,      -110} /* TA,AT,E,G,T */
08299      }
08300      , {{      690,      660,      690,      500,      -150} /* TA,AT,E,T,E */
08301      , {      690,      660,      690,      500,      -150} /* TA,AT,E,T,A */
08302      , {      690,      660,      690,      500,      -150} /* TA,AT,E,T,C */
08303      , {      690,      660,      690,      500,      -150} /* TA,AT,E,T,G */
08304      , {      690,      660,      690,      500,      -150} /* TA,AT,E,T,T */
08305      }
08306      }
08307      , {{{      780,      750,      780,      590,      -60} /* TA,AT,A,E,E */
08308      , {      780,      750,      780,      590,      -60} /* TA,AT,A,E,A */
08309      , {      780,      750,      780,      590,      -60} /* TA,AT,A,E,C */
08310      , {      780,      750,      780,      590,      -60} /* TA,AT,A,E,G */
08311      , {      780,      750,      780,      590,      -60} /* TA,AT,A,E,T */
08312      }
08313      , {{      660,      630,      660,      470,      -180} /* TA,AT,A,A,E */
08314      , {      660,      630,      660,      470,      -180} /* TA,AT,A,A,A */
08315      , {      660,      630,      660,      470,      -180} /* TA,AT,A,A,C */
08316      , {      660,      630,      660,      470,      -180} /* TA,AT,A,A,G */
08317      , {      660,      630,      660,      470,      -180} /* TA,AT,A,A,T */
08318      }
08319      , {{      780,      750,      780,      590,      -60} /* TA,AT,A,C,E */
08320      , {      780,      750,      780,      590,      -60} /* TA,AT,A,C,A */
08321      , {      780,      750,      780,      590,      -60} /* TA,AT,A,C,C */
08322      , {      780,      750,      780,      590,      -60} /* TA,AT,A,C,G */
08323      , {      780,      750,      780,      590,      -60} /* TA,AT,A,C,T */
08324      }
08325      , {{      730,      700,      730,      540,      -110} /* TA,AT,A,G,E */
08326      , {      730,      700,      730,      540,      -110} /* TA,AT,A,G,A */
08327      , {      730,      700,      730,      540,      -110} /* TA,AT,A,G,C */
08328      , {      730,      700,      730,      540,      -110} /* TA,AT,A,G,G */
08329      , {      730,      700,      730,      540,      -110} /* TA,AT,A,G,T */
08330      }
08331      , {{      690,      660,      690,      500,      -150} /* TA,AT,A,T,E */
08332      , {      690,      660,      690,      500,      -150} /* TA,AT,A,T,A */
08333      , {      690,      660,      690,      500,      -150} /* TA,AT,A,T,C */
08334      , {      690,      660,      690,      500,      -150} /* TA,AT,A,T,G */
08335      , {      690,      660,      690,      500,      -150} /* TA,AT,A,T,T */
08336      }
08337      }
08338      , {{{      780,      750,      780,      590,      -60} /* TA,AT,C,E,E */
08339      , {      780,      750,      780,      590,      -60} /* TA,AT,C,E,A */
08340      , {      780,      750,      780,      590,      -60} /* TA,AT,C,E,C */
08341      , {      780,      750,      780,      590,      -60} /* TA,AT,C,E,G */
08342      , {      780,      750,      780,      590,      -60} /* TA,AT,C,E,T */
08343      }
08344      , {{      660,      630,      660,      470,      -180} /* TA,AT,C,A,E */
08345      , {      660,      630,      660,      470,      -180} /* TA,AT,C,A,A */
08346      , {      660,      630,      660,      470,      -180} /* TA,AT,C,A,C */
08347      , {      660,      630,      660,      470,      -180} /* TA,AT,C,A,G */
08348      , {      660,      630,      660,      470,      -180} /* TA,AT,C,A,T */
08349      }
08350      , {{      780,      750,      780,      590,      -60} /* TA,AT,C,C,E */

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```

08351      , {      780,      750,      780,      590,      -60} /* TA,AT,C,C,A */
08352      , {      780,      750,      780,      590,      -60} /* TA,AT,C,C,C */
08353      , {      780,      750,      780,      590,      -60} /* TA,AT,C,C,G */
08354      , {      780,      750,      780,      590,      -60} /* TA,AT,C,C,T */
08355      }
08356      , { {      730,      700,      730,      540,     -110} /* TA,AT,C,G,E */
08357      , {      730,      700,      730,      540,     -110} /* TA,AT,C,G,A */
08358      , {      730,      700,      730,      540,     -110} /* TA,AT,C,G,C */
08359      , {      730,      700,      730,      540,     -110} /* TA,AT,C,G,G */
08360      , {      730,      700,      730,      540,     -110} /* TA,AT,C,G,T */
08361      }
08362      , { {      690,      660,      690,      500,     -150} /* TA,AT,C,T,E */
08363      , {      690,      660,      690,      500,     -150} /* TA,AT,C,T,A */
08364      , {      690,      660,      690,      500,     -150} /* TA,AT,C,T,C */
08365      , {      690,      660,      690,      500,     -150} /* TA,AT,C,T,G */
08366      , {      690,      660,      690,      500,     -150} /* TA,AT,C,T,T */
08367      }
08368      }
08369      , { { {      780,      750,      780,      590,      -60} /* TA,AT,G,E,E */
08370      , {      780,      750,      780,      590,      -60} /* TA,AT,G,E,A */
08371      , {      780,      750,      780,      590,      -60} /* TA,AT,G,E,C */
08372      , {      780,      750,      780,      590,      -60} /* TA,AT,G,E,G */
08373      , {      780,      750,      780,      590,      -60} /* TA,AT,G,E,T */
08374      }
08375      , { {      660,      630,      660,      470,     -180} /* TA,AT,G,A,E */
08376      , {      660,      630,      660,      470,     -180} /* TA,AT,G,A,A */
08377      , {      660,      630,      660,      470,     -180} /* TA,AT,G,A,C */
08378      , {      660,      630,      660,      470,     -180} /* TA,AT,G,A,G */
08379      , {      660,      630,      660,      470,     -180} /* TA,AT,G,A,T */
08380      }
08381      , { {      780,      750,      780,      590,      -60} /* TA,AT,G,C,E */
08382      , {      780,      750,      780,      590,      -60} /* TA,AT,G,C,A */
08383      , {      780,      750,      780,      590,      -60} /* TA,AT,G,C,C */
08384      , {      780,      750,      780,      590,      -60} /* TA,AT,G,C,G */
08385      , {      780,      750,      780,      590,      -60} /* TA,AT,G,C,T */
08386      }
08387      , { {      730,      700,      730,      540,     -110} /* TA,AT,G,G,E */
08388      , {      730,      700,      730,      540,     -110} /* TA,AT,G,G,A */
08389      , {      730,      700,      730,      540,     -110} /* TA,AT,G,G,C */
08390      , {      730,      700,      730,      540,     -110} /* TA,AT,G,G,G */
08391      , {      730,      700,      730,      540,     -110} /* TA,AT,G,G,T */
08392      }
08393      , { {      690,      660,      690,      500,     -150} /* TA,AT,G,T,E */
08394      , {      690,      660,      690,      500,     -150} /* TA,AT,G,T,A */
08395      , {      690,      660,      690,      500,     -150} /* TA,AT,G,T,C */
08396      , {      690,      660,      690,      500,     -150} /* TA,AT,G,T,G */
08397      , {      690,      660,      690,      500,     -150} /* TA,AT,G,T,T */
08398      }
08399      }
08400      , { { {      780,      750,      780,      590,      -60} /* TA,AT,T,E,E */
08401      , {      780,      750,      780,      590,      -60} /* TA,AT,T,E,A */
08402      , {      780,      750,      780,      590,      -60} /* TA,AT,T,E,C */
08403      , {      780,      750,      780,      590,      -60} /* TA,AT,T,E,G */
08404      , {      780,      750,      780,      590,      -60} /* TA,AT,T,E,T */
08405      }
08406      , { {      660,      630,      660,      470,     -180} /* TA,AT,T,A,E */
08407      , {      660,      630,      660,      470,     -180} /* TA,AT,T,A,A */
08408      , {      660,      630,      660,      470,     -180} /* TA,AT,T,A,C */
08409      , {      660,      630,      660,      470,     -180} /* TA,AT,T,A,G */
08410      , {      660,      630,      660,      470,     -180} /* TA,AT,T,A,T */
08411      }
08412      , { {      780,      750,      780,      590,      -60} /* TA,AT,T,C,E */
08413      , {      780,      750,      780,      590,      -60} /* TA,AT,T,C,A */
08414      , {      780,      750,      780,      590,      -60} /* TA,AT,T,C,C */
08415      , {      780,      750,      780,      590,      -60} /* TA,AT,T,C,G */
08416      , {      780,      750,      780,      590,      -60} /* TA,AT,T,C,T */
08417      }
08418      , { {      730,      700,      730,      540,     -110} /* TA,AT,T,G,E */
08419      , {      730,      700,      730,      540,     -110} /* TA,AT,T,G,A */
08420      , {      730,      700,      730,      540,     -110} /* TA,AT,T,G,C */
08421      , {      730,      700,      730,      540,     -110} /* TA,AT,T,G,G */
08422      , {      730,      700,      730,      540,     -110} /* TA,AT,T,G,T */
08423      }
08424      , { {      690,      660,      690,      500,     -150} /* TA,AT,T,T,E */
08425      , {      690,      660,      690,      500,     -150} /* TA,AT,T,T,A */
08426      , {      690,      660,      690,      500,     -150} /* TA,AT,T,T,C */
08427      , {      690,      660,      690,      500,     -150} /* TA,AT,T,T,G */
08428      , {      690,      660,      690,      500,     -150} /* TA,AT,T,T,T */
08429      }
08430      }
08431      }
08432      , { { { {      520,      490,      520,      330,     -320} /* TA,TA,E,E,E */
08433      , {      520,      490,      520,      330,     -320} /* TA,TA,E,E,A */
08434      , {      520,      490,      520,      330,     -320} /* TA,TA,E,E,C */
08435      , {      520,      490,      520,      330,     -320} /* TA,TA,E,E,G */
08436      , {      520,      490,      520,      330,     -320} /* TA,TA,E,E,T */
08437      }

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08441 ,{ 490, 460, 490, 300, -350} /* TA,TA,E,A,G */
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08443 }
08444 ,{{ 520, 490, 520, 330, -320} /* TA,TA,E,C,E */
08445 ,{ 520, 490, 520, 330, -320} /* TA,TA,E,C,A */
08446 ,{ 520, 490, 520, 330, -320} /* TA,TA,E,C,C */
08447 ,{ 520, 490, 520, 330, -320} /* TA,TA,E,C,G */
08448 ,{ 520, 490, 520, 330, -320} /* TA,TA,E,C,T */
08449 }
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08452 ,{ 330, 300, 330, 140, -510} /* TA,TA,E,G,C */
08453 ,{ 330, 300, 330, 140, -510} /* TA,TA,E,G,G */
08454 ,{ 330, 300, 330, 140, -510} /* TA,TA,E,G,T */
08455 }
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08457 ,{ -320, -350, -320, -510, -1160} /* TA,TA,E,T,A */
08458 ,{ -320, -350, -320, -510, -1160} /* TA,TA,E,T,C */
08459 ,{ -320, -350, -320, -510, -1160} /* TA,TA,E,T,G */
08460 ,{ -320, -350, -320, -510, -1160} /* TA,TA,E,T,T */
08461 }
08462 }
08463 ,{{{ 520, 490, 520, 330, -320} /* TA,TA,A,E,E */
08464 ,{ 520, 490, 520, 330, -320} /* TA,TA,A,E,A */
08465 ,{ 520, 490, 520, 330, -320} /* TA,TA,A,E,C */
08466 ,{ 520, 490, 520, 330, -320} /* TA,TA,A,E,G */
08467 ,{ 520, 490, 520, 330, -320} /* TA,TA,A,E,T */
08468 }
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08470 ,{ 490, 460, 490, 300, -350} /* TA,TA,A,A,A */
08471 ,{ 490, 460, 490, 300, -350} /* TA,TA,A,A,C */
08472 ,{ 490, 460, 490, 300, -350} /* TA,TA,A,A,G */
08473 ,{ 490, 460, 490, 300, -350} /* TA,TA,A,A,T */
08474 }
08475 ,{{ 520, 490, 520, 330, -320} /* TA,TA,A,C,E */
08476 ,{ 520, 490, 520, 330, -320} /* TA,TA,A,C,A */
08477 ,{ 520, 490, 520, 330, -320} /* TA,TA,A,C,C */
08478 ,{ 520, 490, 520, 330, -320} /* TA,TA,A,C,G */
08479 ,{ 520, 490, 520, 330, -320} /* TA,TA,A,C,T */
08480 }
08481 ,{{ 330, 300, 330, 140, -510} /* TA,TA,A,G,E */
08482 ,{ 330, 300, 330, 140, -510} /* TA,TA,A,G,A */
08483 ,{ 330, 300, 330, 140, -510} /* TA,TA,A,G,C */
08484 ,{ 330, 300, 330, 140, -510} /* TA,TA,A,G,G */
08485 ,{ 330, 300, 330, 140, -510} /* TA,TA,A,G,T */
08486 }
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08488 ,{ -320, -350, -320, -510, -1160} /* TA,TA,A,T,A */
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08490 ,{ -320, -350, -320, -510, -1160} /* TA,TA,A,T,G */
08491 ,{ -320, -350, -320, -510, -1160} /* TA,TA,A,T,T */
08492 }
08493 }
08494 ,{{{ 520, 490, 520, 330, -320} /* TA,TA,C,E,E */
08495 ,{ 520, 490, 520, 330, -320} /* TA,TA,C,E,A */
08496 ,{ 520, 490, 520, 330, -320} /* TA,TA,C,E,C */
08497 ,{ 520, 490, 520, 330, -320} /* TA,TA,C,E,G */
08498 ,{ 520, 490, 520, 330, -320} /* TA,TA,C,E,T */
08499 }
08500 ,{{ 490, 460, 490, 300, -350} /* TA,TA,C,A,E */
08501 ,{ 490, 460, 490, 300, -350} /* TA,TA,C,A,A */
08502 ,{ 490, 460, 490, 300, -350} /* TA,TA,C,A,C */
08503 ,{ 490, 460, 490, 300, -350} /* TA,TA,C,A,G */
08504 ,{ 490, 460, 490, 300, -350} /* TA,TA,C,A,T */
08505 }
08506 ,{{ 520, 490, 520, 330, -320} /* TA,TA,C,C,E */
08507 ,{ 520, 490, 520, 330, -320} /* TA,TA,C,C,A */
08508 ,{ 520, 490, 520, 330, -320} /* TA,TA,C,C,C */
08509 ,{ 520, 490, 520, 330, -320} /* TA,TA,C,C,G */
08510 ,{ 520, 490, 520, 330, -320} /* TA,TA,C,C,T */
08511 }
08512 ,{{ 330, 300, 330, 140, -510} /* TA,TA,C,G,E */
08513 ,{ 330, 300, 330, 140, -510} /* TA,TA,C,G,A */
08514 ,{ 330, 300, 330, 140, -510} /* TA,TA,C,G,C */
08515 ,{ 330, 300, 330, 140, -510} /* TA,TA,C,G,G */
08516 ,{ 330, 300, 330, 140, -510} /* TA,TA,C,G,T */
08517 }
08518 ,{{ -320, -350, -320, -510, -1160} /* TA,TA,C,T,E */
08519 ,{ -320, -350, -320, -510, -1160} /* TA,TA,C,T,A */
08520 ,{ -320, -350, -320, -510, -1160} /* TA,TA,C,T,C */
08521 ,{ -320, -350, -320, -510, -1160} /* TA,TA,C,T,G */
08522 ,{ -320, -350, -320, -510, -1160} /* TA,TA,C,T,T */
08523 }
08524 }

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08525 ,{{{ 520, 490, 520, 330, -320} /* TA,TA,G,E,E */
08526 ,{ 520, 490, 520, 330, -320} /* TA,TA,G,E,A */
08527 ,{ 520, 490, 520, 330, -320} /* TA,TA,G,E,C */
08528 ,{ 520, 490, 520, 330, -320} /* TA,TA,G,E,G */
08529 ,{ 520, 490, 520, 330, -320} /* TA,TA,G,E,T */
08530 }
08531 ,{{{ 490, 460, 490, 300, -350} /* TA,TA,G,A,E */
08532 ,{ 490, 460, 490, 300, -350} /* TA,TA,G,A,A */
08533 ,{ 490, 460, 490, 300, -350} /* TA,TA,G,A,C */
08534 ,{ 490, 460, 490, 300, -350} /* TA,TA,G,A,G */
08535 ,{ 490, 460, 490, 300, -350} /* TA,TA,G,A,T */
08536 }
08537 ,{{{ 520, 490, 520, 330, -320} /* TA,TA,G,C,E */
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08539 ,{ 520, 490, 520, 330, -320} /* TA,TA,G,C,C */
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08541 ,{ 520, 490, 520, 330, -320} /* TA,TA,G,C,T */
08542 }
08543 ,{{{ 330, 300, 330, 140, -510} /* TA,TA,G,G,E */
08544 ,{ 330, 300, 330, 140, -510} /* TA,TA,G,G,A */
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08547 ,{ 330, 300, 330, 140, -510} /* TA,TA,G,G,T */
08548 }
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08553 ,{ -320, -350, -320, -510, -1160} /* TA,TA,G,T,T */
08554 }
08555 }
08556 ,{{{ 520, 490, 520, 330, -320} /* TA,TA,T,E,E */
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08560 ,{ 520, 490, 520, 330, -320} /* TA,TA,T,E,T */
08561 }
08562 ,{{{ 490, 460, 490, 300, -350} /* TA,TA,T,A,E */
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08564 ,{ 490, 460, 490, 300, -350} /* TA,TA,T,A,C */
08565 ,{ 490, 460, 490, 300, -350} /* TA,TA,T,A,G */
08566 ,{ 490, 460, 490, 300, -350} /* TA,TA,T,A,T */
08567 }
08568 ,{{{ 520, 490, 520, 330, -320} /* TA,TA,T,C,E */
08569 ,{ 520, 490, 520, 330, -320} /* TA,TA,T,C,A */
08570 ,{ 520, 490, 520, 330, -320} /* TA,TA,T,C,C */
08571 ,{ 520, 490, 520, 330, -320} /* TA,TA,T,C,G */
08572 ,{ 520, 490, 520, 330, -320} /* TA,TA,T,C,T */
08573 }
08574 ,{{{ 330, 300, 330, 140, -510} /* TA,TA,T,G,E */
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08576 ,{ 330, 300, 330, 140, -510} /* TA,TA,T,G,C */
08577 ,{ 330, 300, 330, 140, -510} /* TA,TA,T,G,G */
08578 ,{ 330, 300, 330, 140, -510} /* TA,TA,T,G,T */
08579 }
08580 ,{{{ -320, -350, -320, -510, -1160} /* TA,TA,T,T,E */
08581 ,{ -320, -350, -320, -510, -1160} /* TA,TA,T,T,A */
08582 ,{ -320, -350, -320, -510, -1160} /* TA,TA,T,T,C */
08583 ,{ -320, -350, -320, -510, -1160} /* TA,TA,T,T,G */
08584 ,{ -320, -350, -320, -510, -1160} /* TA,TA,T,T,T */
08585 }
08586 }
08587 }
08588 ,{{{ 780, 750, 780, 590, -60} /* TA,NN,E,E,E */
08589 ,{ 780, 750, 780, 590, -60} /* TA,NN,E,E,A */
08590 ,{ 780, 750, 780, 590, -60} /* TA,NN,E,E,C */
08591 ,{ 780, 750, 780, 590, -60} /* TA,NN,E,E,G */
08592 ,{ 780, 750, 780, 590, -60} /* TA,NN,E,E,T */
08593 }
08594 ,{{{ 660, 630, 660, 470, -180} /* TA,NN,E,A,E */
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08597 ,{ 660, 630, 660, 470, -180} /* TA,NN,E,A,G */
08598 ,{ 660, 630, 660, 470, -180} /* TA,NN,E,A,T */
08599 }
08600 ,{{{ 780, 750, 780, 590, -60} /* TA,NN,E,C,E */
08601 ,{ 780, 750, 780, 590, -60} /* TA,NN,E,C,A */
08602 ,{ 780, 750, 780, 590, -60} /* TA,NN,E,C,C */
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08606 ,{{{ 730, 700, 730, 540, -110} /* TA,NN,E,G,E */
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08609 ,{ 730, 700, 730, 540, -110} /* TA,NN,E,G,G */
08610 ,{ 730, 700, 730, 540, -110} /* TA,NN,E,G,T */
08611 }

```



```

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08613 ,{ 690, 660, 690, 500, -150} /* TA,NN,E,T,A */
08614 ,{ 690, 660, 690, 500, -150} /* TA,NN,E,T,C */
08615 ,{ 690, 660, 690, 500, -150} /* TA,NN,E,T,G */
08616 ,{ 690, 660, 690, 500, -150} /* TA,NN,E,T,T */
08617 }
08618 }
08619 ,{{{ 780, 750, 780, 590, -60} /* TA,NN,A,E,E */
08620 ,{ 780, 750, 780, 590, -60} /* TA,NN,A,E,A */
08621 ,{ 780, 750, 780, 590, -60} /* TA,NN,A,E,C */
08622 ,{ 780, 750, 780, 590, -60} /* TA,NN,A,E,G */
08623 ,{ 780, 750, 780, 590, -60} /* TA,NN,A,E,T */
08624 }
08625 ,{{{ 660, 630, 660, 470, -180} /* TA,NN,A,A,E */
08626 ,{ 660, 630, 660, 470, -180} /* TA,NN,A,A,A */
08627 ,{ 660, 630, 660, 470, -180} /* TA,NN,A,A,C */
08628 ,{ 660, 630, 660, 470, -180} /* TA,NN,A,A,G */
08629 ,{ 660, 630, 660, 470, -180} /* TA,NN,A,A,T */
08630 }
08631 ,{{{ 780, 750, 780, 590, -60} /* TA,NN,A,C,E */
08632 ,{ 780, 750, 780, 590, -60} /* TA,NN,A,C,A */
08633 ,{ 780, 750, 780, 590, -60} /* TA,NN,A,C,C */
08634 ,{ 780, 750, 780, 590, -60} /* TA,NN,A,C,G */
08635 ,{ 780, 750, 780, 590, -60} /* TA,NN,A,C,T */
08636 }
08637 ,{{{ 730, 700, 730, 540, -110} /* TA,NN,A,G,E */
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08639 ,{ 730, 700, 730, 540, -110} /* TA,NN,A,G,C */
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08641 ,{ 730, 700, 730, 540, -110} /* TA,NN,A,G,T */
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08653 ,{ 780, 750, 780, 590, -60} /* TA,NN,C,E,G */
08654 ,{ 780, 750, 780, 590, -60} /* TA,NN,C,E,T */
08655 }
08656 ,{{{ 660, 630, 660, 470, -180} /* TA,NN,C,A,E */
08657 ,{ 660, 630, 660, 470, -180} /* TA,NN,C,A,A */
08658 ,{ 660, 630, 660, 470, -180} /* TA,NN,C,A,C */
08659 ,{ 660, 630, 660, 470, -180} /* TA,NN,C,A,G */
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08664 ,{ 780, 750, 780, 590, -60} /* TA,NN,C,C,C */
08665 ,{ 780, 750, 780, 590, -60} /* TA,NN,C,C,G */
08666 ,{ 780, 750, 780, 590, -60} /* TA,NN,C,C,T */
08667 }
08668 ,{{{ 730, 700, 730, 540, -110} /* TA,NN,C,G,E */
08669 ,{ 730, 700, 730, 540, -110} /* TA,NN,C,G,A */
08670 ,{ 730, 700, 730, 540, -110} /* TA,NN,C,G,C */
08671 ,{ 730, 700, 730, 540, -110} /* TA,NN,C,G,G */
08672 ,{ 730, 700, 730, 540, -110} /* TA,NN,C,G,T */
08673 }
08674 ,{{{ 690, 660, 690, 500, -150} /* TA,NN,C,T,E */
08675 ,{ 690, 660, 690, 500, -150} /* TA,NN,C,T,A */
08676 ,{ 690, 660, 690, 500, -150} /* TA,NN,C,T,C */
08677 ,{ 690, 660, 690, 500, -150} /* TA,NN,C,T,G */
08678 ,{ 690, 660, 690, 500, -150} /* TA,NN,C,T,T */
08679 }
08680 }
08681 ,{{{ 780, 750, 780, 590, -60} /* TA,NN,G,E,E */
08682 ,{ 780, 750, 780, 590, -60} /* TA,NN,G,E,A */
08683 ,{ 780, 750, 780, 590, -60} /* TA,NN,G,E,C */
08684 ,{ 780, 750, 780, 590, -60} /* TA,NN,G,E,G */
08685 ,{ 780, 750, 780, 590, -60} /* TA,NN,G,E,T */
08686 }
08687 ,{{{ 660, 630, 660, 470, -180} /* TA,NN,G,A,E */
08688 ,{ 660, 630, 660, 470, -180} /* TA,NN,G,A,A */
08689 ,{ 660, 630, 660, 470, -180} /* TA,NN,G,A,C */
08690 ,{ 660, 630, 660, 470, -180} /* TA,NN,G,A,G */
08691 ,{ 660, 630, 660, 470, -180} /* TA,NN,G,A,T */
08692 }
08693 ,{{{ 780, 750, 780, 590, -60} /* TA,NN,G,C,E */
08694 ,{ 780, 750, 780, 590, -60} /* TA,NN,G,C,A */
08695 ,{ 780, 750, 780, 590, -60} /* TA,NN,G,C,C */
08696 ,{ 780, 750, 780, 590, -60} /* TA,NN,G,C,G */
08697 ,{ 780, 750, 780, 590, -60} /* TA,NN,G,C,T */
08698 }

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08699 ,{{ 730, 700, 730, 540, -110} /* TA,NN,G,G,E */
08700 ,{ 730, 700, 730, 540, -110} /* TA,NN,G,G,A */
08701 ,{ 730, 700, 730, 540, -110} /* TA,NN,G,G,C */
08702 ,{ 730, 700, 730, 540, -110} /* TA,NN,G,G,G */
08703 ,{ 730, 700, 730, 540, -110} /* TA,NN,G,G,T */
08704 }
08705 ,{{ 690, 660, 690, 500, -150} /* TA,NN,G,T,E */
08706 ,{ 690, 660, 690, 500, -150} /* TA,NN,G,T,A */
08707 ,{ 690, 660, 690, 500, -150} /* TA,NN,G,T,C */
08708 ,{ 690, 660, 690, 500, -150} /* TA,NN,G,T,G */
08709 ,{ 690, 660, 690, 500, -150} /* TA,NN,G,T,T */
08710 }
08711 }
08712 ,{{{ 780, 750, 780, 590, -60} /* TA,NN,T,E,E */
08713 ,{ 780, 750, 780, 590, -60} /* TA,NN,T,E,A */
08714 ,{ 780, 750, 780, 590, -60} /* TA,NN,T,E,C */
08715 ,{ 780, 750, 780, 590, -60} /* TA,NN,T,E,G */
08716 ,{ 780, 750, 780, 590, -60} /* TA,NN,T,E,T */
08717 }
08718 ,{{ 660, 630, 660, 470, -180} /* TA,NN,T,A,E */
08719 ,{ 660, 630, 660, 470, -180} /* TA,NN,T,A,A */
08720 ,{ 660, 630, 660, 470, -180} /* TA,NN,T,A,C */
08721 ,{ 660, 630, 660, 470, -180} /* TA,NN,T,A,G */
08722 ,{ 660, 630, 660, 470, -180} /* TA,NN,T,A,T */
08723 }
08724 ,{{ 780, 750, 780, 590, -60} /* TA,NN,T,C,E */
08725 ,{ 780, 750, 780, 590, -60} /* TA,NN,T,C,A */
08726 ,{ 780, 750, 780, 590, -60} /* TA,NN,T,C,C */
08727 ,{ 780, 750, 780, 590, -60} /* TA,NN,T,C,G */
08728 ,{ 780, 750, 780, 590, -60} /* TA,NN,T,C,T */
08729 }
08730 ,{{ 730, 700, 730, 540, -110} /* TA,NN,T,G,E */
08731 ,{ 730, 700, 730, 540, -110} /* TA,NN,T,G,A */
08732 ,{ 730, 700, 730, 540, -110} /* TA,NN,T,G,C */
08733 ,{ 730, 700, 730, 540, -110} /* TA,NN,T,G,G */
08734 ,{ 730, 700, 730, 540, -110} /* TA,NN,T,G,T */
08735 }
08736 ,{{ 690, 660, 690, 500, -150} /* TA,NN,T,T,E */
08737 ,{ 690, 660, 690, 500, -150} /* TA,NN,T,T,A */
08738 ,{ 690, 660, 690, 500, -150} /* TA,NN,T,T,C */
08739 ,{ 690, 660, 690, 500, -150} /* TA,NN,T,T,G */
08740 ,{ 690, 660, 690, 500, -150} /* TA,NN,T,T,T */
08741 }
08742 }
08743 }
08744 }
08745 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,E,E,E */
08746 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,E,A */
08747 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,E,C */
08748 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,E,G */
08749 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,E,T */
08750 }
08751 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,A,E */
08752 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A,A */
08753 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A,C */
08754 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A,G */
08755 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,A,T */
08756 }
08757 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,C,E */
08758 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C,A */
08759 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C,C */
08760 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C,G */
08761 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,C,T */
08762 }
08763 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,G,E */
08764 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G,A */
08765 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G,C */
08766 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G,G */
08767 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,G,T */
08768 }
08769 ,{{ INF, INF, INF, INF, INF} /* NN,NP,E,T,E */
08770 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T,A */
08771 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T,C */
08772 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T,G */
08773 ,{ INF, INF, INF, INF, INF} /* NN,NP,E,T,T */
08774 }
08775 }
08776 ,{{{ INF, INF, INF, INF, INF} /* NN,NP,A,E,E */
08777 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,E,A */
08778 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,E,C */
08779 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,E,G */
08780 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,E,T */
08781 }
08782 ,{{ INF, INF, INF, INF, INF} /* NN,NP,A,A,E */
08783 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,A,A */
08784 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,A,C */
08785 ,{ INF, INF, INF, INF, INF} /* NN,NP,A,A,G */

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08786 , { INF, INF, INF, INF, INF } /* NN,NP,A,A,T */
08787 }
08788 , { { INF, INF, INF, INF, INF } /* NN,NP,A,C,E */
08789 , { INF, INF, INF, INF, INF } /* NN,NP,A,C,A */
08790 , { INF, INF, INF, INF, INF } /* NN,NP,A,C,C */
08791 , { INF, INF, INF, INF, INF } /* NN,NP,A,C,G */
08792 , { INF, INF, INF, INF, INF } /* NN,NP,A,C,T */
08793 }
08794 , { { INF, INF, INF, INF, INF } /* NN,NP,A,G,E */
08795 , { INF, INF, INF, INF, INF } /* NN,NP,A,G,A */
08796 , { INF, INF, INF, INF, INF } /* NN,NP,A,G,C */
08797 , { INF, INF, INF, INF, INF } /* NN,NP,A,G,G */
08798 , { INF, INF, INF, INF, INF } /* NN,NP,A,G,T */
08799 }
08800 , { { INF, INF, INF, INF, INF } /* NN,NP,A,T,E */
08801 , { INF, INF, INF, INF, INF } /* NN,NP,A,T,A */
08802 , { INF, INF, INF, INF, INF } /* NN,NP,A,T,C */
08803 , { INF, INF, INF, INF, INF } /* NN,NP,A,T,G */
08804 , { INF, INF, INF, INF, INF } /* NN,NP,A,T,T */
08805 }
08806 }
08807 , { { { INF, INF, INF, INF, INF } /* NN,NP,C,E,E */
08808 , { INF, INF, INF, INF, INF } /* NN,NP,C,E,A */
08809 , { INF, INF, INF, INF, INF } /* NN,NP,C,E,C */
08810 , { INF, INF, INF, INF, INF } /* NN,NP,C,E,G */
08811 , { INF, INF, INF, INF, INF } /* NN,NP,C,E,T */
08812 }
08813 , { { INF, INF, INF, INF, INF } /* NN,NP,C,A,E */
08814 , { INF, INF, INF, INF, INF } /* NN,NP,C,A,A */
08815 , { INF, INF, INF, INF, INF } /* NN,NP,C,A,C */
08816 , { INF, INF, INF, INF, INF } /* NN,NP,C,A,G */
08817 , { INF, INF, INF, INF, INF } /* NN,NP,C,A,T */
08818 }
08819 , { { INF, INF, INF, INF, INF } /* NN,NP,C,C,E */
08820 , { INF, INF, INF, INF, INF } /* NN,NP,C,C,A */
08821 , { INF, INF, INF, INF, INF } /* NN,NP,C,C,C */
08822 , { INF, INF, INF, INF, INF } /* NN,NP,C,C,G */
08823 , { INF, INF, INF, INF, INF } /* NN,NP,C,C,T */
08824 }
08825 , { { INF, INF, INF, INF, INF } /* NN,NP,C,G,E */
08826 , { INF, INF, INF, INF, INF } /* NN,NP,C,G,A */
08827 , { INF, INF, INF, INF, INF } /* NN,NP,C,G,C */
08828 , { INF, INF, INF, INF, INF } /* NN,NP,C,G,G */
08829 , { INF, INF, INF, INF, INF } /* NN,NP,C,G,T */
08830 }
08831 , { { INF, INF, INF, INF, INF } /* NN,NP,C,T,E */
08832 , { INF, INF, INF, INF, INF } /* NN,NP,C,T,A */
08833 , { INF, INF, INF, INF, INF } /* NN,NP,C,T,C */
08834 , { INF, INF, INF, INF, INF } /* NN,NP,C,T,G */
08835 , { INF, INF, INF, INF, INF } /* NN,NP,C,T,T */
08836 }
08837 }
08838 , { { { INF, INF, INF, INF, INF } /* NN,NP,G,E,E */
08839 , { INF, INF, INF, INF, INF } /* NN,NP,G,E,A */
08840 , { INF, INF, INF, INF, INF } /* NN,NP,G,E,C */
08841 , { INF, INF, INF, INF, INF } /* NN,NP,G,E,G */
08842 , { INF, INF, INF, INF, INF } /* NN,NP,G,E,T */
08843 }
08844 , { { INF, INF, INF, INF, INF } /* NN,NP,G,A,E */
08845 , { INF, INF, INF, INF, INF } /* NN,NP,G,A,A */
08846 , { INF, INF, INF, INF, INF } /* NN,NP,G,A,C */
08847 , { INF, INF, INF, INF, INF } /* NN,NP,G,A,G */
08848 , { INF, INF, INF, INF, INF } /* NN,NP,G,A,T */
08849 }
08850 , { { INF, INF, INF, INF, INF } /* NN,NP,G,C,E */
08851 , { INF, INF, INF, INF, INF } /* NN,NP,G,C,A */
08852 , { INF, INF, INF, INF, INF } /* NN,NP,G,C,C */
08853 , { INF, INF, INF, INF, INF } /* NN,NP,G,C,G */
08854 , { INF, INF, INF, INF, INF } /* NN,NP,G,C,T */
08855 }
08856 , { { INF, INF, INF, INF, INF } /* NN,NP,G,G,E */
08857 , { INF, INF, INF, INF, INF } /* NN,NP,G,G,A */
08858 , { INF, INF, INF, INF, INF } /* NN,NP,G,G,C */
08859 , { INF, INF, INF, INF, INF } /* NN,NP,G,G,G */
08860 , { INF, INF, INF, INF, INF } /* NN,NP,G,G,T */
08861 }
08862 , { { INF, INF, INF, INF, INF } /* NN,NP,G,T,E */
08863 , { INF, INF, INF, INF, INF } /* NN,NP,G,T,A */
08864 , { INF, INF, INF, INF, INF } /* NN,NP,G,T,C */
08865 , { INF, INF, INF, INF, INF } /* NN,NP,G,T,G */
08866 , { INF, INF, INF, INF, INF } /* NN,NP,G,T,T */
08867 }
08868 }
08869 , { { { INF, INF, INF, INF, INF } /* NN,NP,T,E,E */
08870 , { INF, INF, INF, INF, INF } /* NN,NP,T,E,A */
08871 , { INF, INF, INF, INF, INF } /* NN,NP,T,E,C */
08872 , { INF, INF, INF, INF, INF } /* NN,NP,T,E,G */

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08873      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,E,T */
08874      }
08875      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,A,E */
08876      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,A,A */
08877      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,A,C */
08878      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,A,G */
08879      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,A,T */
08880      }
08881      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,C,E */
08882      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,C,A */
08883      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,C,C */
08884      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,C,G */
08885      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,C,T */
08886      }
08887      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,G,E */
08888      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,G,A */
08889      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,G,C */
08890      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,G,G */
08891      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,G,T */
08892      }
08893      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,T,E */
08894      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,T,A */
08895      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,T,C */
08896      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,T,G */
08897      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,T,T,T */
08898      }
08899      }
08900      }
08901      , {{{      100,      -20,      100,      50,      10} /* NN,CG,E,E,E */
08902      , {      100,      -20,      100,      50,      10} /* NN,CG,E,E,A */
08903      , {      100,      -20,      100,      50,      10} /* NN,CG,E,E,C */
08904      , {      100,      -20,      100,      50,      10} /* NN,CG,E,E,G */
08905      , {      100,      -20,      100,      50,      10} /* NN,CG,E,E,T */
08906      }
08907      , {{      60,      -60,      60,      10,      -30} /* NN,CG,E,A,E */
08908      , {      60,      -60,      60,      10,      -30} /* NN,CG,E,A,A */
08909      , {      60,      -60,      60,      10,      -30} /* NN,CG,E,A,C */
08910      , {      60,      -60,      60,      10,      -30} /* NN,CG,E,A,G */
08911      , {      60,      -60,      60,      10,      -30} /* NN,CG,E,A,T */
08912      }
08913      , {{      100,      -20,      100,      50,      10} /* NN,CG,E,C,E */
08914      , {      100,      -20,      100,      50,      10} /* NN,CG,E,C,A */
08915      , {      100,      -20,      100,      50,      10} /* NN,CG,E,C,C */
08916      , {      100,      -20,      100,      50,      10} /* NN,CG,E,C,G */
08917      , {      100,      -20,      100,      50,      10} /* NN,CG,E,C,T */
08918      }
08919      , {{      50,      -70,      50,      0,      -40} /* NN,CG,E,G,E */
08920      , {      50,      -70,      50,      0,      -40} /* NN,CG,E,G,A */
08921      , {      50,      -70,      50,      0,      -40} /* NN,CG,E,G,C */
08922      , {      50,      -70,      50,      0,      -40} /* NN,CG,E,G,G */
08923      , {      50,      -70,      50,      0,      -40} /* NN,CG,E,G,T */
08924      }
08925      , {{      20,      -100,      20,      -30,      -70} /* NN,CG,E,T,E */
08926      , {      20,      -100,      20,      -30,      -70} /* NN,CG,E,T,A */
08927      , {      20,      -100,      20,      -30,      -70} /* NN,CG,E,T,C */
08928      , {      20,      -100,      20,      -30,      -70} /* NN,CG,E,T,G */
08929      , {      20,      -100,      20,      -30,      -70} /* NN,CG,E,T,T */
08930      }
08931      }
08932      , {{{      100,      -20,      100,      50,      10} /* NN,CG,A,E,E */
08933      , {      100,      -20,      100,      50,      10} /* NN,CG,A,E,A */
08934      , {      100,      -20,      100,      50,      10} /* NN,CG,A,E,C */
08935      , {      100,      -20,      100,      50,      10} /* NN,CG,A,E,G */
08936      , {      100,      -20,      100,      50,      10} /* NN,CG,A,E,T */
08937      }
08938      , {{      60,      -60,      60,      10,      -30} /* NN,CG,A,A,E */
08939      , {      60,      -60,      60,      10,      -30} /* NN,CG,A,A,A */
08940      , {      60,      -60,      60,      10,      -30} /* NN,CG,A,A,C */
08941      , {      60,      -60,      60,      10,      -30} /* NN,CG,A,A,G */
08942      , {      60,      -60,      60,      10,      -30} /* NN,CG,A,A,T */
08943      }
08944      , {{      100,      -20,      100,      50,      10} /* NN,CG,A,C,E */
08945      , {      100,      -20,      100,      50,      10} /* NN,CG,A,C,A */
08946      , {      100,      -20,      100,      50,      10} /* NN,CG,A,C,C */
08947      , {      100,      -20,      100,      50,      10} /* NN,CG,A,C,G */
08948      , {      100,      -20,      100,      50,      10} /* NN,CG,A,C,T */
08949      }
08950      , {{      50,      -70,      50,      0,      -40} /* NN,CG,A,G,E */
08951      , {      50,      -70,      50,      0,      -40} /* NN,CG,A,G,A */
08952      , {      50,      -70,      50,      0,      -40} /* NN,CG,A,G,C */
08953      , {      50,      -70,      50,      0,      -40} /* NN,CG,A,G,G */
08954      , {      50,      -70,      50,      0,      -40} /* NN,CG,A,G,T */
08955      }
08956      , {{      20,      -100,      20,      -30,      -70} /* NN,CG,A,T,E */
08957      , {      20,      -100,      20,      -30,      -70} /* NN,CG,A,T,A */
08958      , {      20,      -100,      20,      -30,      -70} /* NN,CG,A,T,C */
08959      , {      20,      -100,      20,      -30,      -70} /* NN,CG,A,T,G */

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08960      , {      20,   -100,    20,   -30,   -70} /* NN,CG,A,T,T */
08961      }
08962      }
08963      ,{{{      100,   -20,    100,    50,    10} /* NN,CG,C,E,E */
08964      , {      100,   -20,    100,    50,    10} /* NN,CG,C,E,A */
08965      , {      100,   -20,    100,    50,    10} /* NN,CG,C,E,C */
08966      , {      100,   -20,    100,    50,    10} /* NN,CG,C,E,G */
08967      , {      100,   -20,    100,    50,    10} /* NN,CG,C,E,T */
08968      }
08969      ,{{{      60,   -60,    60,    10,   -30} /* NN,CG,C,A,E */
08970      , {      60,   -60,    60,    10,   -30} /* NN,CG,C,A,A */
08971      , {      60,   -60,    60,    10,   -30} /* NN,CG,C,A,C */
08972      , {      60,   -60,    60,    10,   -30} /* NN,CG,C,A,G */
08973      , {      60,   -60,    60,    10,   -30} /* NN,CG,C,A,T */
08974      }
08975      ,{{{      100,   -20,    100,    50,    10} /* NN,CG,C,C,E */
08976      , {      100,   -20,    100,    50,    10} /* NN,CG,C,C,A */
08977      , {      100,   -20,    100,    50,    10} /* NN,CG,C,C,C */
08978      , {      100,   -20,    100,    50,    10} /* NN,CG,C,C,G */
08979      , {      100,   -20,    100,    50,    10} /* NN,CG,C,C,T */
08980      }
08981      ,{{{      50,   -70,    50,    0,   -40} /* NN,CG,C,G,E */
08982      , {      50,   -70,    50,    0,   -40} /* NN,CG,C,G,A */
08983      , {      50,   -70,    50,    0,   -40} /* NN,CG,C,G,C */
08984      , {      50,   -70,    50,    0,   -40} /* NN,CG,C,G,G */
08985      , {      50,   -70,    50,    0,   -40} /* NN,CG,C,G,T */
08986      }
08987      ,{{{      20,  -100,    20,   -30,   -70} /* NN,CG,C,T,E */
08988      , {      20,  -100,    20,   -30,   -70} /* NN,CG,C,T,A */
08989      , {      20,  -100,    20,   -30,   -70} /* NN,CG,C,T,C */
08990      , {      20,  -100,    20,   -30,   -70} /* NN,CG,C,T,G */
08991      , {      20,  -100,    20,   -30,   -70} /* NN,CG,C,T,T */
08992      }
08993      }
08994      ,{{{      100,   -20,    100,    50,    10} /* NN,CG,G,E,E */
08995      , {      100,   -20,    100,    50,    10} /* NN,CG,G,E,A */
08996      , {      100,   -20,    100,    50,    10} /* NN,CG,G,E,C */
08997      , {      100,   -20,    100,    50,    10} /* NN,CG,G,E,G */
08998      , {      100,   -20,    100,    50,    10} /* NN,CG,G,E,T */
08999      }
09000      ,{{{      60,   -60,    60,    10,   -30} /* NN,CG,G,A,E */
09001      , {      60,   -60,    60,    10,   -30} /* NN,CG,G,A,A */
09002      , {      60,   -60,    60,    10,   -30} /* NN,CG,G,A,C */
09003      , {      60,   -60,    60,    10,   -30} /* NN,CG,G,A,G */
09004      , {      60,   -60,    60,    10,   -30} /* NN,CG,G,A,T */
09005      }
09006      ,{{{      100,   -20,    100,    50,    10} /* NN,CG,G,C,E */
09007      , {      100,   -20,    100,    50,    10} /* NN,CG,G,C,A */
09008      , {      100,   -20,    100,    50,    10} /* NN,CG,G,C,C */
09009      , {      100,   -20,    100,    50,    10} /* NN,CG,G,C,G */
09010      , {      100,   -20,    100,    50,    10} /* NN,CG,G,C,T */
09011      }
09012      ,{{{      50,   -70,    50,    0,   -40} /* NN,CG,G,G,E */
09013      , {      50,   -70,    50,    0,   -40} /* NN,CG,G,G,A */
09014      , {      50,   -70,    50,    0,   -40} /* NN,CG,G,G,C */
09015      , {      50,   -70,    50,    0,   -40} /* NN,CG,G,G,G */
09016      , {      50,   -70,    50,    0,   -40} /* NN,CG,G,G,T */
09017      }
09018      ,{{{      20,  -100,    20,   -30,   -70} /* NN,CG,G,T,E */
09019      , {      20,  -100,    20,   -30,   -70} /* NN,CG,G,T,A */
09020      , {      20,  -100,    20,   -30,   -70} /* NN,CG,G,T,C */
09021      , {      20,  -100,    20,   -30,   -70} /* NN,CG,G,T,G */
09022      , {      20,  -100,    20,   -30,   -70} /* NN,CG,G,T,T */
09023      }
09024      }
09025      ,{{{      100,   -20,    100,    50,    10} /* NN,CG,T,E,E */
09026      , {      100,   -20,    100,    50,    10} /* NN,CG,T,E,A */
09027      , {      100,   -20,    100,    50,    10} /* NN,CG,T,E,C */
09028      , {      100,   -20,    100,    50,    10} /* NN,CG,T,E,G */
09029      , {      100,   -20,    100,    50,    10} /* NN,CG,T,E,T */
09030      }
09031      ,{{{      60,   -60,    60,    10,   -30} /* NN,CG,T,A,E */
09032      , {      60,   -60,    60,    10,   -30} /* NN,CG,T,A,A */
09033      , {      60,   -60,    60,    10,   -30} /* NN,CG,T,A,C */
09034      , {      60,   -60,    60,    10,   -30} /* NN,CG,T,A,G */
09035      , {      60,   -60,    60,    10,   -30} /* NN,CG,T,A,T */
09036      }
09037      ,{{{      100,   -20,    100,    50,    10} /* NN,CG,T,C,E */
09038      , {      100,   -20,    100,    50,    10} /* NN,CG,T,C,A */
09039      , {      100,   -20,    100,    50,    10} /* NN,CG,T,C,C */
09040      , {      100,   -20,    100,    50,    10} /* NN,CG,T,C,G */
09041      , {      100,   -20,    100,    50,    10} /* NN,CG,T,C,T */
09042      }
09043      ,{{{      50,   -70,    50,    0,   -40} /* NN,CG,T,G,E */
09044      , {      50,   -70,    50,    0,   -40} /* NN,CG,T,G,A */
09045      , {      50,   -70,    50,    0,   -40} /* NN,CG,T,G,C */
09046      , {      50,   -70,    50,    0,   -40} /* NN,CG,T,G,G */

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09047      , {      50,      -70,      50,      0,      -40} /* NN,CG,T,G,T */
09048      }
09049      , {{      20,     -100,      20,     -30,     -70} /* NN,CG,T,T,E */
09050      , {      20,     -100,      20,     -30,     -70} /* NN,CG,T,T,A */
09051      , {      20,     -100,      20,     -30,     -70} /* NN,CG,T,T,C */
09052      , {      20,     -100,      20,     -30,     -70} /* NN,CG,T,T,G */
09053      , {      20,     -100,      20,     -30,     -70} /* NN,CG,T,T,T */
09054      }
09055      }
09056      }
09057      , {{{      430,      310,      430,      380,      340} /* NN,GC,E,E,E */
09058      , {      430,      310,      430,      380,      340} /* NN,GC,E,E,A */
09059      , {      430,      310,      430,      380,      340} /* NN,GC,E,E,C */
09060      , {      430,      310,      430,      380,      340} /* NN,GC,E,E,G */
09061      , {      430,      310,      430,      380,      340} /* NN,GC,E,E,T */
09062      }
09063      , {{     -100,     -220,     -100,     -150,     -190} /* NN,GC,E,A,E */
09064      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,E,A,A */
09065      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,E,A,C */
09066      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,E,A,G */
09067      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,E,A,T */
09068      }
09069      , {{      190,       70,      190,      140,      100} /* NN,GC,E,C,E */
09070      , {      190,       70,      190,      140,      100} /* NN,GC,E,C,A */
09071      , {      190,       70,      190,      140,      100} /* NN,GC,E,C,C */
09072      , {      190,       70,      190,      140,      100} /* NN,GC,E,C,G */
09073      , {      190,       70,      190,      140,      100} /* NN,GC,E,C,T */
09074      }
09075      , {{       10,     -110,       10,     -40,     -80} /* NN,GC,E,G,E */
09076      , {       10,     -110,       10,     -40,     -80} /* NN,GC,E,G,A */
09077      , {       10,     -110,       10,     -40,     -80} /* NN,GC,E,G,C */
09078      , {       10,     -110,       10,     -40,     -80} /* NN,GC,E,G,G */
09079      , {       10,     -110,       10,     -40,     -80} /* NN,GC,E,G,T */
09080      }
09081      , {{      430,      310,      430,      380,      340} /* NN,GC,E,T,E */
09082      , {      430,      310,      430,      380,      340} /* NN,GC,E,T,A */
09083      , {      430,      310,      430,      380,      340} /* NN,GC,E,T,C */
09084      , {      430,      310,      430,      380,      340} /* NN,GC,E,T,G */
09085      , {      430,      310,      430,      380,      340} /* NN,GC,E,T,T */
09086      }
09087      }
09088      , {{{      430,      310,      430,      380,      340} /* NN,GC,A,E,E */
09089      , {      430,      310,      430,      380,      340} /* NN,GC,A,E,A */
09090      , {      430,      310,      430,      380,      340} /* NN,GC,A,E,C */
09091      , {      430,      310,      430,      380,      340} /* NN,GC,A,E,G */
09092      , {      430,      310,      430,      380,      340} /* NN,GC,A,E,T */
09093      }
09094      , {{{     -100,     -220,     -100,     -150,     -190} /* NN,GC,A,A,E */
09095      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,A,A,A */
09096      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,A,A,C */
09097      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,A,A,G */
09098      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,A,A,T */
09099      }
09100      , {{{      190,       70,      190,      140,      100} /* NN,GC,A,C,E */
09101      , {      190,       70,      190,      140,      100} /* NN,GC,A,C,A */
09102      , {      190,       70,      190,      140,      100} /* NN,GC,A,C,C */
09103      , {      190,       70,      190,      140,      100} /* NN,GC,A,C,G */
09104      , {      190,       70,      190,      140,      100} /* NN,GC,A,C,T */
09105      }
09106      , {{       10,     -110,       10,     -40,     -80} /* NN,GC,A,G,E */
09107      , {       10,     -110,       10,     -40,     -80} /* NN,GC,A,G,A */
09108      , {       10,     -110,       10,     -40,     -80} /* NN,GC,A,G,C */
09109      , {       10,     -110,       10,     -40,     -80} /* NN,GC,A,G,G */
09110      , {       10,     -110,       10,     -40,     -80} /* NN,GC,A,G,T */
09111      }
09112      , {{      430,      310,      430,      380,      340} /* NN,GC,A,T,E */
09113      , {      430,      310,      430,      380,      340} /* NN,GC,A,T,A */
09114      , {      430,      310,      430,      380,      340} /* NN,GC,A,T,C */
09115      , {      430,      310,      430,      380,      340} /* NN,GC,A,T,G */
09116      , {      430,      310,      430,      380,      340} /* NN,GC,A,T,T */
09117      }
09118      }
09119      , {{{      430,      310,      430,      380,      340} /* NN,GC,C,E,E */
09120      , {      430,      310,      430,      380,      340} /* NN,GC,C,E,A */
09121      , {      430,      310,      430,      380,      340} /* NN,GC,C,E,C */
09122      , {      430,      310,      430,      380,      340} /* NN,GC,C,E,G */
09123      , {      430,      310,      430,      380,      340} /* NN,GC,C,E,T */
09124      }
09125      , {{{     -100,     -220,     -100,     -150,     -190} /* NN,GC,C,A,E */
09126      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,C,A,A */
09127      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,C,A,C */
09128      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,C,A,G */
09129      , {     -100,     -220,     -100,     -150,     -190} /* NN,GC,C,A,T */
09130      }
09131      , {{{      190,       70,      190,      140,      100} /* NN,GC,C,C,E */
09132      , {      190,       70,      190,      140,      100} /* NN,GC,C,C,A */
09133      , {      190,       70,      190,      140,      100} /* NN,GC,C,C,C */

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09134 , { 190, 70, 190, 140, 100} /* NN,GC,C,C,G */
09135 , { 190, 70, 190, 140, 100} /* NN,GC,C,C,T */
09136 }
09137 , {{ 10, -110, 10, -40, -80} /* NN,GC,C,G,E */
09138 , { 10, -110, 10, -40, -80} /* NN,GC,C,G,A */
09139 , { 10, -110, 10, -40, -80} /* NN,GC,C,G,C */
09140 , { 10, -110, 10, -40, -80} /* NN,GC,C,G,G */
09141 , { 10, -110, 10, -40, -80} /* NN,GC,C,G,T */
09142 }
09143 , {{ 430, 310, 430, 380, 340} /* NN,GC,C,T,E */
09144 , { 430, 310, 430, 380, 340} /* NN,GC,C,T,A */
09145 , { 430, 310, 430, 380, 340} /* NN,GC,C,T,C */
09146 , { 430, 310, 430, 380, 340} /* NN,GC,C,T,G */
09147 , { 430, 310, 430, 380, 340} /* NN,GC,C,T,T */
09148 }
09149 }
09150 , {{{ 430, 310, 430, 380, 340} /* NN,GC,G,E,E */
09151 , { 430, 310, 430, 380, 340} /* NN,GC,G,E,A */
09152 , { 430, 310, 430, 380, 340} /* NN,GC,G,E,C */
09153 , { 430, 310, 430, 380, 340} /* NN,GC,G,E,G */
09154 , { 430, 310, 430, 380, 340} /* NN,GC,G,E,T */
09155 }
09156 , {{ -100, -220, -100, -150, -190} /* NN,GC,G,A,E */
09157 , { -100, -220, -100, -150, -190} /* NN,GC,G,A,A */
09158 , { -100, -220, -100, -150, -190} /* NN,GC,G,A,C */
09159 , { -100, -220, -100, -150, -190} /* NN,GC,G,A,G */
09160 , { -100, -220, -100, -150, -190} /* NN,GC,G,A,T */
09161 }
09162 , {{ 190, 70, 190, 140, 100} /* NN,GC,G,C,E */
09163 , { 190, 70, 190, 140, 100} /* NN,GC,G,C,A */
09164 , { 190, 70, 190, 140, 100} /* NN,GC,G,C,C */
09165 , { 190, 70, 190, 140, 100} /* NN,GC,G,C,G */
09166 , { 190, 70, 190, 140, 100} /* NN,GC,G,C,T */
09167 }
09168 , {{ 10, -110, 10, -40, -80} /* NN,GC,G,G,E */
09169 , { 10, -110, 10, -40, -80} /* NN,GC,G,G,A */
09170 , { 10, -110, 10, -40, -80} /* NN,GC,G,G,C */
09171 , { 10, -110, 10, -40, -80} /* NN,GC,G,G,G */
09172 , { 10, -110, 10, -40, -80} /* NN,GC,G,G,T */
09173 }
09174 , {{ 430, 310, 430, 380, 340} /* NN,GC,G,T,E */
09175 , { 430, 310, 430, 380, 340} /* NN,GC,G,T,A */
09176 , { 430, 310, 430, 380, 340} /* NN,GC,G,T,C */
09177 , { 430, 310, 430, 380, 340} /* NN,GC,G,T,G */
09178 , { 430, 310, 430, 380, 340} /* NN,GC,G,T,T */
09179 }
09180 }
09181 , {{{ 430, 310, 430, 380, 340} /* NN,GC,T,E,E */
09182 , { 430, 310, 430, 380, 340} /* NN,GC,T,E,A */
09183 , { 430, 310, 430, 380, 340} /* NN,GC,T,E,C */
09184 , { 430, 310, 430, 380, 340} /* NN,GC,T,E,G */
09185 , { 430, 310, 430, 380, 340} /* NN,GC,T,E,T */
09186 }
09187 , {{ -100, -220, -100, -150, -190} /* NN,GC,T,A,E */
09188 , { -100, -220, -100, -150, -190} /* NN,GC,T,A,A */
09189 , { -100, -220, -100, -150, -190} /* NN,GC,T,A,C */
09190 , { -100, -220, -100, -150, -190} /* NN,GC,T,A,G */
09191 , { -100, -220, -100, -150, -190} /* NN,GC,T,A,T */
09192 }
09193 , {{{ 190, 70, 190, 140, 100} /* NN,GC,T,C,E */
09194 , { 190, 70, 190, 140, 100} /* NN,GC,T,C,A */
09195 , { 190, 70, 190, 140, 100} /* NN,GC,T,C,C */
09196 , { 190, 70, 190, 140, 100} /* NN,GC,T,C,G */
09197 , { 190, 70, 190, 140, 100} /* NN,GC,T,C,T */
09198 }
09199 , {{ 10, -110, 10, -40, -80} /* NN,GC,T,G,E */
09200 , { 10, -110, 10, -40, -80} /* NN,GC,T,G,A */
09201 , { 10, -110, 10, -40, -80} /* NN,GC,T,G,C */
09202 , { 10, -110, 10, -40, -80} /* NN,GC,T,G,G */
09203 , { 10, -110, 10, -40, -80} /* NN,GC,T,G,T */
09204 }
09205 , {{{ 430, 310, 430, 380, 340} /* NN,GC,T,T,E */
09206 , { 430, 310, 430, 380, 340} /* NN,GC,T,T,A */
09207 , { 430, 310, 430, 380, 340} /* NN,GC,T,T,C */
09208 , { 430, 310, 430, 380, 340} /* NN,GC,T,T,G */
09209 , { 430, 310, 430, 380, 340} /* NN,GC,T,T,T */
09210 }
09211 }
09212 }
09213 , {{{ 750, 630, 750, 700, 660} /* NN,GT,E,E,E */
09214 , { 750, 630, 750, 700, 660} /* NN,GT,E,E,A */
09215 , { 750, 630, 750, 700, 660} /* NN,GT,E,E,C */
09216 , { 750, 630, 750, 700, 660} /* NN,GT,E,E,G */
09217 , { 750, 630, 750, 700, 660} /* NN,GT,E,E,T */
09218 }
09219 , {{ 220, 100, 220, 170, 130} /* NN,GT,E,A,E */
09220 , { 220, 100, 220, 170, 130} /* NN,GT,E,A,A */
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09221      , {      220,      100,      220,      170,      130} /* NN,GT,E,A,C */
09222      , {      220,      100,      220,      170,      130} /* NN,GT,E,A,G */
09223      , {      220,      100,      220,      170,      130} /* NN,GT,E,A,T */
09224      }
09225      , {{      510,      390,      510,      460,      420} /* NN,GT,E,C,E */
09226      , {      510,      390,      510,      460,      420} /* NN,GT,E,C,A */
09227      , {      510,      390,      510,      460,      420} /* NN,GT,E,C,C */
09228      , {      510,      390,      510,      460,      420} /* NN,GT,E,C,G */
09229      , {      510,      390,      510,      460,      420} /* NN,GT,E,C,T */
09230      }
09231      , {{      330,      210,      330,      280,      240} /* NN,GT,E,G,E */
09232      , {      330,      210,      330,      280,      240} /* NN,GT,E,G,A */
09233      , {      330,      210,      330,      280,      240} /* NN,GT,E,G,C */
09234      , {      330,      210,      330,      280,      240} /* NN,GT,E,G,G */
09235      , {      330,      210,      330,      280,      240} /* NN,GT,E,G,T */
09236      }
09237      , {{      750,      630,      750,      700,      660} /* NN,GT,E,T,E */
09238      , {      750,      630,      750,      700,      660} /* NN,GT,E,T,A */
09239      , {      750,      630,      750,      700,      660} /* NN,GT,E,T,C */
09240      , {      750,      630,      750,      700,      660} /* NN,GT,E,T,G */
09241      , {      750,      630,      750,      700,      660} /* NN,GT,E,T,T */
09242      }
09243      }
09244      , {{{      750,      630,      750,      700,      660} /* NN,GT,A,E,E */
09245      , {      750,      630,      750,      700,      660} /* NN,GT,A,E,A */
09246      , {      750,      630,      750,      700,      660} /* NN,GT,A,E,C */
09247      , {      750,      630,      750,      700,      660} /* NN,GT,A,E,G */
09248      , {      750,      630,      750,      700,      660} /* NN,GT,A,E,T */
09249      }
09250      , {{      220,      100,      220,      170,      130} /* NN,GT,A,A,E */
09251      , {      220,      100,      220,      170,      130} /* NN,GT,A,A,A */
09252      , {      220,      100,      220,      170,      130} /* NN,GT,A,A,C */
09253      , {      220,      100,      220,      170,      130} /* NN,GT,A,A,G */
09254      , {      220,      100,      220,      170,      130} /* NN,GT,A,A,T */
09255      }
09256      , {{      510,      390,      510,      460,      420} /* NN,GT,A,C,E */
09257      , {      510,      390,      510,      460,      420} /* NN,GT,A,C,A */
09258      , {      510,      390,      510,      460,      420} /* NN,GT,A,C,C */
09259      , {      510,      390,      510,      460,      420} /* NN,GT,A,C,G */
09260      , {      510,      390,      510,      460,      420} /* NN,GT,A,C,T */
09261      }
09262      , {{      330,      210,      330,      280,      240} /* NN,GT,A,G,E */
09263      , {      330,      210,      330,      280,      240} /* NN,GT,A,G,A */
09264      , {      330,      210,      330,      280,      240} /* NN,GT,A,G,C */
09265      , {      330,      210,      330,      280,      240} /* NN,GT,A,G,G */
09266      , {      330,      210,      330,      280,      240} /* NN,GT,A,G,T */
09267      }
09268      , {{{      750,      630,      750,      700,      660} /* NN,GT,A,T,E */
09269      , {      750,      630,      750,      700,      660} /* NN,GT,A,T,A */
09270      , {      750,      630,      750,      700,      660} /* NN,GT,A,T,C */
09271      , {      750,      630,      750,      700,      660} /* NN,GT,A,T,G */
09272      , {      750,      630,      750,      700,      660} /* NN,GT,A,T,T */
09273      }
09274      }
09275      , {{{      750,      630,      750,      700,      660} /* NN,GT,C,E,E */
09276      , {      750,      630,      750,      700,      660} /* NN,GT,C,E,A */
09277      , {      750,      630,      750,      700,      660} /* NN,GT,C,E,C */
09278      , {      750,      630,      750,      700,      660} /* NN,GT,C,E,G */
09279      , {      750,      630,      750,      700,      660} /* NN,GT,C,E,T */
09280      }
09281      , {{      220,      100,      220,      170,      130} /* NN,GT,C,A,E */
09282      , {      220,      100,      220,      170,      130} /* NN,GT,C,A,A */
09283      , {      220,      100,      220,      170,      130} /* NN,GT,C,A,C */
09284      , {      220,      100,      220,      170,      130} /* NN,GT,C,A,G */
09285      , {      220,      100,      220,      170,      130} /* NN,GT,C,A,T */
09286      }
09287      , {{      510,      390,      510,      460,      420} /* NN,GT,C,C,E */
09288      , {      510,      390,      510,      460,      420} /* NN,GT,C,C,A */
09289      , {      510,      390,      510,      460,      420} /* NN,GT,C,C,C */
09290      , {      510,      390,      510,      460,      420} /* NN,GT,C,C,G */
09291      , {      510,      390,      510,      460,      420} /* NN,GT,C,C,T */
09292      }
09293      , {{      330,      210,      330,      280,      240} /* NN,GT,C,G,E */
09294      , {      330,      210,      330,      280,      240} /* NN,GT,C,G,A */
09295      , {      330,      210,      330,      280,      240} /* NN,GT,C,G,C */
09296      , {      330,      210,      330,      280,      240} /* NN,GT,C,G,G */
09297      , {      330,      210,      330,      280,      240} /* NN,GT,C,G,T */
09298      }
09299      , {{{      750,      630,      750,      700,      660} /* NN,GT,C,T,E */
09300      , {      750,      630,      750,      700,      660} /* NN,GT,C,T,A */
09301      , {      750,      630,      750,      700,      660} /* NN,GT,C,T,C */
09302      , {      750,      630,      750,      700,      660} /* NN,GT,C,T,G */
09303      , {      750,      630,      750,      700,      660} /* NN,GT,C,T,T */
09304      }
09305      }
09306      , {{{      750,      630,      750,      700,      660} /* NN,GT,G,E,E */
09307      , {      750,      630,      750,      700,      660} /* NN,GT,G,E,A */

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09308      , {      750,      630,      750,      700,      660} /* NN,GT,G,E,C */
09309      , {      750,      630,      750,      700,      660} /* NN,GT,G,E,G */
09310      , {      750,      630,      750,      700,      660} /* NN,GT,G,E,T */
09311      }
09312      , {{      220,      100,      220,      170,      130} /* NN,GT,G,A,E */
09313      , {      220,      100,      220,      170,      130} /* NN,GT,G,A,A */
09314      , {      220,      100,      220,      170,      130} /* NN,GT,G,A,C */
09315      , {      220,      100,      220,      170,      130} /* NN,GT,G,A,G */
09316      , {      220,      100,      220,      170,      130} /* NN,GT,G,A,T */
09317      }
09318      , {{      510,      390,      510,      460,      420} /* NN,GT,G,C,E */
09319      , {      510,      390,      510,      460,      420} /* NN,GT,G,C,A */
09320      , {      510,      390,      510,      460,      420} /* NN,GT,G,C,C */
09321      , {      510,      390,      510,      460,      420} /* NN,GT,G,C,G */
09322      , {      510,      390,      510,      460,      420} /* NN,GT,G,C,T */
09323      }
09324      , {{      330,      210,      330,      280,      240} /* NN,GT,G,G,E */
09325      , {      330,      210,      330,      280,      240} /* NN,GT,G,G,A */
09326      , {      330,      210,      330,      280,      240} /* NN,GT,G,G,C */
09327      , {      330,      210,      330,      280,      240} /* NN,GT,G,G,G */
09328      , {      330,      210,      330,      280,      240} /* NN,GT,G,G,T */
09329      }
09330      , {{      750,      630,      750,      700,      660} /* NN,GT,G,T,E */
09331      , {      750,      630,      750,      700,      660} /* NN,GT,G,T,A */
09332      , {      750,      630,      750,      700,      660} /* NN,GT,G,T,C */
09333      , {      750,      630,      750,      700,      660} /* NN,GT,G,T,G */
09334      , {      750,      630,      750,      700,      660} /* NN,GT,G,T,T */
09335      }
09336      }
09337      , {{{      750,      630,      750,      700,      660} /* NN,GT,T,E,E */
09338      , {      750,      630,      750,      700,      660} /* NN,GT,T,E,A */
09339      , {      750,      630,      750,      700,      660} /* NN,GT,T,E,C */
09340      , {      750,      630,      750,      700,      660} /* NN,GT,T,E,G */
09341      , {      750,      630,      750,      700,      660} /* NN,GT,T,E,T */
09342      }
09343      , {{      220,      100,      220,      170,      130} /* NN,GT,T,A,E */
09344      , {      220,      100,      220,      170,      130} /* NN,GT,T,A,A */
09345      , {      220,      100,      220,      170,      130} /* NN,GT,T,A,C */
09346      , {      220,      100,      220,      170,      130} /* NN,GT,T,A,G */
09347      , {      220,      100,      220,      170,      130} /* NN,GT,T,A,T */
09348      }
09349      , {{      510,      390,      510,      460,      420} /* NN,GT,T,C,E */
09350      , {      510,      390,      510,      460,      420} /* NN,GT,T,C,A */
09351      , {      510,      390,      510,      460,      420} /* NN,GT,T,C,C */
09352      , {      510,      390,      510,      460,      420} /* NN,GT,T,C,G */
09353      , {      510,      390,      510,      460,      420} /* NN,GT,T,C,T */
09354      }
09355      , {{      330,      210,      330,      280,      240} /* NN,GT,T,G,E */
09356      , {      330,      210,      330,      280,      240} /* NN,GT,T,G,A */
09357      , {      330,      210,      330,      280,      240} /* NN,GT,T,G,C */
09358      , {      330,      210,      330,      280,      240} /* NN,GT,T,G,G */
09359      , {      330,      210,      330,      280,      240} /* NN,GT,T,G,T */
09360      }
09361      , {{{      750,      630,      750,      700,      660} /* NN,GT,T,T,E */
09362      , {      750,      630,      750,      700,      660} /* NN,GT,T,T,A */
09363      , {      750,      630,      750,      700,      660} /* NN,GT,T,T,C */
09364      , {      750,      630,      750,      700,      660} /* NN,GT,T,T,G */
09365      , {      750,      630,      750,      700,      660} /* NN,GT,T,T,T */
09366      }
09367      }
09368      }
09369      , {{{      780,      660,      780,      730,      690} /* NN,TG,E,E,E */
09370      , {      780,      660,      780,      730,      690} /* NN,TG,E,E,A */
09371      , {      780,      660,      780,      730,      690} /* NN,TG,E,E,C */
09372      , {      780,      660,      780,      730,      690} /* NN,TG,E,E,G */
09373      , {      780,      660,      780,      730,      690} /* NN,TG,E,E,T */
09374      }
09375      , {{      750,      630,      750,      700,      660} /* NN,TG,E,A,E */
09376      , {      750,      630,      750,      700,      660} /* NN,TG,E,A,A */
09377      , {      750,      630,      750,      700,      660} /* NN,TG,E,A,C */
09378      , {      750,      630,      750,      700,      660} /* NN,TG,E,A,G */
09379      , {      750,      630,      750,      700,      660} /* NN,TG,E,A,T */
09380      }
09381      , {{      780,      660,      780,      730,      690} /* NN,TG,E,C,E */
09382      , {      780,      660,      780,      730,      690} /* NN,TG,E,C,A */
09383      , {      780,      660,      780,      730,      690} /* NN,TG,E,C,C */
09384      , {      780,      660,      780,      730,      690} /* NN,TG,E,C,G */
09385      , {      780,      660,      780,      730,      690} /* NN,TG,E,C,T */
09386      }
09387      , {{      590,      470,      590,      540,      500} /* NN,TG,E,G,E */
09388      , {      590,      470,      590,      540,      500} /* NN,TG,E,G,A */
09389      , {      590,      470,      590,      540,      500} /* NN,TG,E,G,C */
09390      , {      590,      470,      590,      540,      500} /* NN,TG,E,G,G */
09391      , {      590,      470,      590,      540,      500} /* NN,TG,E,G,T */
09392      }
09393      , {{      -60,     -180,     -60,     -110,     -150} /* NN,TG,E,T,E */
09394      , {      -60,     -180,     -60,     -110,     -150} /* NN,TG,E,T,A */

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09395      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, E, T, C */
09396      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, E, T, G */
09397      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, E, T, T */
09398      }
09399      }
09400      , { { {      780,      660,      780,      730,      690} /* NN, TG, A, E, E */
09401      , {      780,      660,      780,      730,      690} /* NN, TG, A, E, A */
09402      , {      780,      660,      780,      730,      690} /* NN, TG, A, E, C */
09403      , {      780,      660,      780,      730,      690} /* NN, TG, A, E, G */
09404      , {      780,      660,      780,      730,      690} /* NN, TG, A, E, T */
09405      }
09406      , { {      750,      630,      750,      700,      660} /* NN, TG, A, A, E */
09407      , {      750,      630,      750,      700,      660} /* NN, TG, A, A, A */
09408      , {      750,      630,      750,      700,      660} /* NN, TG, A, A, C */
09409      , {      750,      630,      750,      700,      660} /* NN, TG, A, A, G */
09410      , {      750,      630,      750,      700,      660} /* NN, TG, A, A, T */
09411      }
09412      , { {      780,      660,      780,      730,      690} /* NN, TG, A, C, E */
09413      , {      780,      660,      780,      730,      690} /* NN, TG, A, C, A */
09414      , {      780,      660,      780,      730,      690} /* NN, TG, A, C, C */
09415      , {      780,      660,      780,      730,      690} /* NN, TG, A, C, G */
09416      , {      780,      660,      780,      730,      690} /* NN, TG, A, C, T */
09417      }
09418      , { {      590,      470,      590,      540,      500} /* NN, TG, A, G, E */
09419      , {      590,      470,      590,      540,      500} /* NN, TG, A, G, A */
09420      , {      590,      470,      590,      540,      500} /* NN, TG, A, G, C */
09421      , {      590,      470,      590,      540,      500} /* NN, TG, A, G, G */
09422      , {      590,      470,      590,      540,      500} /* NN, TG, A, G, T */
09423      }
09424      , { {      -60,      -180,      -60,      -110,      -150} /* NN, TG, A, T, E */
09425      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, A, T, A */
09426      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, A, T, C */
09427      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, A, T, G */
09428      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, A, T, T */
09429      }
09430      }
09431      , { { {      780,      660,      780,      730,      690} /* NN, TG, C, E, E */
09432      , {      780,      660,      780,      730,      690} /* NN, TG, C, E, A */
09433      , {      780,      660,      780,      730,      690} /* NN, TG, C, E, C */
09434      , {      780,      660,      780,      730,      690} /* NN, TG, C, E, G */
09435      , {      780,      660,      780,      730,      690} /* NN, TG, C, E, T */
09436      }
09437      , { {      750,      630,      750,      700,      660} /* NN, TG, C, A, E */
09438      , {      750,      630,      750,      700,      660} /* NN, TG, C, A, A */
09439      , {      750,      630,      750,      700,      660} /* NN, TG, C, A, C */
09440      , {      750,      630,      750,      700,      660} /* NN, TG, C, A, G */
09441      , {      750,      630,      750,      700,      660} /* NN, TG, C, A, T */
09442      }
09443      , { {      780,      660,      780,      730,      690} /* NN, TG, C, C, E */
09444      , {      780,      660,      780,      730,      690} /* NN, TG, C, C, A */
09445      , {      780,      660,      780,      730,      690} /* NN, TG, C, C, C */
09446      , {      780,      660,      780,      730,      690} /* NN, TG, C, C, G */
09447      , {      780,      660,      780,      730,      690} /* NN, TG, C, C, T */
09448      }
09449      , { {      590,      470,      590,      540,      500} /* NN, TG, C, G, E */
09450      , {      590,      470,      590,      540,      500} /* NN, TG, C, G, A */
09451      , {      590,      470,      590,      540,      500} /* NN, TG, C, G, C */
09452      , {      590,      470,      590,      540,      500} /* NN, TG, C, G, G */
09453      , {      590,      470,      590,      540,      500} /* NN, TG, C, G, T */
09454      }
09455      , { {      -60,      -180,      -60,      -110,      -150} /* NN, TG, C, T, E */
09456      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, C, T, A */
09457      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, C, T, C */
09458      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, C, T, G */
09459      , {      -60,      -180,      -60,      -110,      -150} /* NN, TG, C, T, T */
09460      }
09461      }
09462      , { { {      780,      660,      780,      730,      690} /* NN, TG, G, E, E */
09463      , {      780,      660,      780,      730,      690} /* NN, TG, G, E, A */
09464      , {      780,      660,      780,      730,      690} /* NN, TG, G, E, C */
09465      , {      780,      660,      780,      730,      690} /* NN, TG, G, E, G */
09466      , {      780,      660,      780,      730,      690} /* NN, TG, G, E, T */
09467      }
09468      , { {      750,      630,      750,      700,      660} /* NN, TG, G, A, E */
09469      , {      750,      630,      750,      700,      660} /* NN, TG, G, A, A */
09470      , {      750,      630,      750,      700,      660} /* NN, TG, G, A, C */
09471      , {      750,      630,      750,      700,      660} /* NN, TG, G, A, G */
09472      , {      750,      630,      750,      700,      660} /* NN, TG, G, A, T */
09473      }
09474      , { {      780,      660,      780,      730,      690} /* NN, TG, G, C, E */
09475      , {      780,      660,      780,      730,      690} /* NN, TG, G, C, A */
09476      , {      780,      660,      780,      730,      690} /* NN, TG, G, C, C */
09477      , {      780,      660,      780,      730,      690} /* NN, TG, G, C, G */
09478      , {      780,      660,      780,      730,      690} /* NN, TG, G, C, T */
09479      }
09480      , { {      590,      470,      590,      540,      500} /* NN, TG, G, G, E */
09481      , {      590,      470,      590,      540,      500} /* NN, TG, G, G, A */

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09482 , { 590, 470, 590, 540, 500} /* NN, TG, G, G, C */
09483 , { 590, 470, 590, 540, 500} /* NN, TG, G, G, G */
09484 , { 590, 470, 590, 540, 500} /* NN, TG, G, G, T */
09485 }
09486 , { { -60, -180, -60, -110, -150} /* NN, TG, G, T, E */
09487 , { -60, -180, -60, -110, -150} /* NN, TG, G, T, A */
09488 , { -60, -180, -60, -110, -150} /* NN, TG, G, T, C */
09489 , { -60, -180, -60, -110, -150} /* NN, TG, G, T, G */
09490 , { -60, -180, -60, -110, -150} /* NN, TG, G, T, T */
09491 }
09492 }
09493 , { { { 780, 660, 780, 730, 690} /* NN, TG, T, E, E */
09494 , { 780, 660, 780, 730, 690} /* NN, TG, T, E, A */
09495 , { 780, 660, 780, 730, 690} /* NN, TG, T, E, C */
09496 , { 780, 660, 780, 730, 690} /* NN, TG, T, E, G */
09497 , { 780, 660, 780, 730, 690} /* NN, TG, T, E, T */
09498 }
09499 , { { 750, 630, 750, 700, 660} /* NN, TG, T, A, E */
09500 , { 750, 630, 750, 700, 660} /* NN, TG, T, A, A */
09501 , { 750, 630, 750, 700, 660} /* NN, TG, T, A, C */
09502 , { 750, 630, 750, 700, 660} /* NN, TG, T, A, G */
09503 , { 750, 630, 750, 700, 660} /* NN, TG, T, A, T */
09504 }
09505 , { { 780, 660, 780, 730, 690} /* NN, TG, T, C, E */
09506 , { 780, 660, 780, 730, 690} /* NN, TG, T, C, A */
09507 , { 780, 660, 780, 730, 690} /* NN, TG, T, C, C */
09508 , { 780, 660, 780, 730, 690} /* NN, TG, T, C, G */
09509 , { 780, 660, 780, 730, 690} /* NN, TG, T, C, T */
09510 }
09511 , { { 590, 470, 590, 540, 500} /* NN, TG, T, G, E */
09512 , { 590, 470, 590, 540, 500} /* NN, TG, T, G, A */
09513 , { 590, 470, 590, 540, 500} /* NN, TG, T, G, C */
09514 , { 590, 470, 590, 540, 500} /* NN, TG, T, G, G */
09515 , { 590, 470, 590, 540, 500} /* NN, TG, T, G, T */
09516 }
09517 , { { -60, -180, -60, -110, -150} /* NN, TG, T, T, E */
09518 , { -60, -180, -60, -110, -150} /* NN, TG, T, T, A */
09519 , { -60, -180, -60, -110, -150} /* NN, TG, T, T, C */
09520 , { -60, -180, -60, -110, -150} /* NN, TG, T, T, G */
09521 , { -60, -180, -60, -110, -150} /* NN, TG, T, T, T */
09522 }
09523 }
09524 }
09525 , { { { 1040, 920, 1040, 990, 950} /* NN, AT, E, E, E */
09526 , { 1040, 920, 1040, 990, 950} /* NN, AT, E, E, A */
09527 , { 1040, 920, 1040, 990, 950} /* NN, AT, E, E, C */
09528 , { 1040, 920, 1040, 990, 950} /* NN, AT, E, E, G */
09529 , { 1040, 920, 1040, 990, 950} /* NN, AT, E, E, T */
09530 }
09531 , { { 920, 800, 920, 870, 830} /* NN, AT, E, A, E */
09532 , { 920, 800, 920, 870, 830} /* NN, AT, E, A, A */
09533 , { 920, 800, 920, 870, 830} /* NN, AT, E, A, C */
09534 , { 920, 800, 920, 870, 830} /* NN, AT, E, A, G */
09535 , { 920, 800, 920, 870, 830} /* NN, AT, E, A, T */
09536 }
09537 , { { 1040, 920, 1040, 990, 950} /* NN, AT, E, C, E */
09538 , { 1040, 920, 1040, 990, 950} /* NN, AT, E, C, A */
09539 , { 1040, 920, 1040, 990, 950} /* NN, AT, E, C, C */
09540 , { 1040, 920, 1040, 990, 950} /* NN, AT, E, C, G */
09541 , { 1040, 920, 1040, 990, 950} /* NN, AT, E, C, T */
09542 }
09543 , { { 990, 870, 990, 940, 900} /* NN, AT, E, G, E */
09544 , { 990, 870, 990, 940, 900} /* NN, AT, E, G, A */
09545 , { 990, 870, 990, 940, 900} /* NN, AT, E, G, C */
09546 , { 990, 870, 990, 940, 900} /* NN, AT, E, G, G */
09547 , { 990, 870, 990, 940, 900} /* NN, AT, E, G, T */
09548 }
09549 , { { 950, 830, 950, 900, 860} /* NN, AT, E, T, E */
09550 , { 950, 830, 950, 900, 860} /* NN, AT, E, T, A */
09551 , { 950, 830, 950, 900, 860} /* NN, AT, E, T, C */
09552 , { 950, 830, 950, 900, 860} /* NN, AT, E, T, G */
09553 , { 950, 830, 950, 900, 860} /* NN, AT, E, T, T */
09554 }
09555 }
09556 , { { { 1040, 920, 1040, 990, 950} /* NN, AT, A, E, E */
09557 , { 1040, 920, 1040, 990, 950} /* NN, AT, A, E, A */
09558 , { 1040, 920, 1040, 990, 950} /* NN, AT, A, E, C */
09559 , { 1040, 920, 1040, 990, 950} /* NN, AT, A, E, G */
09560 , { 1040, 920, 1040, 990, 950} /* NN, AT, A, E, T */
09561 }
09562 , { { 920, 800, 920, 870, 830} /* NN, AT, A, A, E */
09563 , { 920, 800, 920, 870, 830} /* NN, AT, A, A, A */
09564 , { 920, 800, 920, 870, 830} /* NN, AT, A, A, C */
09565 , { 920, 800, 920, 870, 830} /* NN, AT, A, A, G */
09566 , { 920, 800, 920, 870, 830} /* NN, AT, A, A, T */
09567 }
09568 , { { 1040, 920, 1040, 990, 950} /* NN, AT, A, C, E */

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```

09569 , { 1040, 920, 1040, 990, 950} /* NN,AT,A,C,A */
09570 , { 1040, 920, 1040, 990, 950} /* NN,AT,A,C,C */
09571 , { 1040, 920, 1040, 990, 950} /* NN,AT,A,C,G */
09572 , { 1040, 920, 1040, 990, 950} /* NN,AT,A,C,T */
09573 }
09574 , { { 990, 870, 990, 940, 900} /* NN,AT,A,G,E */
09575 , { 990, 870, 990, 940, 900} /* NN,AT,A,G,A */
09576 , { 990, 870, 990, 940, 900} /* NN,AT,A,G,C */
09577 , { 990, 870, 990, 940, 900} /* NN,AT,A,G,G */
09578 , { 990, 870, 990, 940, 900} /* NN,AT,A,G,T */
09579 }
09580 , { { 950, 830, 950, 900, 860} /* NN,AT,A,T,E */
09581 , { 950, 830, 950, 900, 860} /* NN,AT,A,T,A */
09582 , { 950, 830, 950, 900, 860} /* NN,AT,A,T,C */
09583 , { 950, 830, 950, 900, 860} /* NN,AT,A,T,G */
09584 , { 950, 830, 950, 900, 860} /* NN,AT,A,T,T */
09585 }
09586 }
09587 , { { { 1040, 920, 1040, 990, 950} /* NN,AT,C,E,E */
09588 , { 1040, 920, 1040, 990, 950} /* NN,AT,C,E,A */
09589 , { 1040, 920, 1040, 990, 950} /* NN,AT,C,E,C */
09590 , { 1040, 920, 1040, 990, 950} /* NN,AT,C,E,G */
09591 , { 1040, 920, 1040, 990, 950} /* NN,AT,C,E,T */
09592 }
09593 , { { 920, 800, 920, 870, 830} /* NN,AT,C,A,E */
09594 , { 920, 800, 920, 870, 830} /* NN,AT,C,A,A */
09595 , { 920, 800, 920, 870, 830} /* NN,AT,C,A,C */
09596 , { 920, 800, 920, 870, 830} /* NN,AT,C,A,G */
09597 , { 920, 800, 920, 870, 830} /* NN,AT,C,A,T */
09598 }
09599 , { { 1040, 920, 1040, 990, 950} /* NN,AT,C,C,E */
09600 , { 1040, 920, 1040, 990, 950} /* NN,AT,C,C,A */
09601 , { 1040, 920, 1040, 990, 950} /* NN,AT,C,C,C */
09602 , { 1040, 920, 1040, 990, 950} /* NN,AT,C,C,G */
09603 , { 1040, 920, 1040, 990, 950} /* NN,AT,C,C,T */
09604 }
09605 , { { 990, 870, 990, 940, 900} /* NN,AT,C,G,E */
09606 , { 990, 870, 990, 940, 900} /* NN,AT,C,G,A */
09607 , { 990, 870, 990, 940, 900} /* NN,AT,C,G,C */
09608 , { 990, 870, 990, 940, 900} /* NN,AT,C,G,G */
09609 , { 990, 870, 990, 940, 900} /* NN,AT,C,G,T */
09610 }
09611 , { { 950, 830, 950, 900, 860} /* NN,AT,C,T,E */
09612 , { 950, 830, 950, 900, 860} /* NN,AT,C,T,A */
09613 , { 950, 830, 950, 900, 860} /* NN,AT,C,T,C */
09614 , { 950, 830, 950, 900, 860} /* NN,AT,C,T,G */
09615 , { 950, 830, 950, 900, 860} /* NN,AT,C,T,T */
09616 }
09617 }
09618 , { { { 1040, 920, 1040, 990, 950} /* NN,AT,G,E,E */
09619 , { 1040, 920, 1040, 990, 950} /* NN,AT,G,E,A */
09620 , { 1040, 920, 1040, 990, 950} /* NN,AT,G,E,C */
09621 , { 1040, 920, 1040, 990, 950} /* NN,AT,G,E,G */
09622 , { 1040, 920, 1040, 990, 950} /* NN,AT,G,E,T */
09623 }
09624 , { { 920, 800, 920, 870, 830} /* NN,AT,G,A,E */
09625 , { 920, 800, 920, 870, 830} /* NN,AT,G,A,A */
09626 , { 920, 800, 920, 870, 830} /* NN,AT,G,A,C */
09627 , { 920, 800, 920, 870, 830} /* NN,AT,G,A,G */
09628 , { 920, 800, 920, 870, 830} /* NN,AT,G,A,T */
09629 }
09630 , { { { 1040, 920, 1040, 990, 950} /* NN,AT,G,C,E */
09631 , { 1040, 920, 1040, 990, 950} /* NN,AT,G,C,A */
09632 , { 1040, 920, 1040, 990, 950} /* NN,AT,G,C,C */
09633 , { 1040, 920, 1040, 990, 950} /* NN,AT,G,C,G */
09634 , { 1040, 920, 1040, 990, 950} /* NN,AT,G,C,T */
09635 }
09636 , { { 990, 870, 990, 940, 900} /* NN,AT,G,G,E */
09637 , { 990, 870, 990, 940, 900} /* NN,AT,G,G,A */
09638 , { 990, 870, 990, 940, 900} /* NN,AT,G,G,C */
09639 , { 990, 870, 990, 940, 900} /* NN,AT,G,G,G */
09640 , { 990, 870, 990, 940, 900} /* NN,AT,G,G,T */
09641 }
09642 , { { 950, 830, 950, 900, 860} /* NN,AT,G,T,E */
09643 , { 950, 830, 950, 900, 860} /* NN,AT,G,T,A */
09644 , { 950, 830, 950, 900, 860} /* NN,AT,G,T,C */
09645 , { 950, 830, 950, 900, 860} /* NN,AT,G,T,G */
09646 , { 950, 830, 950, 900, 860} /* NN,AT,G,T,T */
09647 }
09648 }
09649 , { { { { 1040, 920, 1040, 990, 950} /* NN,AT,T,E,E */
09650 , { 1040, 920, 1040, 990, 950} /* NN,AT,T,E,A */
09651 , { 1040, 920, 1040, 990, 950} /* NN,AT,T,E,C */
09652 , { 1040, 920, 1040, 990, 950} /* NN,AT,T,E,G */
09653 , { 1040, 920, 1040, 990, 950} /* NN,AT,T,E,T */
09654 }
09655 , { { 920, 800, 920, 870, 830} /* NN,AT,T,A,E */

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09656 , { 920, 800, 920, 870, 830} /* NN,AT,T,A,A */
09657 , { 920, 800, 920, 870, 830} /* NN,AT,T,A,C */
09658 , { 920, 800, 920, 870, 830} /* NN,AT,T,A,G */
09659 , { 920, 800, 920, 870, 830} /* NN,AT,T,A,T */
09660 }
09661 , { { 1040, 920, 1040, 990, 950} /* NN,AT,T,C,E */
09662 , { 1040, 920, 1040, 990, 950} /* NN,AT,T,C,A */
09663 , { 1040, 920, 1040, 990, 950} /* NN,AT,T,C,C */
09664 , { 1040, 920, 1040, 990, 950} /* NN,AT,T,C,G */
09665 , { 1040, 920, 1040, 990, 950} /* NN,AT,T,C,T */
09666 }
09667 , { { 990, 870, 990, 940, 900} /* NN,AT,T,G,E */
09668 , { 990, 870, 990, 940, 900} /* NN,AT,T,G,A */
09669 , { 990, 870, 990, 940, 900} /* NN,AT,T,G,C */
09670 , { 990, 870, 990, 940, 900} /* NN,AT,T,G,G */
09671 , { 990, 870, 990, 940, 900} /* NN,AT,T,G,T */
09672 }
09673 , { { 950, 830, 950, 900, 860} /* NN,AT,T,T,E */
09674 , { 950, 830, 950, 900, 860} /* NN,AT,T,T,A */
09675 , { 950, 830, 950, 900, 860} /* NN,AT,T,T,C */
09676 , { 950, 830, 950, 900, 860} /* NN,AT,T,T,G */
09677 , { 950, 830, 950, 900, 860} /* NN,AT,T,T,T */
09678 }
09679 }
09680 }
09681 , { { { 780, 660, 780, 730, 690} /* NN,TA,E,E,E */
09682 , { 780, 660, 780, 730, 690} /* NN,TA,E,E,A */
09683 , { 780, 660, 780, 730, 690} /* NN,TA,E,E,C */
09684 , { 780, 660, 780, 730, 690} /* NN,TA,E,E,G */
09685 , { 780, 660, 780, 730, 690} /* NN,TA,E,E,T */
09686 }
09687 , { { 750, 630, 750, 700, 660} /* NN,TA,E,A,E */
09688 , { 750, 630, 750, 700, 660} /* NN,TA,E,A,A */
09689 , { 750, 630, 750, 700, 660} /* NN,TA,E,A,C */
09690 , { 750, 630, 750, 700, 660} /* NN,TA,E,A,G */
09691 , { 750, 630, 750, 700, 660} /* NN,TA,E,A,T */
09692 }
09693 , { { 780, 660, 780, 730, 690} /* NN,TA,E,C,E */
09694 , { 780, 660, 780, 730, 690} /* NN,TA,E,C,A */
09695 , { 780, 660, 780, 730, 690} /* NN,TA,E,C,C */
09696 , { 780, 660, 780, 730, 690} /* NN,TA,E,C,G */
09697 , { 780, 660, 780, 730, 690} /* NN,TA,E,C,T */
09698 }
09699 , { { 590, 470, 590, 540, 500} /* NN,TA,E,G,E */
09700 , { 590, 470, 590, 540, 500} /* NN,TA,E,G,A */
09701 , { 590, 470, 590, 540, 500} /* NN,TA,E,G,C */
09702 , { 590, 470, 590, 540, 500} /* NN,TA,E,G,G */
09703 , { 590, 470, 590, 540, 500} /* NN,TA,E,G,T */
09704 }
09705 , { { -60, -180, -60, -110, -150} /* NN,TA,E,T,E */
09706 , { -60, -180, -60, -110, -150} /* NN,TA,E,T,A */
09707 , { -60, -180, -60, -110, -150} /* NN,TA,E,T,C */
09708 , { -60, -180, -60, -110, -150} /* NN,TA,E,T,G */
09709 , { -60, -180, -60, -110, -150} /* NN,TA,E,T,T */
09710 }
09711 }
09712 , { { { 780, 660, 780, 730, 690} /* NN,TA,A,E,E */
09713 , { 780, 660, 780, 730, 690} /* NN,TA,A,E,A */
09714 , { 780, 660, 780, 730, 690} /* NN,TA,A,E,C */
09715 , { 780, 660, 780, 730, 690} /* NN,TA,A,E,G */
09716 , { 780, 660, 780, 730, 690} /* NN,TA,A,E,T */
09717 }
09718 , { { 750, 630, 750, 700, 660} /* NN,TA,A,A,E */
09719 , { 750, 630, 750, 700, 660} /* NN,TA,A,A,A */
09720 , { 750, 630, 750, 700, 660} /* NN,TA,A,A,C */
09721 , { 750, 630, 750, 700, 660} /* NN,TA,A,A,G */
09722 , { 750, 630, 750, 700, 660} /* NN,TA,A,A,T */
09723 }
09724 , { { 780, 660, 780, 730, 690} /* NN,TA,A,C,E */
09725 , { 780, 660, 780, 730, 690} /* NN,TA,A,C,A */
09726 , { 780, 660, 780, 730, 690} /* NN,TA,A,C,C */
09727 , { 780, 660, 780, 730, 690} /* NN,TA,A,C,G */
09728 , { 780, 660, 780, 730, 690} /* NN,TA,A,C,T */
09729 }
09730 , { { 590, 470, 590, 540, 500} /* NN,TA,A,G,E */
09731 , { 590, 470, 590, 540, 500} /* NN,TA,A,G,A */
09732 , { 590, 470, 590, 540, 500} /* NN,TA,A,G,C */
09733 , { 590, 470, 590, 540, 500} /* NN,TA,A,G,G */
09734 , { 590, 470, 590, 540, 500} /* NN,TA,A,G,T */
09735 }
09736 , { { -60, -180, -60, -110, -150} /* NN,TA,A,T,E */
09737 , { -60, -180, -60, -110, -150} /* NN,TA,A,T,A */
09738 , { -60, -180, -60, -110, -150} /* NN,TA,A,T,C */
09739 , { -60, -180, -60, -110, -150} /* NN,TA,A,T,G */
09740 , { -60, -180, -60, -110, -150} /* NN,TA,A,T,T */
09741 }
09742 }

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09743 ,{{{ 780, 660, 780, 730, 690} /* NN,TA,C,E,E */
09744 ,{ 780, 660, 780, 730, 690} /* NN,TA,C,E,A */
09745 ,{ 780, 660, 780, 730, 690} /* NN,TA,C,E,C */
09746 ,{ 780, 660, 780, 730, 690} /* NN,TA,C,E,G */
09747 ,{ 780, 660, 780, 730, 690} /* NN,TA,C,E,T */
09748 }
09749 ,{{{ 750, 630, 750, 700, 660} /* NN,TA,C,A,E */
09750 ,{ 750, 630, 750, 700, 660} /* NN,TA,C,A,A */
09751 ,{ 750, 630, 750, 700, 660} /* NN,TA,C,A,C */
09752 ,{ 750, 630, 750, 700, 660} /* NN,TA,C,A,G */
09753 ,{ 750, 630, 750, 700, 660} /* NN,TA,C,A,T */
09754 }
09755 ,{{{ 780, 660, 780, 730, 690} /* NN,TA,C,C,E */
09756 ,{ 780, 660, 780, 730, 690} /* NN,TA,C,C,A */
09757 ,{ 780, 660, 780, 730, 690} /* NN,TA,C,C,C */
09758 ,{ 780, 660, 780, 730, 690} /* NN,TA,C,C,G */
09759 ,{ 780, 660, 780, 730, 690} /* NN,TA,C,C,T */
09760 }
09761 ,{{{ 590, 470, 590, 540, 500} /* NN,TA,C,G,E */
09762 ,{ 590, 470, 590, 540, 500} /* NN,TA,C,G,A */
09763 ,{ 590, 470, 590, 540, 500} /* NN,TA,C,G,C */
09764 ,{ 590, 470, 590, 540, 500} /* NN,TA,C,G,G */
09765 ,{ 590, 470, 590, 540, 500} /* NN,TA,C,G,T */
09766 }
09767 ,{{{ -60, -180, -60, -110, -150} /* NN,TA,C,T,E */
09768 ,{ -60, -180, -60, -110, -150} /* NN,TA,C,T,A */
09769 ,{ -60, -180, -60, -110, -150} /* NN,TA,C,T,C */
09770 ,{ -60, -180, -60, -110, -150} /* NN,TA,C,T,G */
09771 ,{ -60, -180, -60, -110, -150} /* NN,TA,C,T,T */
09772 }
09773 }
09774 ,{{{ 780, 660, 780, 730, 690} /* NN,TA,G,E,E */
09775 ,{ 780, 660, 780, 730, 690} /* NN,TA,G,E,A */
09776 ,{ 780, 660, 780, 730, 690} /* NN,TA,G,E,C */
09777 ,{ 780, 660, 780, 730, 690} /* NN,TA,G,E,G */
09778 ,{ 780, 660, 780, 730, 690} /* NN,TA,G,E,T */
09779 }
09780 ,{{{ 750, 630, 750, 700, 660} /* NN,TA,G,A,E */
09781 ,{ 750, 630, 750, 700, 660} /* NN,TA,G,A,A */
09782 ,{ 750, 630, 750, 700, 660} /* NN,TA,G,A,C */
09783 ,{ 750, 630, 750, 700, 660} /* NN,TA,G,A,G */
09784 ,{ 750, 630, 750, 700, 660} /* NN,TA,G,A,T */
09785 }
09786 ,{{{ 780, 660, 780, 730, 690} /* NN,TA,G,C,E */
09787 ,{ 780, 660, 780, 730, 690} /* NN,TA,G,C,A */
09788 ,{ 780, 660, 780, 730, 690} /* NN,TA,G,C,C */
09789 ,{ 780, 660, 780, 730, 690} /* NN,TA,G,C,G */
09790 ,{ 780, 660, 780, 730, 690} /* NN,TA,G,C,T */
09791 }
09792 ,{{{ 590, 470, 590, 540, 500} /* NN,TA,G,G,E */
09793 ,{ 590, 470, 590, 540, 500} /* NN,TA,G,G,A */
09794 ,{ 590, 470, 590, 540, 500} /* NN,TA,G,G,C */
09795 ,{ 590, 470, 590, 540, 500} /* NN,TA,G,G,G */
09796 ,{ 590, 470, 590, 540, 500} /* NN,TA,G,G,T */
09797 }
09798 ,{{{ -60, -180, -60, -110, -150} /* NN,TA,G,T,E */
09799 ,{ -60, -180, -60, -110, -150} /* NN,TA,G,T,A */
09800 ,{ -60, -180, -60, -110, -150} /* NN,TA,G,T,C */
09801 ,{ -60, -180, -60, -110, -150} /* NN,TA,G,T,G */
09802 ,{ -60, -180, -60, -110, -150} /* NN,TA,G,T,T */
09803 }
09804 }
09805 ,{{{ 780, 660, 780, 730, 690} /* NN,TA,T,E,E */
09806 ,{ 780, 660, 780, 730, 690} /* NN,TA,T,E,A */
09807 ,{ 780, 660, 780, 730, 690} /* NN,TA,T,E,C */
09808 ,{ 780, 660, 780, 730, 690} /* NN,TA,T,E,G */
09809 ,{ 780, 660, 780, 730, 690} /* NN,TA,T,E,T */
09810 }
09811 ,{{{ 750, 630, 750, 700, 660} /* NN,TA,T,A,E */
09812 ,{ 750, 630, 750, 700, 660} /* NN,TA,T,A,A */
09813 ,{ 750, 630, 750, 700, 660} /* NN,TA,T,A,C */
09814 ,{ 750, 630, 750, 700, 660} /* NN,TA,T,A,G */
09815 ,{ 750, 630, 750, 700, 660} /* NN,TA,T,A,T */
09816 }
09817 ,{{{ 780, 660, 780, 730, 690} /* NN,TA,T,C,E */
09818 ,{ 780, 660, 780, 730, 690} /* NN,TA,T,C,A */
09819 ,{ 780, 660, 780, 730, 690} /* NN,TA,T,C,C */
09820 ,{ 780, 660, 780, 730, 690} /* NN,TA,T,C,G */
09821 ,{ 780, 660, 780, 730, 690} /* NN,TA,T,C,T */
09822 }
09823 ,{{{ 590, 470, 590, 540, 500} /* NN,TA,T,G,E */
09824 ,{ 590, 470, 590, 540, 500} /* NN,TA,T,G,A */
09825 ,{ 590, 470, 590, 540, 500} /* NN,TA,T,G,C */
09826 ,{ 590, 470, 590, 540, 500} /* NN,TA,T,G,G */
09827 ,{ 590, 470, 590, 540, 500} /* NN,TA,T,G,T */
09828 }
09829 ,{{{ -60, -180, -60, -110, -150} /* NN,TA,T,T,E */

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```
09830      , {      -60,      -180,      -60,      -110,      -150} /* NN, TA, T, T, A */
09831      , {      -60,      -180,      -60,      -110,      -150} /* NN, TA, T, T, C */
09832      , {      -60,      -180,      -60,      -110,      -150} /* NN, TA, T, T, G */
09833      , {      -60,      -180,      -60,      -110,      -150} /* NN, TA, T, T, T */
09834      }
09835      }
09836      }
09837      , {{{      1040,      920,      1040,      990,      950} /* NN, NN, E, E, E */
09838      , {      1040,      920,      1040,      990,      950} /* NN, NN, E, E, A */
09839      , {      1040,      920,      1040,      990,      950} /* NN, NN, E, E, C */
09840      , {      1040,      920,      1040,      990,      950} /* NN, NN, E, E, G */
09841      , {      1040,      920,      1040,      990,      950} /* NN, NN, E, E, T */
09842      }
09843      , {{      920,      800,      920,      870,      830} /* NN, NN, E, A, E */
09844      , {      920,      800,      920,      870,      830} /* NN, NN, E, A, A */
09845      , {      920,      800,      920,      870,      830} /* NN, NN, E, A, C */
09846      , {      920,      800,      920,      870,      830} /* NN, NN, E, A, G */
09847      , {      920,      800,      920,      870,      830} /* NN, NN, E, A, T */
09848      }
09849      , {{      1040,      920,      1040,      990,      950} /* NN, NN, E, C, E */
09850      , {      1040,      920,      1040,      990,      950} /* NN, NN, E, C, A */
09851      , {      1040,      920,      1040,      990,      950} /* NN, NN, E, C, C */
09852      , {      1040,      920,      1040,      990,      950} /* NN, NN, E, C, G */
09853      , {      1040,      920,      1040,      990,      950} /* NN, NN, E, C, T */
09854      }
09855      , {{      990,      870,      990,      940,      900} /* NN, NN, E, G, E */
09856      , {      990,      870,      990,      940,      900} /* NN, NN, E, G, A */
09857      , {      990,      870,      990,      940,      900} /* NN, NN, E, G, C */
09858      , {      990,      870,      990,      940,      900} /* NN, NN, E, G, G */
09859      , {      990,      870,      990,      940,      900} /* NN, NN, E, G, T */
09860      }
09861      , {{      950,      830,      950,      900,      860} /* NN, NN, E, T, E */
09862      , {      950,      830,      950,      900,      860} /* NN, NN, E, T, A */
09863      , {      950,      830,      950,      900,      860} /* NN, NN, E, T, C */
09864      , {      950,      830,      950,      900,      860} /* NN, NN, E, T, G */
09865      , {      950,      830,      950,      900,      860} /* NN, NN, E, T, T */
09866      }
09867      }
09868      , {{{      1040,      920,      1040,      990,      950} /* NN, NN, A, E, E */
09869      , {      1040,      920,      1040,      990,      950} /* NN, NN, A, E, A */
09870      , {      1040,      920,      1040,      990,      950} /* NN, NN, A, E, C */
09871      , {      1040,      920,      1040,      990,      950} /* NN, NN, A, E, G */
09872      , {      1040,      920,      1040,      990,      950} /* NN, NN, A, E, T */
09873      }
09874      , {{      920,      800,      920,      870,      830} /* NN, NN, A, A, E */
09875      , {      920,      800,      920,      870,      830} /* NN, NN, A, A, A */
09876      , {      920,      800,      920,      870,      830} /* NN, NN, A, A, C */
09877      , {      920,      800,      920,      870,      830} /* NN, NN, A, A, G */
09878      , {      920,      800,      920,      870,      830} /* NN, NN, A, A, T */
09879      }
09880      , {{{      1040,      920,      1040,      990,      950} /* NN, NN, A, C, E */
09881      , {      1040,      920,      1040,      990,      950} /* NN, NN, A, C, A */
09882      , {      1040,      920,      1040,      990,      950} /* NN, NN, A, C, C */
09883      , {      1040,      920,      1040,      990,      950} /* NN, NN, A, C, G */
09884      , {      1040,      920,      1040,      990,      950} /* NN, NN, A, C, T */
09885      }
09886      , {{      990,      870,      990,      940,      900} /* NN, NN, A, G, E */
09887      , {      990,      870,      990,      940,      900} /* NN, NN, A, G, A */
09888      , {      990,      870,      990,      940,      900} /* NN, NN, A, G, C */
09889      , {      990,      870,      990,      940,      900} /* NN, NN, A, G, G */
09890      , {      990,      870,      990,      940,      900} /* NN, NN, A, G, T */
09891      }
09892      , {{      950,      830,      950,      900,      860} /* NN, NN, A, T, E */
09893      , {      950,      830,      950,      900,      860} /* NN, NN, A, T, A */
09894      , {      950,      830,      950,      900,      860} /* NN, NN, A, T, C */
09895      , {      950,      830,      950,      900,      860} /* NN, NN, A, T, G */
09896      , {      950,      830,      950,      900,      860} /* NN, NN, A, T, T */
09897      }
09898      }
09899      , {{{      1040,      920,      1040,      990,      950} /* NN, NN, C, E, E */
09900      , {      1040,      920,      1040,      990,      950} /* NN, NN, C, E, A */
09901      , {      1040,      920,      1040,      990,      950} /* NN, NN, C, E, C */
09902      , {      1040,      920,      1040,      990,      950} /* NN, NN, C, E, G */
09903      , {      1040,      920,      1040,      990,      950} /* NN, NN, C, E, T */
09904      }
09905      , {{      920,      800,      920,      870,      830} /* NN, NN, C, A, E */
09906      , {      920,      800,      920,      870,      830} /* NN, NN, C, A, A */
09907      , {      920,      800,      920,      870,      830} /* NN, NN, C, A, C */
09908      , {      920,      800,      920,      870,      830} /* NN, NN, C, A, G */
09909      , {      920,      800,      920,      870,      830} /* NN, NN, C, A, T */
09910      }
09911      , {{      1040,      920,      1040,      990,      950} /* NN, NN, C, C, E */
09912      , {      1040,      920,      1040,      990,      950} /* NN, NN, C, C, A */
09913      , {      1040,      920,      1040,      990,      950} /* NN, NN, C, C, C */
09914      , {      1040,      920,      1040,      990,      950} /* NN, NN, C, C, G */
09915      , {      1040,      920,      1040,      990,      950} /* NN, NN, C, C, T */
09916      }
```

```

09917 ,{{ 990, 870, 990, 940, 900} /* NN,NN,C,G,E */
09918 ,{ 990, 870, 990, 940, 900} /* NN,NN,C,G,A */
09919 ,{ 990, 870, 990, 940, 900} /* NN,NN,C,G,C */
09920 ,{ 990, 870, 990, 940, 900} /* NN,NN,C,G,G */
09921 ,{ 990, 870, 990, 940, 900} /* NN,NN,C,G,T */
09922 }
09923 ,{{ 950, 830, 950, 900, 860} /* NN,NN,C,T,E */
09924 ,{ 950, 830, 950, 900, 860} /* NN,NN,C,T,A */
09925 ,{ 950, 830, 950, 900, 860} /* NN,NN,C,T,C */
09926 ,{ 950, 830, 950, 900, 860} /* NN,NN,C,T,G */
09927 ,{ 950, 830, 950, 900, 860} /* NN,NN,C,T,T */
09928 }
09929 }
09930 ,{{{ 1040, 920, 1040, 990, 950} /* NN,NN,G,E,E */
09931 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,G,E,A */
09932 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,G,E,C */
09933 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,G,E,G */
09934 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,G,E,T */
09935 }
09936 ,{{ 920, 800, 920, 870, 830} /* NN,NN,G,A,E */
09937 ,{ 920, 800, 920, 870, 830} /* NN,NN,G,A,A */
09938 ,{ 920, 800, 920, 870, 830} /* NN,NN,G,A,C */
09939 ,{ 920, 800, 920, 870, 830} /* NN,NN,G,A,G */
09940 ,{ 920, 800, 920, 870, 830} /* NN,NN,G,A,T */
09941 }
09942 ,{{ 1040, 920, 1040, 990, 950} /* NN,NN,G,C,E */
09943 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,G,C,A */
09944 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,G,C,C */
09945 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,G,C,G */
09946 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,G,C,T */
09947 }
09948 ,{{ 990, 870, 990, 940, 900} /* NN,NN,G,G,E */
09949 ,{ 990, 870, 990, 940, 900} /* NN,NN,G,G,A */
09950 ,{ 990, 870, 990, 940, 900} /* NN,NN,G,G,C */
09951 ,{ 990, 870, 990, 940, 900} /* NN,NN,G,G,G */
09952 ,{ 990, 870, 990, 940, 900} /* NN,NN,G,G,T */
09953 }
09954 ,{{ 950, 830, 950, 900, 860} /* NN,NN,G,T,E */
09955 ,{ 950, 830, 950, 900, 860} /* NN,NN,G,T,A */
09956 ,{ 950, 830, 950, 900, 860} /* NN,NN,G,T,C */
09957 ,{ 950, 830, 950, 900, 860} /* NN,NN,G,T,G */
09958 ,{ 950, 830, 950, 900, 860} /* NN,NN,G,T,T */
09959 }
09960 }
09961 ,{{{ 1040, 920, 1040, 990, 950} /* NN,NN,T,E,E */
09962 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,T,E,A */
09963 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,T,E,C */
09964 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,T,E,G */
09965 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,T,E,T */
09966 }
09967 ,{{ 920, 800, 920, 870, 830} /* NN,NN,T,A,E */
09968 ,{ 920, 800, 920, 870, 830} /* NN,NN,T,A,A */
09969 ,{ 920, 800, 920, 870, 830} /* NN,NN,T,A,C */
09970 ,{ 920, 800, 920, 870, 830} /* NN,NN,T,A,G */
09971 ,{ 920, 800, 920, 870, 830} /* NN,NN,T,A,T */
09972 }
09973 ,{{{ 1040, 920, 1040, 990, 950} /* NN,NN,T,C,E */
09974 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,T,C,A */
09975 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,T,C,C */
09976 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,T,C,G */
09977 ,{ 1040, 920, 1040, 990, 950} /* NN,NN,T,C,T */
09978 }
09979 ,{{ 990, 870, 990, 940, 900} /* NN,NN,T,G,E */
09980 ,{ 990, 870, 990, 940, 900} /* NN,NN,T,G,A */
09981 ,{ 990, 870, 990, 940, 900} /* NN,NN,T,G,C */
09982 ,{ 990, 870, 990, 940, 900} /* NN,NN,T,G,G */
09983 ,{ 990, 870, 990, 940, 900} /* NN,NN,T,G,T */
09984 }
09985 ,{{{ 950, 830, 950, 900, 860} /* NN,NN,T,T,E */
09986 ,{ 950, 830, 950, 900, 860} /* NN,NN,T,T,A */
09987 ,{ 950, 830, 950, 900, 860} /* NN,NN,T,T,C */
09988 ,{ 950, 830, 950, 900, 860} /* NN,NN,T,T,G */
09989 ,{ 950, 830, 950, 900, 860} /* NN,NN,T,T,T */
09990 }
09991 }
09992 }
09993 }
09994 };
09995

```

11.105 intl22dH_RD.h

```

00001 PUBLIC int intl22_dH_RD[NBPAIRS+1][NBPAIRS+1][5][5][5][5] =
00002 {{{{{{ INF, INF, INF, INF, INF} /* NP,NP,E,E,E */
00003 ,{ INF, INF, INF, INF, INF} /* NP,NP,E,E,A */

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00004 , { INF, INF, INF, INF, INF} /* NP,NP,E,E,C */
00005 , { INF, INF, INF, INF, INF} /* NP,NP,E,E,G */
00006 , { INF, INF, INF, INF, INF} /* NP,NP,E,E,U/T */
00007 }
00008 , { { INF, INF, INF, INF, INF} /* NP,NP,E,A,E */
00009 , { INF, INF, INF, INF, INF} /* NP,NP,E,A,A */
00010 , { INF, INF, INF, INF, INF} /* NP,NP,E,A,C */
00011 , { INF, INF, INF, INF, INF} /* NP,NP,E,A,G */
00012 , { INF, INF, INF, INF, INF} /* NP,NP,E,A,U/T */
00013 }
00014 , { { INF, INF, INF, INF, INF} /* NP,NP,E,C,E */
00015 , { INF, INF, INF, INF, INF} /* NP,NP,E,C,A */
00016 , { INF, INF, INF, INF, INF} /* NP,NP,E,C,C */
00017 , { INF, INF, INF, INF, INF} /* NP,NP,E,C,G */
00018 , { INF, INF, INF, INF, INF} /* NP,NP,E,C,U/T */
00019 }
00020 , { { INF, INF, INF, INF, INF} /* NP,NP,E,G,E */
00021 , { INF, INF, INF, INF, INF} /* NP,NP,E,G,A */
00022 , { INF, INF, INF, INF, INF} /* NP,NP,E,G,C */
00023 , { INF, INF, INF, INF, INF} /* NP,NP,E,G,G */
00024 , { INF, INF, INF, INF, INF} /* NP,NP,E,G,U/T */
00025 }
00026 , { { INF, INF, INF, INF, INF} /* NP,NP,E,U/T,E */
00027 , { INF, INF, INF, INF, INF} /* NP,NP,E,U/T,A */
00028 , { INF, INF, INF, INF, INF} /* NP,NP,E,U/T,C */
00029 , { INF, INF, INF, INF, INF} /* NP,NP,E,U/T,G */
00030 , { INF, INF, INF, INF, INF} /* NP,NP,E,U/T,U/T */
00031 }
00032 }
00033 , { { { INF, INF, INF, INF, INF} /* NP,NP,A,E,E */
00034 , { INF, INF, INF, INF, INF} /* NP,NP,A,E,A */
00035 , { INF, INF, INF, INF, INF} /* NP,NP,A,E,C */
00036 , { INF, INF, INF, INF, INF} /* NP,NP,A,E,G */
00037 , { INF, INF, INF, INF, INF} /* NP,NP,A,E,U/T */
00038 }
00039 , { { INF, INF, INF, INF, INF} /* NP,NP,A,A,E */
00040 , { INF, INF, INF, INF, INF} /* NP,NP,A,A,A */
00041 , { INF, INF, INF, INF, INF} /* NP,NP,A,A,C */
00042 , { INF, INF, INF, INF, INF} /* NP,NP,A,A,G */
00043 , { INF, INF, INF, INF, INF} /* NP,NP,A,A,U/T */
00044 }
00045 , { { INF, INF, INF, INF, INF} /* NP,NP,A,C,E */
00046 , { INF, INF, INF, INF, INF} /* NP,NP,A,C,A */
00047 , { INF, INF, INF, INF, INF} /* NP,NP,A,C,C */
00048 , { INF, INF, INF, INF, INF} /* NP,NP,A,C,G */
00049 , { INF, INF, INF, INF, INF} /* NP,NP,A,C,U/T */
00050 }
00051 , { { INF, INF, INF, INF, INF} /* NP,NP,A,G,E */
00052 , { INF, INF, INF, INF, INF} /* NP,NP,A,G,A */
00053 , { INF, INF, INF, INF, INF} /* NP,NP,A,G,C */
00054 , { INF, INF, INF, INF, INF} /* NP,NP,A,G,G */
00055 , { INF, INF, INF, INF, INF} /* NP,NP,A,G,U/T */
00056 }
00057 , { { INF, INF, INF, INF, INF} /* NP,NP,A,U/T,E */
00058 , { INF, INF, INF, INF, INF} /* NP,NP,A,U/T,A */
00059 , { INF, INF, INF, INF, INF} /* NP,NP,A,U/T,C */
00060 , { INF, INF, INF, INF, INF} /* NP,NP,A,U/T,G */
00061 , { INF, INF, INF, INF, INF} /* NP,NP,A,U/T,U/T */
00062 }
00063 }
00064 , { { { INF, INF, INF, INF, INF} /* NP,NP,C,E,E */
00065 , { INF, INF, INF, INF, INF} /* NP,NP,C,E,A */
00066 , { INF, INF, INF, INF, INF} /* NP,NP,C,E,C */
00067 , { INF, INF, INF, INF, INF} /* NP,NP,C,E,G */
00068 , { INF, INF, INF, INF, INF} /* NP,NP,C,E,U/T */
00069 }
00070 , { { INF, INF, INF, INF, INF} /* NP,NP,C,A,E */
00071 , { INF, INF, INF, INF, INF} /* NP,NP,C,A,A */
00072 , { INF, INF, INF, INF, INF} /* NP,NP,C,A,C */
00073 , { INF, INF, INF, INF, INF} /* NP,NP,C,A,G */
00074 , { INF, INF, INF, INF, INF} /* NP,NP,C,A,U/T */
00075 }
00076 , { { INF, INF, INF, INF, INF} /* NP,NP,C,C,E */
00077 , { INF, INF, INF, INF, INF} /* NP,NP,C,C,A */
00078 , { INF, INF, INF, INF, INF} /* NP,NP,C,C,C */
00079 , { INF, INF, INF, INF, INF} /* NP,NP,C,C,G */
00080 , { INF, INF, INF, INF, INF} /* NP,NP,C,C,U/T */
00081 }
00082 , { { INF, INF, INF, INF, INF} /* NP,NP,C,G,E */
00083 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,A */
00084 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,C */
00085 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,G */
00086 , { INF, INF, INF, INF, INF} /* NP,NP,C,G,U/T */
00087 }
00088 , { { INF, INF, INF, INF, INF} /* NP,NP,C,U/T,E */
00089 , { INF, INF, INF, INF, INF} /* NP,NP,C,U/T,A */
00090 , { INF, INF, INF, INF, INF} /* NP,NP,C,U/T,C */

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00091      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,U/T,G */
00092      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,C,U/T,U/T */
00093      }
00094    }
00095    , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,E */
00096      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,A */
00097      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,C */
00098      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,G */
00099      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,E,U/T */
00100    }
00101    , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,E */
00102      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,A */
00103      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,C */
00104      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,G */
00105      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,A,U/T */
00106    }
00107    , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,E */
00108      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,A */
00109      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,C */
00110      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,G */
00111      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,C,U/T */
00112    }
00113    , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,E */
00114      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,A */
00115      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,C */
00116      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,G */
00117      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,G,U/T */
00118    }
00119    , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U/T,E */
00120      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U/T,A */
00121      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U/T,C */
00122      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U/T,G */
00123      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,G,U/T,U/T */
00124    }
00125    }
00126    , {{ {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,E,E */
00127      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,E,A */
00128      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,E,C */
00129      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,E,G */
00130      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,E,U/T */
00131    }
00132    , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,A,E */
00133      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,A,A */
00134      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,A,C */
00135      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,A,G */
00136      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,A,U/T */
00137    }
00138    , {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,C,E */
00139      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,C,A */
00140      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,C,C */
00141      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,C,G */
00142      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,C,U/T */
00143    }
00144    , {{ {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,G,E */
00145      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,G,A */
00146      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,G,C */
00147      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,G,G */
00148      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,G,U/T */
00149    }
00150    , {{ {{ {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,U/T,E */
00151      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,U/T,A */
00152      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,U/T,C */
00153      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,U/T,G */
00154      , {      INF,      INF,      INF,      INF,      INF} /* NP,NP,U/T,U/T,U/T */
00155    }
00156    }
00157    }
00158    , {{{ {{ {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,E */
00159      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,A */
00160      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,C */
00161      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,G */
00162      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,E,U/T */
00163    }
00164    , {{ {{ {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,A,E */
00165      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,A,A */
00166      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,A,C */
00167      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,A,G */
00168      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,A,U/T */
00169    }
00170    , {{{ {{ {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,C,E */
00171      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,C,A */
00172      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,C,C */
00173      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,C,G */
00174      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,C,U/T */
00175    }
00176    , {{{ {{ {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G,E */
00177      , {      INF,      INF,      INF,      INF,      INF} /* NP,CG,E,G,A */

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00178 , { INF, INF, INF, INF, INF} /* NP,CG,E,G,C */
00179 , { INF, INF, INF, INF, INF} /* NP,CG,E,G,G */
00180 , { INF, INF, INF, INF, INF} /* NP,CG,E,G,U/T */
00181 }
00182 , { { INF, INF, INF, INF, INF} /* NP,CG,E,U/T,E */
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00184 , { INF, INF, INF, INF, INF} /* NP,CG,E,U/T,C */
00185 , { INF, INF, INF, INF, INF} /* NP,CG,E,U/T,G */
00186 , { INF, INF, INF, INF, INF} /* NP,CG,E,U/T,U/T */
00187 }
00188 }
00189 , { { { INF, INF, INF, INF, INF} /* NP,CG,A,E,E */
00190 , { INF, INF, INF, INF, INF} /* NP,CG,A,E,A */
00191 , { INF, INF, INF, INF, INF} /* NP,CG,A,E,C */
00192 , { INF, INF, INF, INF, INF} /* NP,CG,A,E,G */
00193 , { INF, INF, INF, INF, INF} /* NP,CG,A,E,U/T */
00194 }
00195 , { { INF, INF, INF, INF, INF} /* NP,CG,A,A,E */
00196 , { INF, INF, INF, INF, INF} /* NP,CG,A,A,A */
00197 , { INF, INF, INF, INF, INF} /* NP,CG,A,A,C */
00198 , { INF, INF, INF, INF, INF} /* NP,CG,A,A,G */
00199 , { INF, INF, INF, INF, INF} /* NP,CG,A,A,U/T */
00200 }
00201 , { { INF, INF, INF, INF, INF} /* NP,CG,A,C,E */
00202 , { INF, INF, INF, INF, INF} /* NP,CG,A,C,A */
00203 , { INF, INF, INF, INF, INF} /* NP,CG,A,C,C */
00204 , { INF, INF, INF, INF, INF} /* NP,CG,A,C,G */
00205 , { INF, INF, INF, INF, INF} /* NP,CG,A,C,U/T */
00206 }
00207 , { { INF, INF, INF, INF, INF} /* NP,CG,A,G,E */
00208 , { INF, INF, INF, INF, INF} /* NP,CG,A,G,A */
00209 , { INF, INF, INF, INF, INF} /* NP,CG,A,G,C */
00210 , { INF, INF, INF, INF, INF} /* NP,CG,A,G,G */
00211 , { INF, INF, INF, INF, INF} /* NP,CG,A,G,U/T */
00212 }
00213 , { { { INF, INF, INF, INF, INF} /* NP,CG,A,U/T,E */
00214 , { INF, INF, INF, INF, INF} /* NP,CG,A,U/T,A */
00215 , { INF, INF, INF, INF, INF} /* NP,CG,A,U/T,C */
00216 , { INF, INF, INF, INF, INF} /* NP,CG,A,U/T,G */
00217 , { INF, INF, INF, INF, INF} /* NP,CG,A,U/T,U/T */
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00222 , { INF, INF, INF, INF, INF} /* NP,CG,C,E,C */
00223 , { INF, INF, INF, INF, INF} /* NP,CG,C,E,G */
00224 , { INF, INF, INF, INF, INF} /* NP,CG,C,E,U/T */
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00227 , { INF, INF, INF, INF, INF} /* NP,CG,C,A,A */
00228 , { INF, INF, INF, INF, INF} /* NP,CG,C,A,C */
00229 , { INF, INF, INF, INF, INF} /* NP,CG,C,A,G */
00230 , { INF, INF, INF, INF, INF} /* NP,CG,C,A,U/T */
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00232 , { { INF, INF, INF, INF, INF} /* NP,CG,C,C,E */
00233 , { INF, INF, INF, INF, INF} /* NP,CG,C,C,A */
00234 , { INF, INF, INF, INF, INF} /* NP,CG,C,C,C */
00235 , { INF, INF, INF, INF, INF} /* NP,CG,C,C,G */
00236 , { INF, INF, INF, INF, INF} /* NP,CG,C,C,U/T */
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00238 , { { INF, INF, INF, INF, INF} /* NP,CG,C,G,E */
00239 , { INF, INF, INF, INF, INF} /* NP,CG,C,G,A */
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00242 , { INF, INF, INF, INF, INF} /* NP,CG,C,G,U/T */
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00246 , { INF, INF, INF, INF, INF} /* NP,CG,C,U/T,C */
00247 , { INF, INF, INF, INF, INF} /* NP,CG,C,U/T,G */
00248 , { INF, INF, INF, INF, INF} /* NP,CG,C,U/T,U/T */
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00252 , { INF, INF, INF, INF, INF} /* NP,CG,G,E,A */
00253 , { INF, INF, INF, INF, INF} /* NP,CG,G,E,C */
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00258 , { INF, INF, INF, INF, INF} /* NP,CG,G,A,A */
00259 , { INF, INF, INF, INF, INF} /* NP,CG,G,A,C */
00260 , { INF, INF, INF, INF, INF} /* NP,CG,G,A,G */
00261 , { INF, INF, INF, INF, INF} /* NP,CG,G,A,U/T */
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00264 , { INF, INF, INF, INF, INF} /* NP,CG,G,C,A */

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00267 , { INF, INF, INF, INF, INF} /* NP,CG,G,C,U/T */
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00269 , { { INF, INF, INF, INF, INF} /* NP,CG,G,G,E */
00270 , { INF, INF, INF, INF, INF} /* NP,CG,G,G,A */
00271 , { INF, INF, INF, INF, INF} /* NP,CG,G,G,C */
00272 , { INF, INF, INF, INF, INF} /* NP,CG,G,G,G */
00273 , { INF, INF, INF, INF, INF} /* NP,CG,G,G,U/T */
00274 }
00275 , { { INF, INF, INF, INF, INF} /* NP,CG,G,U/T,E */
00276 , { INF, INF, INF, INF, INF} /* NP,CG,G,U/T,A */
00277 , { INF, INF, INF, INF, INF} /* NP,CG,G,U/T,C */
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00283 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,E,A */
00284 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,E,C */
00285 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,E,G */
00286 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,E,U/T */
00287 }
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00291 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,A,G */
00292 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,A,U/T */
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00294 , { { INF, INF, INF, INF, INF} /* NP,CG,U/T,C,E */
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00297 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,C,G */
00298 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,C,U/T */
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00304 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,G,U/T */
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00306 , { { INF, INF, INF, INF, INF} /* NP,CG,U/T,U/T,E */
00307 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,U/T,A */
00308 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,U/T,C */
00309 , { INF, INF, INF, INF, INF} /* NP,CG,U/T,U/T,G */
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00323 , { INF, INF, INF, INF, INF} /* NP,GC,E,A,G */
00324 , { INF, INF, INF, INF, INF} /* NP,GC,E,A,U/T */
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00328 , { INF, INF, INF, INF, INF} /* NP,GC,E,C,C */
00329 , { INF, INF, INF, INF, INF} /* NP,GC,E,C,G */
00330 , { INF, INF, INF, INF, INF} /* NP,GC,E,C,U/T */
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00332 , { { INF, INF, INF, INF, INF} /* NP,GC,E,G,E */
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00335 , { INF, INF, INF, INF, INF} /* NP,GC,E,G,G */
00336 , { INF, INF, INF, INF, INF} /* NP,GC,E,G,U/T */
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00339 , { INF, INF, INF, INF, INF} /* NP,GC,E,U/T,A */
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00344 }
00345 , { { { { INF, INF, INF, INF, INF} /* NP,GC,A,E,E */
00346 , { INF, INF, INF, INF, INF} /* NP,GC,A,E,A */
00347 , { INF, INF, INF, INF, INF} /* NP,GC,A,E,C */
00348 , { INF, INF, INF, INF, INF} /* NP,GC,A,E,G */
00349 , { INF, INF, INF, INF, INF} /* NP,GC,A,E,U/T */
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00356 }
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00429 , { INF, INF, INF, INF, INF} /* NP,GC,G,G,U/T */
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00435 , { INF, INF, INF, INF, INF} /* NP,GC,G,U/T,U/T */
00436 }
00437 }
00438 , { { { { INF, INF, INF, INF, INF} /* NP,GC,U/T,E,E */

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00442 , { INF, INF, INF, INF, INF} /* NP,GC,U/T,E,U/T */
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00454 , { INF, INF, INF, INF, INF} /* NP,GC,U/T,C,U/T */
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00463 , { INF, INF, INF, INF, INF} /* NP,GC,U/T,U/T,A */
00464 , { INF, INF, INF, INF, INF} /* NP,GC,U/T,U/T,C */
00465 , { INF, INF, INF, INF, INF} /* NP,GC,U/T,U/T,G */
00466 , { INF, INF, INF, INF, INF} /* NP,GC,U/T,U/T,U/T */
00467 }
00468 }
00469 }
00470 , { { { INF, INF, INF, INF, INF} /* NP,GT,E,E,E */
00471 , { INF, INF, INF, INF, INF} /* NP,GT,E,E,A */
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00473 , { INF, INF, INF, INF, INF} /* NP,GT,E,E,G */
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00699      }

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00763 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,C,A */
00764 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,C,C */
00765 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,C,G */
00766 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,C,U/T */
00767 }
00768 ,{{ INF, INF, INF, INF, INF} /* NP,UG,U/T,G,E */
00769 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,G,A */
00770 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,G,C */
00771 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,G,G */
00772 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,G,U/T */
00773 }
00774 ,{{ INF, INF, INF, INF, INF} /* NP,UG,U/T,U/T,E */
00775 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,U/T,A */
00776 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,U/T,C */
00777 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,U/T,G */
00778 ,{ INF, INF, INF, INF, INF} /* NP,UG,U/T,U/T,U/T */
00779 }
00780 }
00781 }
00782 ,{{{ INF, INF, INF, INF, INF} /* NP,AT,E,E,E */
00783 ,{ INF, INF, INF, INF, INF} /* NP,AT,E,E,A */
00784 ,{ INF, INF, INF, INF, INF} /* NP,AT,E,E,C */
00785 ,{ INF, INF, INF, INF, INF} /* NP,AT,E,E,G */
00786 ,{ INF, INF, INF, INF, INF} /* NP,AT,E,E,U/T */

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```

00787      }
00788      ,{{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,A,E */
00789      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,A,A */
00790      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,A,C */
00791      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,A,G */
00792      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,A,U/T */
00793      }
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00795      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,C,A */
00796      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,C,C */
00797      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,C,G */
00798      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,E,C,U/T */
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00817      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,E,U/T */
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00823      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,A,U/T */
00824      }
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00826      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,C,A */
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00828      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,A,C,G */
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00843      }
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00846      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,E,C */
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00852      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,A,C */
00853      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,A,G */
00854      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,A,U/T */
00855      }
00856      ,{{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,C,E */
00857      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,C,A */
00858      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,C,C */
00859      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,C,G */
00860      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,C,U/T */
00861      }
00862      ,{{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,G,E */
00863      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,G,A */
00864      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,G,C */
00865      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,G,G */
00866      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,G,U/T */
00867      }
00868      ,{{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,U/T,E */
00869      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,U/T,A */
00870      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,U/T,C */
00871      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,U/T,G */
00872      ,{      INF,      INF,      INF,      INF,      INF} /* NP,AT,C,U/T,U/T */
00873      }

```

```
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00875     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,E,E */
00876     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,E,A */
00877     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,E,C */
00878     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,E,G */
00879     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,E,U/T */
00880     }
00881     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,A,E */
00882     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,A,A */
00883     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,A,C */
00884     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,A,G */
00885     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,A,U/T */
00886     }
00887     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,C,E */
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00889     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,C,C */
00890     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,C,G */
00891     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,C,U/T */
00892     }
00893     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,G,E */
00894     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,G,A */
00895     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,G,C */
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00897     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,G,G,U/T */
00898     }
00899     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,G,U/T,E */
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00904     }
00905     }
00906     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,E,E */
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00909     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,E,G */
00910     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,E,U/T */
00911     }
00912     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,A,E */
00913     ,{     INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,A,A */
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00924     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,AT,U/T,G,E */
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00935     }
00936     }
00937     }
00938     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,E,E */
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00940     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,E,C */
00941     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,E,G */
00942     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,E,U/T */
00943     }
00944     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,A,E */
00945     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,A,A */
00946     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,A,C */
00947     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,A,G */
00948     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,A,U/T */
00949     }
00950     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,C,E */
00951     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,C,A */
00952     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,C,C */
00953     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,C,G */
00954     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,C,U/T */
00955     }
00956     ,{{{   INF,   INF,   INF,   INF,   INF} /* NP,UA,E,G,E */
00957     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,G,A */
00958     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,G,C */
00959     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,G,G */
00960     ,{     INF,   INF,   INF,   INF,   INF} /* NP,UA,E,G,U/T */
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00967      }
00968      }
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01032      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,E,A */
01033      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,E,C */
01034      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,E,G */
01035      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,E,U/T */
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01044      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,C,A */
01045      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,C,C */
01046      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,C,G */
01047      ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,C,U/T */

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01050     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,G,A */
01051     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,G,C */
01052     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,G,G */
01053     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,G,U/T */
01054     }
01055     ,{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U/T,E */
01056     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U/T,A */
01057     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U/T,C */
01058     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U/T,G */
01059     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,G,U/T,U/T */
01060     }
01061     }
01062     ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,E,E */
01063     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,E,A */
01064     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,E,C */
01065     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,E,G */
01066     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,E,U/T */
01067     }
01068     ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,A,E */
01069     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,A,A */
01070     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,A,C */
01071     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,A,G */
01072     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,A,U/T */
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01074     ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,C,E */
01075     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,C,A */
01076     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,C,C */
01077     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,C,G */
01078     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,C,U/T */
01079     }
01080     ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,G,E */
01081     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,G,A */
01082     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,G,C */
01083     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,G,G */
01084     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,G,U/T */
01085     }
01086     ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,U/T,E */
01087     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,U/T,A */
01088     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,U/T,C */
01089     ,{      INF,      INF,      INF,      INF,      INF} /* NP,UA,U/T,U/T,G */
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01092     }
01093     }
01094     ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,E,E */
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01096     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,E,C */
01097     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,E,G */
01098     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,E,U/T */
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01100     ,{{{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,A,E */
01101     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,A,A */
01102     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,A,C */
01103     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,A,G */
01104     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,E,A,U/T */
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01132     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,A,A,A */
01133     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,A,A,C */
01134     ,{      INF,      INF,      INF,      INF,      INF} /* NP,NN,A,A,G */
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01159 , { INF, INF, INF, INF, INF} /* NP,NN,C,E,G */
01160 , { INF, INF, INF, INF, INF} /* NP,NN,C,E,U/T */
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01172 , { INF, INF, INF, INF, INF} /* NP,NN,C,C,U/T */
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01184 , { INF, INF, INF, INF, INF} /* NP,NN,C,U/T,U/T */
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01201 , { INF, INF, INF, INF, INF} /* NP,NN,G,C,C */
01202 , { INF, INF, INF, INF, INF} /* NP,NN,G,C,G */
01203 , { INF, INF, INF, INF, INF} /* NP,NN,G,C,U/T */
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01206 , { INF, INF, INF, INF, INF} /* NP,NN,G,G,A */
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01208 , { INF, INF, INF, INF, INF} /* NP,NN,G,G,G */
01209 , { INF, INF, INF, INF, INF} /* NP,NN,G,G,U/T */
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01215 , { INF, INF, INF, INF, INF} /* NP,NN,G,U/T,U/T */
01216 }
01217 }
01218 , { { { INF, INF, INF, INF, INF} /* NP,NN,U/T,E,E */
01219 , { INF, INF, INF, INF, INF} /* NP,NN,U/T,E,A */
01220 , { INF, INF, INF, INF, INF} /* NP,NN,U/T,E,C */
01221 , { INF, INF, INF, INF, INF} /* NP,NN,U/T,E,G */

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01225 , { INF, INF, INF, INF, INF} /* NP,NN,U/T,A,A */
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01227 , { INF, INF, INF, INF, INF} /* NP,NN,U/T,A,G */
01228 , { INF, INF, INF, INF, INF} /* NP,NN,U/T,A,U/T */
01229 }
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01246 , { INF, INF, INF, INF, INF} /* NP,NN,U/T,U/T,U/T */
01247 }
01248 }
01249 }
01250 }
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01255 , { INF, INF, INF, INF, INF} /* CG,NP,E,E,U/T */
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01258 , { INF, INF, INF, INF, INF} /* CG,NP,E,A,A */
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01298 , { INF, INF, INF, INF, INF} /* CG,NP,A,C,U/T */
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01323      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,C,A,U/T */
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01329      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,C,C,U/T */
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01335      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,C,G,U/T */
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01342    }
01343    }
01344    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,E,E */
01345      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,E,A */
01346      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,E,C */
01347      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,E,G */
01348      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,E,U/T */
01349    }
01350    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,A,E */
01351      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,A,A */
01352      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,A,C */
01353      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,A,G */
01354      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,A,U/T */
01355    }
01356    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,C,E */
01357      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,C,A */
01358      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,C,C */
01359      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,C,G */
01360      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,C,U/T */
01361    }
01362    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,G,E */
01363      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,G,A */
01364      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,G,C */
01365      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,G,G */
01366      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,G,U/T */
01367    }
01368    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U/T,E */
01369      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U/T,A */
01370      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U/T,C */
01371      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U/T,G */
01372      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,G,U/T,U/T */
01373    }
01374    }
01375    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,E,E */
01376      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,E,A */
01377      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,E,C */
01378      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,E,G */
01379      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,E,U/T */
01380    }
01381    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,E */
01382      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,A */
01383      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,C */
01384      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,G */
01385      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,A,U/T */
01386    }
01387    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,E */
01388      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,A */
01389      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,C */
01390      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,G */
01391      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,C,U/T */
01392    }
01393    , {{{      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,G,E */
01394      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,G,A */
01395      , {      INF,      INF,      INF,      INF,      INF} /* CG,NP,U/T,G,C */

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```
01396 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,G,G */
01397 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,G,U/T */
01398 }
01399 , {{ INF, INF, INF, INF, INF} /* CG,NP,U/T,U/T,E */
01400 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,U/T,A */
01401 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,U/T,C */
01402 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,U/T,G */
01403 , { INF, INF, INF, INF, INF} /* CG,NP,U/T,U/T,U/T */
01404 }
01405 }
01406 }
01407 , {{{ -380, -500, -405, -405, -420} /* CG,CG,E,E,E */
01408 , { -405, -595, -505, -430, -515} /* CG,CG,E,E,A */
01409 , { -380, -555, -475, -405, -490} /* CG,CG,E,E,C */
01410 , { -380, -500, -405, -430, -420} /* CG,CG,E,E,G */
01411 , { -435, -610, -530, -460, -545} /* CG,CG,E,E,U/T */
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01413 , {{ -500, -690, -585, -525, -595} /* CG,CG,E,A,E */
01414 , { -500, -690, -595, -525, -610} /* CG,CG,E,A,A */
01415 , { -655, -845, -750, -680, -765} /* CG,CG,E,A,C */
01416 , { -555, -795, -585, -955, -595} /* CG,CG,E,A,G */
01417 , { -655, -845, -750, -680, -765} /* CG,CG,E,A,U/T */
01418 }
01419 , {{{ -405, -585, -505, -430, -515} /* CG,CG,E,C,E */
01420 , { -405, -595, -505, -430, -515} /* CG,CG,E,C,A */
01421 , { -410, -585, -505, -435, -520} /* CG,CG,E,C,C */
01422 , { -405, -595, -505, -430, -515} /* CG,CG,E,C,G */
01423 , { -435, -610, -530, -460, -545} /* CG,CG,E,C,U/T */
01424 }
01425 , {{{ -405, -525, -430, -685, -445} /* CG,CG,E,G,E */
01426 , { -705, -945, -735, -1105, -745} /* CG,CG,E,G,A */
01427 , { -660, -850, -755, -685, -770} /* CG,CG,E,G,C */
01428 , { -405, -525, -430, -685, -445} /* CG,CG,E,G,G */
01429 , { -660, -850, -755, -685, -770} /* CG,CG,E,G,U/T */
01430 }
01431 , {{{ -420, -595, -515, -445, -530} /* CG,CG,E,U/T,E */
01432 , { -445, -635, -545, -470, -555} /* CG,CG,E,U/T,A */
01433 , { -420, -595, -515, -445, -530} /* CG,CG,E,U/T,C */
01434 , { -445, -635, -545, -470, -555} /* CG,CG,E,U/T,G */
01435 , { -890, -910, -940, -1190, -950} /* CG,CG,E,U/T,U/T */
01436 }
01437 }
01438 , {{{ -405, -500, -405, -705, -445} /* CG,CG,A,E,E */
01439 , { -505, -595, -505, -850, -545} /* CG,CG,A,E,A */
01440 , { -475, -570, -475, -705, -515} /* CG,CG,A,E,C */
01441 , { -405, -500, -405, -850, -445} /* CG,CG,A,E,G */
01442 , { -530, -625, -530, -760, -570} /* CG,CG,A,E,U/T */
01443 }
01444 , {{{ -595, -690, -595, -945, -635} /* CG,CG,A,A,E */
01445 , { -595, -690, -595, -945, -635} /* CG,CG,A,A,A */
01446 , { -750, -845, -750, -1100, -790} /* CG,CG,A,A,C */
01447 , { -705, -795, -705, -1050, -745} /* CG,CG,A,A,G */
01448 , { -750, -845, -750, -1100, -790} /* CG,CG,A,A,U/T */
01449 }
01450 , {{{ -505, -595, -505, -735, -545} /* CG,CG,A,C,E */
01451 , { -505, -595, -505, -850, -545} /* CG,CG,A,C,A */
01452 , { -505, -600, -505, -735, -545} /* CG,CG,A,C,C */
01453 , { -505, -595, -505, -850, -545} /* CG,CG,A,C,G */
01454 , { -530, -625, -530, -760, -570} /* CG,CG,A,C,U/T */
01455 }
01456 , {{{ -430, -525, -430, -1105, -470} /* CG,CG,A,G,E */
01457 , { -850, -945, -850, -1200, -890} /* CG,CG,A,G,A */
01458 , { -755, -850, -755, -1105, -795} /* CG,CG,A,G,C */
01459 , { -430, -525, -430, -1405, -470} /* CG,CG,A,G,G */
01460 , { -755, -850, -755, -1105, -795} /* CG,CG,A,G,U/T */
01461 }
01462 , {{{ -515, -610, -515, -745, -555} /* CG,CG,A,U/T,E */
01463 , { -545, -635, -545, -890, -585} /* CG,CG,A,U/T,A */
01464 , { -515, -610, -515, -745, -555} /* CG,CG,A,U/T,C */
01465 , { -545, -635, -545, -890, -585} /* CG,CG,A,U/T,G */
01466 , { -890, -910, -940, -1285, -980} /* CG,CG,A,U/T,U/T */
01467 }
01468 }
01469 , {{{ -380, -655, -410, -660, -420} /* CG,CG,C,E,E */
01470 , { -475, -750, -505, -755, -515} /* CG,CG,C,E,A */
01471 , { -450, -725, -480, -730, -490} /* CG,CG,C,E,C */
01472 , { -380, -655, -410, -660, -420} /* CG,CG,C,E,G */
01473 , { -505, -780, -535, -785, -545} /* CG,CG,C,E,U/T */
01474 }
01475 , {{{ -555, -845, -585, -850, -595} /* CG,CG,C,A,E */
01476 , { -570, -845, -600, -850, -610} /* CG,CG,C,A,A */
01477 , { -725, -1000, -755, -1005, -765} /* CG,CG,C,A,C */
01478 , { -555, -950, -585, -955, -595} /* CG,CG,C,A,G */
01479 , { -725, -1000, -755, -1005, -765} /* CG,CG,C,A,U/T */
01480 }
01481 , {{{ -475, -750, -505, -755, -515} /* CG,CG,C,C,E */
01482 , { -475, -750, -505, -755, -515} /* CG,CG,C,C,A */
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01483 , { -480, -755, -510, -760, -520} /* CG,CG,C,C,C */
01484 , { -475, -750, -505, -755, -515} /* CG,CG,C,C,G */
01485 , { -505, -780, -535, -785, -545} /* CG,CG,C,C,U/T */
01486 }
01487 , {{ -405, -680, -435, -685, -445} /* CG,CG,C,G,E */
01488 , { -705, -1100, -735, -1105, -745} /* CG,CG,C,G,A */
01489 , { -730, -1005, -760, -1010, -770} /* CG,CG,C,G,C */
01490 , { -405, -680, -435, -685, -445} /* CG,CG,C,G,G */
01491 , { -730, -1005, -760, -1010, -770} /* CG,CG,C,G,U/T */
01492 }
01493 , {{ -490, -765, -520, -770, -530} /* CG,CG,C,U/T,E */
01494 , { -515, -790, -545, -795, -555} /* CG,CG,C,U/T,A */
01495 , { -490, -765, -520, -770, -530} /* CG,CG,C,U/T,C */
01496 , { -515, -790, -545, -795, -555} /* CG,CG,C,U/T,G */
01497 , { -910, -1185, -940, -1190, -950} /* CG,CG,C,U/T,U/T */
01498 }
01499 }
01500 , {{{ -380, -555, -405, -405, -445} /* CG,CG,G,E,E */
01501 , { -405, -705, -505, -430, -545} /* CG,CG,G,E,A */
01502 , { -380, -555, -475, -405, -515} /* CG,CG,G,E,C */
01503 , { -405, -705, -405, -430, -445} /* CG,CG,G,E,G */
01504 , { -435, -610, -530, -460, -570} /* CG,CG,G,E,U/T */
01505 }
01506 , {{ -500, -795, -595, -525, -635} /* CG,CG,G,A,E */
01507 , { -500, -795, -595, -525, -635} /* CG,CG,G,A,A */
01508 , { -655, -950, -750, -680, -790} /* CG,CG,G,A,C */
01509 , { -705, -905, -705, -1255, -745} /* CG,CG,G,A,G */
01510 , { -655, -950, -750, -680, -790} /* CG,CG,G,A,U/T */
01511 }
01512 , {{ -405, -585, -505, -430, -545} /* CG,CG,G,C,E */
01513 , { -405, -705, -505, -430, -545} /* CG,CG,G,C,A */
01514 , { -410, -585, -505, -435, -545} /* CG,CG,G,C,C */
01515 , { -405, -705, -505, -430, -545} /* CG,CG,G,C,G */
01516 , { -435, -610, -530, -460, -570} /* CG,CG,G,C,U/T */
01517 }
01518 , {{ -430, -955, -430, -685, -470} /* CG,CG,G,G,E */
01519 , { -850, -1050, -850, -1405, -890} /* CG,CG,G,G,A */
01520 , { -660, -955, -755, -685, -795} /* CG,CG,G,G,C */
01521 , { -430, -1255, -430, -1610, -470} /* CG,CG,G,G,G */
01522 , { -660, -955, -755, -685, -795} /* CG,CG,G,G,U/T */
01523 }
01524 , {{ -420, -595, -515, -445, -555} /* CG,CG,G,U/T,E */
01525 , { -445, -745, -545, -470, -585} /* CG,CG,G,U/T,A */
01526 , { -420, -595, -515, -445, -555} /* CG,CG,G,U/T,C */
01527 , { -445, -745, -545, -470, -585} /* CG,CG,G,U/T,G */
01528 , { -940, -1140, -940, -1490, -980} /* CG,CG,G,U/T,U/T */
01529 }
01530 }
01531 , {{{ -435, -655, -435, -660, -890} /* CG,CG,U/T,E,E */
01532 , { -530, -750, -530, -755, -890} /* CG,CG,U/T,E,A */
01533 , { -505, -725, -505, -730, -910} /* CG,CG,U/T,E,C */
01534 , { -435, -655, -435, -660, -940} /* CG,CG,U/T,E,G */
01535 , { -560, -780, -560, -785, -965} /* CG,CG,U/T,E,U/T */
01536 }
01537 , {{ -610, -845, -610, -850, -910} /* CG,CG,U/T,A,E */
01538 , { -625, -845, -625, -850, -910} /* CG,CG,U/T,A,A */
01539 , { -780, -1000, -780, -1005, -1185} /* CG,CG,U/T,A,C */
01540 , { -610, -950, -610, -955, -1140} /* CG,CG,U/T,A,G */
01541 , { -780, -1000, -780, -1005, -1185} /* CG,CG,U/T,A,U/T */
01542 }
01543 , {{ -530, -750, -530, -755, -940} /* CG,CG,U/T,C,E */
01544 , { -530, -750, -530, -755, -940} /* CG,CG,U/T,C,A */
01545 , { -535, -755, -535, -760, -940} /* CG,CG,U/T,C,C */
01546 , { -530, -750, -530, -755, -940} /* CG,CG,U/T,C,G */
01547 , { -560, -780, -560, -785, -965} /* CG,CG,U/T,C,U/T */
01548 }
01549 , {{ -460, -680, -460, -685, -1190} /* CG,CG,U/T,G,E */
01550 , { -760, -1100, -760, -1105, -1285} /* CG,CG,U/T,G,A */
01551 , { -785, -1005, -785, -1010, -1190} /* CG,CG,U/T,G,C */
01552 , { -460, -680, -460, -685, -1490} /* CG,CG,U/T,G,G */
01553 , { -785, -1005, -785, -1010, -1190} /* CG,CG,U/T,G,U/T */
01554 }
01555 , {{ -545, -765, -545, -770, -950} /* CG,CG,U/T,U/T,E */
01556 , { -570, -790, -570, -795, -980} /* CG,CG,U/T,U/T,A */
01557 , { -545, -765, -545, -770, -950} /* CG,CG,U/T,U/T,C */
01558 , { -570, -790, -570, -795, -980} /* CG,CG,U/T,U/T,G */
01559 , { -965, -1185, -965, -1190, -1375} /* CG,CG,U/T,U/T,U/T */
01560 }
01561 }
01562 }
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01565 , { 15, -450, -555, -10, -565} /* CG,GC,E,E,C */
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01567 , { -300, -645, -300, -410, -565} /* CG,GC,E,E,U/T */
01568 }
01569 , {{ -565, -715, -595, -595, -605} /* CG,GC,E,A,E */

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01572 , { -835, -1435, -835, -1440, -1080} /* CG,GC,E,A,G */
01573 , { -720, -910, -820, -745, -830} /* CG,GC,E,A,U/T */
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01583 , { -665, -855, -765, -690, -775} /* CG,GC,E,G,C */
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01587 , { { -300, -605, -300, -385, -525} /* CG,GC,E,U/T,E */
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01593 }
01594 , { { { 15, -185, -300, -10, -280} /* CG,GC,A,E,E */
01595 , { -250, -565, -365, -275, -370} /* CG,GC,A,E,A */
01596 , { 15, -645, -555, -10, -595} /* CG,GC,A,E,C */
01597 , { -165, -185, -450, -860, -280} /* CG,GC,A,E,G */
01598 , { -300, -645, -300, -685, -595} /* CG,GC,A,E,U/T */
01599 }
01600 , { { -570, -830, -630, -595, -635} /* CG,GC,A,A,E */
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01602 , { -570, -910, -820, -595, -860} /* CG,GC,A,A,C */
01603 , { -1190, -1545, -1345, -1535, -1230} /* CG,GC,A,A,G */
01604 , { -820, -910, -820, -1165, -860} /* CG,GC,A,A,U/T */
01605 }
01606 , { { -105, -725, -630, -130, -670} /* CG,GC,A,C,E */
01607 , { -370, -725, -950, -395, -670} /* CG,GC,A,C,A */
01608 , { -105, -875, -785, -130, -825} /* CG,GC,A,C,C */
01609 , { -630, -725, -630, -980, -670} /* CG,GC,A,C,G */
01610 , { -785, -875, -785, -1010, -825} /* CG,GC,A,C,U/T */
01611 }
01612 , { { -375, -395, -660, -1110, -490} /* CG,GC,A,G,E */
01613 , { -895, -1155, -895, -1715, -935} /* CG,GC,A,G,A */
01614 , { -765, -855, -765, -1110, -805} /* CG,GC,A,G,C */
01615 , { -375, -395, -660, -1425, -490} /* CG,GC,A,G,G */
01616 , { -765, -855, -765, -1110, -805} /* CG,GC,A,G,U/T */
01617 }
01618 , { { -300, -605, -300, -685, -550} /* CG,GC,A,U/T,E */
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01620 , { -820, -910, -820, -1045, -860} /* CG,GC,A,U/T,C */
01621 , { -510, -605, -510, -860, -550} /* CG,GC,A,U/T,G */
01622 , { -300, -895, -300, -685, -695} /* CG,GC,A,U/T,U/T */
01623 }
01624 }
01625 , { { { -165, -490, -245, -495, -205} /* CG,GC,C,E,E */
01626 , { -300, -575, -505, -580, -340} /* CG,GC,C,E,A */
01627 , { -525, -800, -555, -805, -565} /* CG,GC,C,E,C */
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01629 , { -525, -690, -555, -805, -565} /* CG,GC,C,E,U/T */
01630 }
01631 , { { -565, -840, -820, -845, -605} /* CG,GC,C,A,E */
01632 , { -565, -840, -1055, -845, -605} /* CG,GC,C,A,A */
01633 , { -790, -1065, -820, -1070, -830} /* CG,GC,C,A,C */
01634 , { -835, -1435, -835, -1440, -1080} /* CG,GC,C,A,G */
01635 , { -790, -1065, -820, -1070, -830} /* CG,GC,C,A,U/T */
01636 }
01637 , { { -605, -880, -635, -885, -645} /* CG,GC,C,C,E */
01638 , { -605, -880, -750, -885, -645} /* CG,GC,C,C,A */
01639 , { -755, -1030, -785, -1035, -795} /* CG,GC,C,C,C */
01640 , { -605, -880, -635, -885, -645} /* CG,GC,C,C,G */
01641 , { -650, -1030, -785, -1035, -690} /* CG,GC,C,C,U/T */
01642 }
01643 , { { -375, -700, -455, -705, -415} /* CG,GC,C,G,E */
01644 , { -715, -1020, -715, -1150, -790} /* CG,GC,C,G,A */
01645 , { -735, -1010, -765, -1015, -775} /* CG,GC,C,G,C */
01646 , { -375, -700, -455, -705, -415} /* CG,GC,C,G,G */
01647 , { -735, -1010, -765, -1015, -775} /* CG,GC,C,G,U/T */
01648 }
01649 , { { -485, -690, -515, -765, -525} /* CG,GC,C,U/T,E */
01650 , { -485, -760, -515, -765, -525} /* CG,GC,C,U/T,A */
01651 , { -790, -1065, -820, -1070, -830} /* CG,GC,C,U/T,C */
01652 , { -485, -760, -515, -765, -525} /* CG,GC,C,U/T,G */
01653 , { -670, -690, -1110, -910, -1025} /* CG,GC,C,U/T,U/T */
01654 }
01655 }
01656 , { { { -240, -450, -240, -380, -280} /* CG,GC,G,E,E */
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01657 , { -330, -710, -330, -380, -370} /* CG,GC,G,E,A */
01658 , { -360, -450, -555, -385, -595} /* CG,GC,G,E,C */
01659 , { -240, -710, -240, -440, -280} /* CG,GC,G,E,G */
01660 , { -385, -745, -555, -410, -595} /* CG,GC,G,E,U/T */
01661 }
01662 , { { -595, -715, -595, -645, -635} /* CG,GC,G,A,E */
01663 , { -595, -1340, -595, -645, -635} /* CG,GC,G,A,A */
01664 , { -695, -715, -820, -765, -860} /* CG,GC,G,A,C */
01665 , { -1190, -2075, -1190, -1740, -1230} /* CG,GC,G,A,G */
01666 , { -720, -1020, -820, -745, -860} /* CG,GC,G,A,U/T */
01667 }
01668 , { { -505, -830, -630, -530, -670} /* CG,GC,G,C,E */
01669 , { -535, -950, -630, -560, -670} /* CG,GC,G,C,A */
01670 , { -685, -865, -785, -710, -825} /* CG,GC,G,C,C */
01671 , { -535, -830, -630, -560, -670} /* CG,GC,G,C,G */
01672 , { -505, -865, -785, -530, -825} /* CG,GC,G,C,U/T */
01673 }
01674 , { { -450, -965, -450, -690, -490} /* CG,GC,G,G,E */
01675 , { -895, -1425, -895, -1030, -935} /* CG,GC,G,G,A */
01676 , { -665, -965, -765, -690, -805} /* CG,GC,G,G,C */
01677 , { -450, -1170, -450, -1630, -490} /* CG,GC,G,G,G */
01678 , { -665, -965, -765, -690, -805} /* CG,GC,G,G,U/T */
01679 }
01680 , { { -360, -710, -510, -385, -550} /* CG,GC,G,U/T,E */
01681 , { -415, -710, -510, -440, -550} /* CG,GC,G,U/T,A */
01682 , { -360, -900, -820, -385, -860} /* CG,GC,G,U/T,C */
01683 , { -415, -710, -510, -440, -550} /* CG,GC,G,U/T,G */
01684 , { -655, -955, -655, -1055, -695} /* CG,GC,G,U/T,U/T */
01685 }
01686 }
01687 , { { { -355, -490, -355, -495, -410} /* CG,GC,U/T,E,E */
01688 , { -355, -575, -355, -580, -495} /* CG,GC,U/T,E,A */
01689 , { -580, -800, -580, -805, -990} /* CG,GC,U/T,E,C */
01690 , { -370, -490, -540, -495, -410} /* CG,GC,U/T,E,G */
01691 , { -580, -800, -580, -805, -990} /* CG,GC,U/T,E,U/T */
01692 }
01693 , { { -620, -840, -620, -845, -1255} /* CG,GC,U/T,A,E */
01694 , { -620, -840, -620, -845, -1305} /* CG,GC,U/T,A,A */
01695 , { -845, -1065, -845, -1070, -1255} /* CG,GC,U/T,A,C */
01696 , { -1095, -1435, -1095, -1440, -1320} /* CG,GC,U/T,A,G */
01697 , { -845, -1065, -845, -1070, -1255} /* CG,GC,U/T,A,U/T */
01698 }
01699 , { { -575, -880, -660, -885, -615} /* CG,GC,U/T,C,E */
01700 , { -575, -880, -660, -885, -615} /* CG,GC,U/T,C,A */
01701 , { -810, -1030, -810, -1035, -1220} /* CG,GC,U/T,C,C */
01702 , { -660, -880, -660, -885, -1065} /* CG,GC,U/T,C,G */
01703 , { -810, -1030, -810, -1035, -1220} /* CG,GC,U/T,C,U/T */
01704 }
01705 , { { -580, -700, -790, -705, -620} /* CG,GC,U/T,G,E */
01706 , { -1115, -1145, -1340, -1150, -1155} /* CG,GC,U/T,G,A */
01707 , { -790, -1010, -790, -1015, -1200} /* CG,GC,U/T,G,C */
01708 , { -580, -700, -905, -705, -620} /* CG,GC,U/T,G,G */
01709 , { -790, -1010, -790, -1015, -1200} /* CG,GC,U/T,G,U/T */
01710 }
01711 , { { -540, -760, -540, -765, -945} /* CG,GC,U/T,U/T,E */
01712 , { -540, -760, -540, -765, -945} /* CG,GC,U/T,U/T,A */
01713 , { -845, -1065, -845, -1070, -1255} /* CG,GC,U/T,U/T,C */
01714 , { -540, -760, -540, -765, -945} /* CG,GC,U/T,U/T,G */
01715 , { -685, -905, -685, -910, -1470} /* CG,GC,U/T,U/T,U/T */
01716 }
01717 }
01718 }
01719 , { { { { 25, -95, 0, -255, -15} /* CG,GT,E,E,E */
01720 , { -390, -630, -420, -555, -430} /* CG,GT,E,E,A */
01721 , { -530, -705, -625, -555, -640} /* CG,GT,E,E,C */
01722 , { 25, -95, 0, -255, -15} /* CG,GT,E,E,G */
01723 , { -530, -600, -625, -555, -640} /* CG,GT,E,E,U/T */
01724 }
01725 , { { -750, -985, -780, -820, -790} /* CG,GT,E,A,E */
01726 , { -885, -1065, -980, -910, -995} /* CG,GT,E,A,A */
01727 , { -795, -985, -890, -820, -905} /* CG,GT,E,A,C */
01728 , { -750, -990, -780, -1150, -790} /* CG,GT,E,A,G */
01729 , { -795, -985, -890, -820, -905} /* CG,GT,E,A,U/T */
01730 }
01731 , { { -650, -825, -745, -675, -760} /* CG,GT,E,C,E */
01732 , { -650, -840, -745, -675, -760} /* CG,GT,E,C,A */
01733 , { -650, -825, -745, -675, -760} /* CG,GT,E,C,C */
01734 , { -650, -840, -745, -675, -760} /* CG,GT,E,C,G */
01735 , { -650, -825, -745, -675, -760} /* CG,GT,E,C,U/T */
01736 }
01737 , { { -185, -305, -210, -465, -225} /* CG,GT,E,G,E */
01738 , { -600, -840, -630, -1000, -640} /* CG,GT,E,G,A */
01739 , { -740, -930, -835, -765, -850} /* CG,GT,E,G,C */
01740 , { -185, -305, -210, -465, -225} /* CG,GT,E,G,G */
01741 , { -740, -930, -835, -765, -850} /* CG,GT,E,G,U/T */
01742 }
01743 , { { -530, -600, -625, -555, -640} /* CG,GT,E,U/T,E */

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01744 , { -530, -720, -625, -555, -640} /* CG,GT,E,U/T,A */
01745 , { -530, -705, -625, -555, -640} /* CG,GT,E,U/T,C */
01746 , { -530, -720, -625, -555, -640} /* CG,GT,E,U/T,G */
01747 , { -580, -600, -625, -880, -640} /* CG,GT,E,U/T,U/T */
01748 }
01749 }
01750 ,{{{ 0, -95, 0, -855, -40} /* CG,GT,A,E,E */
01751 , { -540, -630, -540, -885, -580} /* CG,GT,A,E,A */
01752 , { -625, -720, -625, -855, -665} /* CG,GT,A,E,C */
01753 , { 0, -95, 0, -975, -40} /* CG,GT,A,E,G */
01754 , { -580, -600, -625, -855, -665} /* CG,GT,A,E,U/T */
01755 }
01756 ,{{{ -890, -985, -890, -1240, -930} /* CG,GT,A,A,E */
01757 , { -980, -1065, -980, -1330, -1020} /* CG,GT,A,A,A */
01758 , { -890, -985, -890, -1240, -930} /* CG,GT,A,A,C */
01759 , { -900, -990, -900, -1245, -940} /* CG,GT,A,A,G */
01760 , { -890, -985, -890, -1240, -930} /* CG,GT,A,A,U/T */
01761 }
01762 ,{{{ -745, -840, -745, -975, -785} /* CG,GT,A,C,E */
01763 , { -745, -840, -745, -1095, -785} /* CG,GT,A,C,A */
01764 , { -745, -840, -745, -975, -785} /* CG,GT,A,C,C */
01765 , { -745, -840, -745, -1095, -785} /* CG,GT,A,C,G */
01766 , { -745, -840, -745, -975, -785} /* CG,GT,A,C,U/T */
01767 }
01768 ,{{{ -210, -305, -210, -1095, -250} /* CG,GT,A,G,E */
01769 , { -750, -840, -750, -1095, -790} /* CG,GT,A,G,A */
01770 , { -835, -930, -835, -1185, -875} /* CG,GT,A,G,C */
01771 , { -210, -305, -210, -1185, -250} /* CG,GT,A,G,G */
01772 , { -835, -930, -835, -1185, -875} /* CG,GT,A,G,U/T */
01773 }
01774 ,{{{ -580, -600, -625, -855, -665} /* CG,GT,A,U/T,E */
01775 , { -625, -720, -625, -975, -665} /* CG,GT,A,U/T,A */
01776 , { -625, -720, -625, -855, -665} /* CG,GT,A,U/T,C */
01777 , { -625, -720, -625, -975, -665} /* CG,GT,A,U/T,G */
01778 , { -580, -600, -625, -975, -665} /* CG,GT,A,U/T,U/T */
01779 }
01780 }
01781 ,{{{ 25, -250, -5, -255, -15} /* CG,GT,C,E,E */
01782 , { -390, -785, -420, -790, -430} /* CG,GT,C,E,A */
01783 , { -600, -875, -630, -880, -640} /* CG,GT,C,E,C */
01784 , { 25, -250, -5, -255, -15} /* CG,GT,C,E,G */
01785 , { -600, -875, -630, -880, -640} /* CG,GT,C,E,U/T */
01786 }
01787 ,{{{ -750, -1140, -780, -1145, -790} /* CG,GT,C,A,E */
01788 , { -955, -1230, -985, -1235, -995} /* CG,GT,C,A,A */
01789 , { -865, -1140, -895, -1145, -905} /* CG,GT,C,A,C */
01790 , { -750, -1145, -780, -1150, -790} /* CG,GT,C,A,G */
01791 , { -865, -1140, -895, -1145, -905} /* CG,GT,C,A,U/T */
01792 }
01793 ,{{{ -720, -995, -750, -1000, -760} /* CG,GT,C,C,E */
01794 , { -720, -995, -750, -1000, -760} /* CG,GT,C,C,A */
01795 , { -720, -995, -750, -1000, -760} /* CG,GT,C,C,C */
01796 , { -720, -995, -750, -1000, -760} /* CG,GT,C,C,G */
01797 , { -720, -995, -750, -1000, -760} /* CG,GT,C,C,U/T */
01798 }
01799 ,{{{ -185, -460, -215, -465, -225} /* CG,GT,C,G,E */
01800 , { -600, -995, -630, -1000, -640} /* CG,GT,C,G,A */
01801 , { -810, -1085, -840, -1090, -850} /* CG,GT,C,G,C */
01802 , { -185, -460, -215, -465, -225} /* CG,GT,C,G,G */
01803 , { -810, -1085, -840, -1090, -850} /* CG,GT,C,G,U/T */
01804 }
01805 ,{{{ -600, -875, -630, -880, -640} /* CG,GT,C,U/T,E */
01806 , { -600, -875, -630, -880, -640} /* CG,GT,C,U/T,A */
01807 , { -600, -875, -630, -880, -640} /* CG,GT,C,U/T,C */
01808 , { -600, -875, -630, -880, -640} /* CG,GT,C,U/T,G */
01809 , { -600, -875, -630, -880, -640} /* CG,GT,C,U/T,U/T */
01810 }
01811 }
01812 ,{{{ 0, -705, 0, -555, -40} /* CG,GT,G,E,E */
01813 , { -530, -740, -540, -555, -580} /* CG,GT,G,E,A */
01814 , { -530, -705, -625, -555, -665} /* CG,GT,G,E,C */
01815 , { 0, -825, 0, -555, -40} /* CG,GT,G,E,G */
01816 , { -530, -705, -625, -555, -665} /* CG,GT,G,E,U/T */
01817 }
01818 ,{{{ -795, -1090, -890, -820, -930} /* CG,GT,G,A,E */
01819 , { -885, -1180, -980, -910, -1020} /* CG,GT,G,A,A */
01820 , { -795, -1090, -890, -820, -930} /* CG,GT,G,A,C */
01821 , { -900, -1100, -900, -1450, -940} /* CG,GT,G,A,G */
01822 , { -795, -1090, -890, -820, -930} /* CG,GT,G,A,U/T */
01823 }
01824 ,{{{ -650, -825, -745, -675, -785} /* CG,GT,G,C,E */
01825 , { -650, -945, -745, -675, -785} /* CG,GT,G,C,A */
01826 , { -650, -825, -745, -675, -785} /* CG,GT,G,C,C */
01827 , { -650, -945, -745, -675, -785} /* CG,GT,G,C,G */
01828 , { -650, -825, -745, -675, -785} /* CG,GT,G,C,U/T */
01829 }
01830 ,{{{ -210, -950, -210, -765, -250} /* CG,GT,G,G,E */
```

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01831      , { -750, -950, -750, -1300, -790} /* CG,GT,G,G,A */
01832      , { -740, -1035, -835, -765, -875} /* CG,GT,G,G,C */
01833      , { -210, -1035, -210, -1390, -250} /* CG,GT,G,G,G */
01834      , { -740, -1035, -835, -765, -875} /* CG,GT,G,G,U/T */
01835      }
01836      , { { -530, -705, -625, -555, -665} /* CG,GT,G,U/T,E */
01837      , { -530, -825, -625, -555, -665} /* CG,GT,G,U/T,A */
01838      , { -530, -705, -625, -555, -665} /* CG,GT,G,U/T,C */
01839      , { -530, -825, -625, -555, -665} /* CG,GT,G,U/T,G */
01840      , { -625, -825, -625, -1180, -665} /* CG,GT,G,U/T,U/T */
01841      }
01842      }
01843      , { { { -30, -250, -30, -255, -975} /* CG,GT,U/T,E,E */
01844      , { -445, -785, -445, -790, -975} /* CG,GT,U/T,E,A */
01845      , { -655, -875, -655, -880, -1060} /* CG,GT,U/T,E,C */
01846      , { -30, -250, -30, -255, -1060} /* CG,GT,U/T,E,G */
01847      , { -655, -875, -655, -880, -1060} /* CG,GT,U/T,E,U/T */
01848      }
01849      , { { -805, -1140, -805, -1145, -1295} /* CG,GT,U/T,A,E */
01850      , { -1010, -1230, -1010, -1235, -1295} /* CG,GT,U/T,A,A */
01851      , { -920, -1140, -920, -1145, -1325} /* CG,GT,U/T,A,C */
01852      , { -805, -1145, -805, -1150, -1335} /* CG,GT,U/T,A,G */
01853      , { -920, -1140, -920, -1145, -1325} /* CG,GT,U/T,A,U/T */
01854      }
01855      , { { -775, -995, -775, -1000, -1180} /* CG,GT,U/T,C,E */
01856      , { -775, -995, -775, -1000, -1180} /* CG,GT,U/T,C,A */
01857      , { -775, -995, -775, -1000, -1180} /* CG,GT,U/T,C,C */
01858      , { -775, -995, -775, -1000, -1180} /* CG,GT,U/T,C,G */
01859      , { -775, -995, -775, -1000, -1180} /* CG,GT,U/T,C,U/T */
01860      }
01861      , { { -240, -460, -240, -465, -1185} /* CG,GT,U/T,G,E */
01862      , { -655, -995, -655, -1000, -1185} /* CG,GT,U/T,G,A */
01863      , { -865, -1085, -865, -1090, -1270} /* CG,GT,U/T,G,C */
01864      , { -240, -460, -240, -465, -1270} /* CG,GT,U/T,G,G */
01865      , { -865, -1085, -865, -1090, -1270} /* CG,GT,U/T,G,U/T */
01866      }
01867      , { { -655, -875, -655, -880, -1060} /* CG,GT,U/T,U/T,E */
01868      , { -655, -875, -655, -880, -1060} /* CG,GT,U/T,U/T,A */
01869      , { -655, -875, -655, -880, -1060} /* CG,GT,U/T,U/T,C */
01870      , { -655, -875, -655, -880, -1060} /* CG,GT,U/T,U/T,G */
01871      , { -655, -875, -655, -880, -1060} /* CG,GT,U/T,U/T,U/T */
01872      }
01873      }
01874      }
01875      , { { { { 320, 200, 290, 40, 280} /* CG,UG,E,E,E */
01876      , { 20, -170, -80, -5, -95} /* CG,UG,E,E,A */
01877      , { -235, -415, -335, -260, -345} /* CG,UG,E,E,C */
01878      , { 320, 200, 290, 40, 280} /* CG,UG,E,E,G */
01879      , { -235, -305, -335, -260, -345} /* CG,UG,E,E,U/T */
01880      }
01881      , { { 5, -185, -95, -20, -110} /* CG,UG,E,A,E */
01882      , { 5, -185, -95, -20, -110} /* CG,UG,E,A,A */
01883      , { -250, -440, -350, -275, -360} /* CG,UG,E,A,C */
01884      , { -370, -610, -400, -770, -410} /* CG,UG,E,A,G */
01885      , { -250, -440, -350, -275, -360} /* CG,UG,E,A,U/T */
01886      }
01887      , { { -235, -415, -335, -260, -345} /* CG,UG,E,C,E */
01888      , { -235, -425, -335, -260, -345} /* CG,UG,E,C,A */
01889      , { -235, -415, -335, -260, -345} /* CG,UG,E,C,C */
01890      , { -235, -425, -335, -260, -345} /* CG,UG,E,C,G */
01891      , { -235, -415, -335, -260, -345} /* CG,UG,E,C,U/T */
01892      }
01893      , { { 225, 105, 195, -55, 185} /* CG,UG,E,G,E */
01894      , { -535, -775, -565, -935, -575} /* CG,UG,E,G,A */
01895      , { -330, -520, -430, -355, -440} /* CG,UG,E,G,C */
01896      , { 225, 105, 195, -55, 185} /* CG,UG,E,G,G */
01897      , { -330, -520, -430, -355, -440} /* CG,UG,E,G,U/T */
01898      }
01899      , { { -655, -725, -755, -680, -765} /* CG,UG,E,U/T,E */
01900      , { -655, -845, -755, -680, -765} /* CG,UG,E,U/T,A */
01901      , { -655, -835, -755, -680, -765} /* CG,UG,E,U/T,C */
01902      , { -655, -845, -755, -680, -765} /* CG,UG,E,U/T,G */
01903      , { -705, -725, -755, -1005, -765} /* CG,UG,E,U/T,U/T */
01904      }
01905      }
01906      , { { { 290, 200, 290, -425, 250} /* CG,UG,A,E,E */
01907      , { -80, -170, -80, -425, -120} /* CG,UG,A,E,A */
01908      , { -335, -425, -335, -560, -375} /* CG,UG,A,E,C */
01909      , { 290, 200, 290, -680, 250} /* CG,UG,A,E,G */
01910      , { -285, -305, -335, -560, -375} /* CG,UG,A,E,U/T */
01911      }
01912      , { { -95, -185, -95, -440, -135} /* CG,UG,A,A,E */
01913      , { -95, -185, -95, -440, -135} /* CG,UG,A,A,A */
01914      , { -350, -440, -350, -695, -390} /* CG,UG,A,A,C */
01915      , { -520, -610, -520, -865, -560} /* CG,UG,A,A,G */
01916      , { -350, -440, -350, -695, -390} /* CG,UG,A,A,U/T */
01917      }

```

```

01918 ,{{ -335, -425, -335, -560, -375} /* CG,UG,A,C,E */
01919 ,{ -335, -425, -335, -680, -375} /* CG,UG,A,C,A */
01920 ,{ -335, -425, -335, -560, -375} /* CG,UG,A,C,C */
01921 ,{ -335, -425, -335, -680, -375} /* CG,UG,A,C,G */
01922 ,{ -335, -425, -335, -560, -375} /* CG,UG,A,C,U/T */
01923 }
01924 ,{{ 195, 105, 195, -775, 155} /* CG,UG,A,G,E */
01925 ,{ -685, -775, -685, -1030, -725} /* CG,UG,A,G,A */
01926 ,{ -430, -520, -430, -775, -470} /* CG,UG,A,G,C */
01927 ,{ 195, 105, 195, -775, 155} /* CG,UG,A,G,G */
01928 ,{ -430, -520, -430, -775, -470} /* CG,UG,A,G,U/T */
01929 }
01930 ,{{ -705, -725, -755, -980, -795} /* CG,UG,A,U/T,E */
01931 ,{ -755, -845, -755, -1100, -795} /* CG,UG,A,U/T,A */
01932 ,{ -755, -845, -755, -980, -795} /* CG,UG,A,U/T,C */
01933 ,{ -755, -845, -755, -1100, -795} /* CG,UG,A,U/T,G */
01934 ,{ -705, -725, -755, -1100, -795} /* CG,UG,A,U/T,U/T */
01935 }
01936 }
01937 ,{{{ 320, 45, 290, 40, 280} /* CG,UG,C,E,E */
01938 ,{ -55, -325, -80, -330, -95} /* CG,UG,C,E,A */
01939 ,{ -305, -580, -335, -585, -345} /* CG,UG,C,E,C */
01940 ,{ 320, 45, 290, 40, 280} /* CG,UG,C,E,G */
01941 ,{ -305, -580, -335, -585, -345} /* CG,UG,C,E,U/T */
01942 }
01943 ,{{ -70, -340, -95, -345, -110} /* CG,UG,C,A,E */
01944 ,{ -70, -340, -95, -345, -110} /* CG,UG,C,A,A */
01945 ,{ -320, -595, -350, -600, -360} /* CG,UG,C,A,C */
01946 ,{ -370, -765, -400, -770, -410} /* CG,UG,C,A,G */
01947 ,{ -320, -595, -350, -600, -360} /* CG,UG,C,A,U/T */
01948 }
01949 ,{{ -305, -580, -335, -585, -345} /* CG,UG,C,C,E */
01950 ,{ -305, -580, -335, -585, -345} /* CG,UG,C,C,A */
01951 ,{ -305, -580, -335, -585, -345} /* CG,UG,C,C,C */
01952 ,{ -305, -580, -335, -585, -345} /* CG,UG,C,C,G */
01953 ,{ -305, -580, -335, -585, -345} /* CG,UG,C,C,U/T */
01954 }
01955 ,{{ 225, -50, 195, -55, 185} /* CG,UG,C,G,E */
01956 ,{ -535, -930, -565, -935, -575} /* CG,UG,C,G,A */
01957 ,{ -400, -675, -430, -680, -440} /* CG,UG,C,G,C */
01958 ,{ 225, -50, 195, -55, 185} /* CG,UG,C,G,G */
01959 ,{ -400, -675, -430, -680, -440} /* CG,UG,C,G,U/T */
01960 }
01961 ,{{ -725, -1000, -755, -1005, -765} /* CG,UG,C,U/T,E */
01962 ,{ -725, -1000, -755, -1005, -765} /* CG,UG,C,U/T,A */
01963 ,{ -725, -1000, -755, -1005, -765} /* CG,UG,C,U/T,C */
01964 ,{ -725, -1000, -755, -1005, -765} /* CG,UG,C,U/T,G */
01965 ,{ -725, -1000, -755, -1005, -765} /* CG,UG,C,U/T,U/T */
01966 }
01967 }
01968 ,{{{ 290, -280, 290, -5, 250} /* CG,UG,G,E,E */
01969 ,{ 20, -280, -80, -5, -120} /* CG,UG,G,E,A */
01970 ,{ -235, -415, -335, -260, -375} /* CG,UG,G,E,C */
01971 ,{ 290, -535, 290, -260, 250} /* CG,UG,G,E,G */
01972 ,{ -235, -415, -335, -260, -375} /* CG,UG,G,E,U/T */
01973 }
01974 ,{{ 5, -295, -95, -20, -135} /* CG,UG,G,A,E */
01975 ,{ 5, -295, -95, -20, -135} /* CG,UG,G,A,A */
01976 ,{ -250, -550, -350, -275, -390} /* CG,UG,G,A,C */
01977 ,{ -520, -720, -520, -1070, -560} /* CG,UG,G,A,G */
01978 ,{ -250, -550, -350, -275, -390} /* CG,UG,G,A,U/T */
01979 }
01980 ,{{ -235, -415, -335, -260, -375} /* CG,UG,G,C,E */
01981 ,{ -235, -535, -335, -260, -375} /* CG,UG,G,C,A */
01982 ,{ -235, -415, -335, -260, -375} /* CG,UG,G,C,C */
01983 ,{ -235, -535, -335, -260, -375} /* CG,UG,G,C,G */
01984 ,{ -235, -415, -335, -260, -375} /* CG,UG,G,C,U/T */
01985 }
01986 ,{{ 195, -630, 195, -355, 155} /* CG,UG,G,G,E */
01987 ,{ -685, -885, -685, -1235, -725} /* CG,UG,G,G,A */
01988 ,{ -330, -630, -430, -355, -470} /* CG,UG,G,G,C */
01989 ,{ 195, -630, 195, -980, 155} /* CG,UG,G,G,G */
01990 ,{ -330, -630, -430, -355, -470} /* CG,UG,G,G,U/T */
01991 }
01992 ,{{ -655, -835, -755, -680, -795} /* CG,UG,G,U/T,E */
01993 ,{ -655, -955, -755, -680, -795} /* CG,UG,G,U/T,A */
01994 ,{ -655, -835, -755, -680, -795} /* CG,UG,G,U/T,C */
01995 ,{ -655, -955, -755, -680, -795} /* CG,UG,G,U/T,G */
01996 ,{ -755, -955, -755, -1305, -795} /* CG,UG,G,U/T,U/T */
01997 }
01998 }
01999 ,{{{ 265, 45, 265, 40, -395} /* CG,UG,U/T,E,E */
02000 ,{ -105, -325, -105, -330, -395} /* CG,UG,U/T,E,A */
02001 ,{ -360, -580, -360, -585, -770} /* CG,UG,U/T,E,C */
02002 ,{ 265, 45, 265, 40, -770} /* CG,UG,U/T,E,G */
02003 ,{ -360, -580, -360, -585, -770} /* CG,UG,U/T,E,U/T */
02004 }

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02005 ,{{ -120, -340, -120, -345, -410} /* CG,UG,U/T,A,E */
02006 ,{ -120, -340, -120, -345, -410} /* CG,UG,U/T,A,A */
02007 ,{ -375, -595, -375, -600, -785} /* CG,UG,U/T,A,C */
02008 ,{ -425, -765, -425, -770, -955} /* CG,UG,U/T,A,G */
02009 ,{ -375, -595, -375, -600, -785} /* CG,UG,U/T,A,U/T */
02010 }
02011 ,{{ -360, -580, -360, -585, -770} /* CG,UG,U/T,C,E */
02012 ,{ -360, -580, -360, -585, -770} /* CG,UG,U/T,C,A */
02013 ,{ -360, -580, -360, -585, -770} /* CG,UG,U/T,C,C */
02014 ,{ -360, -580, -360, -585, -770} /* CG,UG,U/T,C,G */
02015 ,{ -360, -580, -360, -585, -770} /* CG,UG,U/T,C,U/T */
02016 }
02017 ,{{ 170, -50, 170, -55, -865} /* CG,UG,U/T,G,E */
02018 ,{ -590, -930, -590, -935, -1120} /* CG,UG,U/T,G,A */
02019 ,{ -455, -675, -455, -680, -865} /* CG,UG,U/T,G,C */
02020 ,{ 170, -50, 170, -55, -865} /* CG,UG,U/T,G,G */
02021 ,{ -455, -675, -455, -680, -865} /* CG,UG,U/T,G,U/T */
02022 }
02023 ,{{ -780, -1000, -780, -1005, -1190} /* CG,UG,U/T,U/T,E */
02024 ,{ -780, -1000, -780, -1005, -1190} /* CG,UG,U/T,U/T,A */
02025 ,{ -780, -1000, -780, -1005, -1190} /* CG,UG,U/T,U/T,C */
02026 ,{ -780, -1000, -780, -1005, -1190} /* CG,UG,U/T,U/T,G */
02027 ,{ -780, -1000, -780, -1005, -1190} /* CG,UG,U/T,U/T,U/T */
02028 }
02029 }
02030 }
02031 ,{{{ 635, 515, 610, 415, 595} /* CG,AT,E,E,E */
02032 ,{ 440, 250, 340, 415, 330} /* CG,AT,E,E,A */
02033 ,{ 290, 115, 190, 265, 180} /* CG,AT,E,E,C */
02034 ,{ 635, 515, 610, 355, 595} /* CG,AT,E,E,G */
02035 ,{ 290, 115, 190, 265, 180} /* CG,AT,E,E,U/T */
02036 }
02037 ,{{ 380, 190, 280, 355, 270} /* CG,AT,E,A,E */
02038 ,{ 380, 190, 280, 355, 270} /* CG,AT,E,A,A */
02039 ,{ 225, 35, 125, 200, 115} /* CG,AT,E,A,C */
02040 ,{ -265, -505, -295, -665, -305} /* CG,AT,E,A,G */
02041 ,{ 225, 35, 125, 200, 115} /* CG,AT,E,A,U/T */
02042 }
02043 ,{{ 295, 115, 195, 270, 180} /* CG,AT,E,C,E */
02044 ,{ 295, 100, 195, 270, 180} /* CG,AT,E,C,A */
02045 ,{ 290, 115, 190, 265, 180} /* CG,AT,E,C,C */
02046 ,{ 295, 100, 195, 270, 180} /* CG,AT,E,C,G */
02047 ,{ 290, 115, 190, 265, 180} /* CG,AT,E,C,U/T */
02048 }
02049 ,{{ 610, 490, 585, 330, 570} /* CG,AT,E,G,E */
02050 ,{ -140, -380, -170, -540, -180} /* CG,AT,E,G,A */
02051 ,{ 260, 70, 160, 235, 150} /* CG,AT,E,G,C */
02052 ,{ 610, 490, 585, 330, 570} /* CG,AT,E,G,G */
02053 ,{ 260, 70, 160, 235, 150} /* CG,AT,E,G,U/T */
02054 }
02055 ,{{ 250, 70, 150, 225, 135} /* CG,AT,E,U/T,E */
02056 ,{ 250, 55, 150, 225, 135} /* CG,AT,E,U/T,A */
02057 ,{ 245, 70, 145, 220, 135} /* CG,AT,E,U/T,C */
02058 ,{ 250, 55, 150, 225, 135} /* CG,AT,E,U/T,G */
02059 ,{ -295, -315, -340, -595, -355} /* CG,AT,E,U/T,U/T */
02060 }
02061 }
02062 ,{{{ 610, 515, 610, -5, 570} /* CG,AT,A,E,E */
02063 ,{ 340, 250, 340, -5, 300} /* CG,AT,A,E,A */
02064 ,{ 190, 100, 190, -35, 150} /* CG,AT,A,E,C */
02065 ,{ 610, 515, 610, -150, 570} /* CG,AT,A,E,G */
02066 ,{ 190, 100, 190, -35, 150} /* CG,AT,A,E,U/T */
02067 }
02068 ,{{ 280, 190, 280, -65, 240} /* CG,AT,A,A,E */
02069 ,{ 280, 190, 280, -65, 240} /* CG,AT,A,A,A */
02070 ,{ 125, 35, 125, -220, 85} /* CG,AT,A,A,C */
02071 ,{ -410, -505, -410, -760, -450} /* CG,AT,A,A,G */
02072 ,{ 125, 35, 125, -220, 85} /* CG,AT,A,A,U/T */
02073 }
02074 ,{{ 195, 100, 195, -35, 155} /* CG,AT,A,C,E */
02075 ,{ 195, 100, 195, -150, 155} /* CG,AT,A,C,A */
02076 ,{ 190, 100, 190, -35, 150} /* CG,AT,A,C,C */
02077 ,{ 195, 100, 195, -150, 155} /* CG,AT,A,C,G */
02078 ,{ 190, 100, 190, -35, 150} /* CG,AT,A,C,U/T */
02079 }
02080 ,{{ 585, 490, 585, -185, 545} /* CG,AT,A,G,E */
02081 ,{ -285, -380, -285, -635, -325} /* CG,AT,A,G,A */
02082 ,{ 160, 70, 160, -185, 120} /* CG,AT,A,G,C */
02083 ,{ 585, 490, 585, -390, 545} /* CG,AT,A,G,G */
02084 ,{ 160, 70, 160, -185, 120} /* CG,AT,A,G,U/T */
02085 }
02086 ,{{ 150, 55, 150, -80, 110} /* CG,AT,A,U/T,E */
02087 ,{ 150, 55, 150, -195, 110} /* CG,AT,A,U/T,A */
02088 ,{ 145, 55, 145, -80, 105} /* CG,AT,A,U/T,C */
02089 ,{ 150, 55, 150, -195, 110} /* CG,AT,A,U/T,G */
02090 ,{ -295, -315, -340, -690, -380} /* CG,AT,A,U/T,U/T */
02091 }

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02092    }
02093    ,{{{    635,    360,    605,    355,    595} /* CG,AT,C,E,E */
02094    ,{    370,    95,    340,    90,    330} /* CG,AT,C,E,A */
02095    ,{    220,   -55,    190,   -60,    180} /* CG,AT,C,E,C */
02096    ,{    635,    360,    605,    355,    595} /* CG,AT,C,E,G */
02097    ,{    220,   -55,    190,   -60,    180} /* CG,AT,C,E,U/T */
02098    }
02099    ,{{{    310,    35,    280,    30,    270} /* CG,AT,C,A,E */
02100    ,{    310,    35,    280,    30,    270} /* CG,AT,C,A,A */
02101    ,{    155,   -120,    125,   -125,    115} /* CG,AT,C,A,C */
02102    ,{   -265,   -660,   -295,   -665,   -305} /* CG,AT,C,A,G */
02103    ,{    155,   -120,    125,   -125,    115} /* CG,AT,C,A,U/T */
02104    }
02105    ,{{{    220,   -50,    190,   -55,    180} /* CG,AT,C,C,E */
02106    ,{    220,   -50,    190,   -55,    180} /* CG,AT,C,C,A */
02107    ,{    220,   -55,    190,   -60,    180} /* CG,AT,C,C,C */
02108    ,{    220,   -50,    190,   -55,    180} /* CG,AT,C,C,G */
02109    ,{    220,   -55,    190,   -60,    180} /* CG,AT,C,C,U/T */
02110    }
02111    ,{{{    610,    335,    580,    330,    570} /* CG,AT,C,G,E */
02112    ,{   -140,   -535,   -170,   -540,   -180} /* CG,AT,C,G,A */
02113    ,{    190,   -85,    160,   -90,    150} /* CG,AT,C,G,C */
02114    ,{    610,    335,    580,    330,    570} /* CG,AT,C,G,G */
02115    ,{    190,   -85,    160,   -90,    150} /* CG,AT,C,G,U/T */
02116    }
02117    ,{{{    175,   -95,    145,   -100,    135} /* CG,AT,C,U/T,E */
02118    ,{    175,   -95,    145,   -100,    135} /* CG,AT,C,U/T,A */
02119    ,{    175,   -100,    145,   -105,    135} /* CG,AT,C,U/T,C */
02120    ,{    175,   -95,    145,   -100,    135} /* CG,AT,C,U/T,G */
02121    ,{   -315,   -590,   -345,   -595,   -355} /* CG,AT,C,U/T,U/T */
02122    }
02123    }
02124    ,{{{    610,    140,    610,    415,    570} /* CG,AT,G,E,E */
02125    ,{    440,    140,    340,    415,    300} /* CG,AT,G,E,A */
02126    ,{    290,    115,    190,    265,    150} /* CG,AT,G,E,C */
02127    ,{    610,    -5,    610,    270,    570} /* CG,AT,G,E,G */
02128    ,{    290,    115,    190,    265,    150} /* CG,AT,G,E,U/T */
02129    }
02130    ,{{{    380,    80,    280,    355,    240} /* CG,AT,G,A,E */
02131    ,{    380,    80,    280,    355,    240} /* CG,AT,G,A,A */
02132    ,{    225,   -70,    125,    200,    85} /* CG,AT,G,A,C */
02133    ,{   -410,   -610,   -410,   -965,   -450} /* CG,AT,G,A,G */
02134    ,{    225,   -70,    125,    200,    85} /* CG,AT,G,A,U/T */
02135    }
02136    ,{{{    295,    115,    195,    270,    155} /* CG,AT,G,C,E */
02137    ,{    295,    -5,    195,    270,    155} /* CG,AT,G,C,A */
02138    ,{    290,    115,    190,    265,    150} /* CG,AT,G,C,C */
02139    ,{    295,    -5,    195,    270,    155} /* CG,AT,G,C,G */
02140    ,{    290,    115,    190,    265,    150} /* CG,AT,G,C,U/T */
02141    }
02142    ,{{{    585,   -35,    585,    235,    545} /* CG,AT,G,G,E */
02143    ,{   -285,   -485,   -285,   -840,   -325} /* CG,AT,G,G,A */
02144    ,{    260,   -35,    160,    235,    120} /* CG,AT,G,G,C */
02145    ,{    585,   -240,    585,   -595,    545} /* CG,AT,G,G,G */
02146    ,{    260,   -35,    160,    235,    120} /* CG,AT,G,G,U/T */
02147    }
02148    ,{{{    250,    70,    150,    225,    110} /* CG,AT,G,U/T,E */
02149    ,{    250,   -50,    150,    225,    110} /* CG,AT,G,U/T,A */
02150    ,{    245,    70,    145,    220,    105} /* CG,AT,G,U/T,C */
02151    ,{    250,   -50,    150,    225,    110} /* CG,AT,G,U/T,G */
02152    ,{   -340,   -540,   -340,   -895,   -380} /* CG,AT,G,U/T,U/T */
02153    }
02154    }
02155    ,{{{    580,    360,    580,    355,    30} /* CG,AT,U/T,E,E */
02156    ,{    315,    95,    315,    90,    30} /* CG,AT,U/T,E,A */
02157    ,{    165,   -55,    165,   -60,   -240} /* CG,AT,U/T,E,C */
02158    ,{    580,    360,    580,    355,   -240} /* CG,AT,U/T,E,G */
02159    ,{    165,   -55,    165,   -60,   -240} /* CG,AT,U/T,E,U/T */
02160    }
02161    ,{{{    255,    35,    255,    30,   -30} /* CG,AT,U/T,A,E */
02162    ,{    255,    35,    255,    30,   -30} /* CG,AT,U/T,A,A */
02163    ,{    100,   -120,    100,   -125,   -305} /* CG,AT,U/T,A,C */
02164    ,{   -320,   -660,   -320,   -665,   -845} /* CG,AT,U/T,A,G */
02165    ,{    100,   -120,    100,   -125,   -305} /* CG,AT,U/T,A,U/T */
02166    }
02167    ,{{{    165,   -50,    165,   -55,   -240} /* CG,AT,U/T,C,E */
02168    ,{    165,   -50,    165,   -55,   -240} /* CG,AT,U/T,C,A */
02169    ,{    165,   -55,    165,   -60,   -240} /* CG,AT,U/T,C,C */
02170    ,{    165,   -50,    165,   -55,   -240} /* CG,AT,U/T,C,G */
02171    ,{    165,   -55,    165,   -60,   -240} /* CG,AT,U/T,C,U/T */
02172    }
02173    ,{{{    555,    335,    555,    330,   -270} /* CG,AT,U/T,G,E */
02174    ,{   -195,   -535,   -195,   -540,   -720} /* CG,AT,U/T,G,A */
02175    ,{    135,   -85,    135,   -90,   -270} /* CG,AT,U/T,G,C */
02176    ,{    555,    335,    555,    330,   -475} /* CG,AT,U/T,G,G */
02177    ,{    135,   -85,    135,   -90,   -270} /* CG,AT,U/T,G,U/T */
02178    }
```

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02179 ,{{ 120, -95, 120, -100, -285} /* CG,AT,U/T,U/T,E */
02180 ,{ 120, -95, 120, -100, -285} /* CG,AT,U/T,U/T,A */
02181 ,{ 120, -100, 120, -105, -285} /* CG,AT,U/T,U/T,C */
02182 ,{ 120, -95, 120, -100, -285} /* CG,AT,U/T,U/T,G */
02183 ,{ -370, -590, -370, -595, -775} /* CG,AT,U/T,U/T,U/T */
02184 }
02185 }
02186 }
02187 ,{{{ 595, 480, 570, 320, 555} /* CG,UA,E,E,E */
02188 ,{ 345, 150, 245, 320, 230} /* CG,UA,E,E,A */
02189 ,{ 280, 100, 180, 255, 165} /* CG,UA,E,E,C */
02190 ,{ 595, 480, 570, 320, 555} /* CG,UA,E,E,G */
02191 ,{ 215, 35, 115, 190, 100} /* CG,UA,E,E,U/T */
02192 }
02193 ,{{ 330, 135, 230, 305, 215} /* CG,UA,E,A,E */
02194 ,{ 330, 135, 230, 305, 215} /* CG,UA,E,A,A */
02195 ,{ 190, -5, 90, 165, 75} /* CG,UA,E,A,C */
02196 ,{ -325, -565, -355, -725, -365} /* CG,UA,E,A,G */
02197 ,{ 190, -5, 90, 165, 75} /* CG,UA,E,A,U/T */
02198 }
02199 ,{{{ 280, 100, 180, 255, 165} /* CG,UA,E,C,E */
02200 ,{ 280, 85, 180, 255, 165} /* CG,UA,E,C,A */
02201 ,{ 280, 100, 180, 255, 165} /* CG,UA,E,C,C */
02202 ,{ 280, 85, 180, 255, 165} /* CG,UA,E,C,G */
02203 ,{ 215, 35, 115, 190, 100} /* CG,UA,E,C,U/T */
02204 }
02205 ,{{{ 500, 385, 475, 225, 460} /* CG,UA,E,G,E */
02206 ,{ -555, -795, -585, -955, -595} /* CG,UA,E,G,A */
02207 ,{ 110, -85, 10, 85, -5} /* CG,UA,E,G,C */
02208 ,{ 500, 385, 475, 225, 460} /* CG,UA,E,G,G */
02209 ,{ 110, -85, 10, 85, -5} /* CG,UA,E,G,U/T */
02210 }
02211 ,{{{ -140, -335, -240, -165, -255} /* CG,UA,E,U/T,E */
02212 ,{ -140, -335, -240, -165, -255} /* CG,UA,E,U/T,A */
02213 ,{ -360, -540, -460, -385, -475} /* CG,UA,E,U/T,C */
02214 ,{ -140, -335, -240, -165, -255} /* CG,UA,E,U/T,G */
02215 ,{ -660, -680, -710, -960, -720} /* CG,UA,E,U/T,U/T */
02216 }
02217 }
02218 ,{{{ 570, 480, 570, -45, 530} /* CG,UA,A,E,E */
02219 ,{ 245, 150, 245, -105, 205} /* CG,UA,A,E,A */
02220 ,{ 180, 85, 180, -45, 140} /* CG,UA,A,E,C */
02221 ,{ 570, 480, 570, -165, 530} /* CG,UA,A,E,G */
02222 ,{ 115, 20, 115, -110, 75} /* CG,UA,A,E,U/T */
02223 }
02224 ,{{{ 230, 135, 230, -120, 190} /* CG,UA,A,A,E */
02225 ,{ 230, 135, 230, -120, 190} /* CG,UA,A,A,A */
02226 ,{ 90, -5, 90, -255, 50} /* CG,UA,A,A,C */
02227 ,{ -470, -565, -470, -820, -510} /* CG,UA,A,A,G */
02228 ,{ 90, -5, 90, -255, 50} /* CG,UA,A,A,U/T */
02229 }
02230 ,{{{ 180, 85, 180, -45, 140} /* CG,UA,A,C,E */
02231 ,{ 180, 85, 180, -165, 140} /* CG,UA,A,C,A */
02232 ,{ 180, 85, 180, -45, 140} /* CG,UA,A,C,C */
02233 ,{ 180, 85, 180, -165, 140} /* CG,UA,A,C,G */
02234 ,{ 115, 20, 115, -110, 75} /* CG,UA,A,C,U/T */
02235 }
02236 ,{{{ 475, 385, 475, -335, 435} /* CG,UA,A,G,E */
02237 ,{ -700, -795, -700, -1050, -740} /* CG,UA,A,G,A */
02238 ,{ 10, -85, 10, -335, -30} /* CG,UA,A,G,C */
02239 ,{ 475, 385, 475, -495, 435} /* CG,UA,A,G,G */
02240 ,{ 10, -85, 10, -335, -30} /* CG,UA,A,G,U/T */
02241 }
02242 ,{{{ -240, -335, -240, -585, -280} /* CG,UA,A,U/T,E */
02243 ,{ -240, -335, -240, -585, -280} /* CG,UA,A,U/T,A */
02244 ,{ -460, -550, -460, -685, -500} /* CG,UA,A,U/T,C */
02245 ,{ -240, -335, -240, -585, -280} /* CG,UA,A,U/T,G */
02246 ,{ -660, -680, -710, -1055, -750} /* CG,UA,A,U/T,U/T */
02247 }
02248 }
02249 ,{{{ 595, 325, 565, 320, 555} /* CG,UA,C,E,E */
02250 ,{ 270, -5, 240, -10, 230} /* CG,UA,C,E,A */
02251 ,{ 205, -70, 175, -75, 165} /* CG,UA,C,E,C */
02252 ,{ 595, 325, 565, 320, 555} /* CG,UA,C,E,G */
02253 ,{ 140, -130, 110, -135, 100} /* CG,UA,C,E,U/T */
02254 }
02255 ,{{{ 255, -20, 225, -25, 215} /* CG,UA,C,A,E */
02256 ,{ 255, -20, 225, -25, 215} /* CG,UA,C,A,A */
02257 ,{ 115, -155, 85, -160, 75} /* CG,UA,C,A,C */
02258 ,{ -325, -720, -355, -725, -365} /* CG,UA,C,A,G */
02259 ,{ 115, -155, 85, -160, 75} /* CG,UA,C,A,U/T */
02260 }
02261 ,{{{ 205, -70, 175, -75, 165} /* CG,UA,C,C,E */
02262 ,{ 205, -70, 175, -75, 165} /* CG,UA,C,C,A */
02263 ,{ 205, -70, 175, -75, 165} /* CG,UA,C,C,C */
02264 ,{ 205, -70, 175, -75, 165} /* CG,UA,C,C,G */
02265 ,{ 140, -130, 110, -135, 100} /* CG,UA,C,C,U/T */

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02266     }
02267     ,{{ 500, 230, 470, 225, 460} /* CG,UA,C,G,E */
02268     ,{{ -555, -950, -585, -955, -595} /* CG,UA,C,G,A */
02269     ,{{ 35, -235, 5, -240, -5} /* CG,UA,C,G,C */
02270     ,{{ 500, 230, 470, 225, 460} /* CG,UA,C,G,G */
02271     ,{{ 35, -235, 5, -240, -5} /* CG,UA,C,G,U/T */
02272     }
02273     ,{{ -215, -490, -245, -495, -255} /* CG,UA,C,U/T,E */
02274     ,{{ -215, -490, -245, -495, -255} /* CG,UA,C,U/T,A */
02275     ,{{ -435, -705, -465, -710, -475} /* CG,UA,C,U/T,C */
02276     ,{{ -215, -490, -245, -495, -255} /* CG,UA,C,U/T,G */
02277     ,{{ -680, -955, -710, -960, -720} /* CG,UA,C,U/T,U/T */
02278     }
02279     }
02280     ,{{{ 570, 100, 570, 320, 530} /* CG,UA,G,E,E */
02281     ,{{ 345, 45, 245, 320, 205} /* CG,UA,G,E,A */
02282     ,{{ 280, 100, 180, 255, 140} /* CG,UA,G,E,C */
02283     ,{{ 570, -20, 570, 255, 530} /* CG,UA,G,E,G */
02284     ,{{ 215, 35, 115, 190, 75} /* CG,UA,G,E,U/T */
02285     }
02286     ,{{ 330, 30, 230, 305, 190} /* CG,UA,G,A,E */
02287     ,{{ 330, 30, 230, 305, 190} /* CG,UA,G,A,A */
02288     ,{{ 190, -110, 90, 165, 50} /* CG,UA,G,A,C */
02289     ,{{ -470, -670, -470, -1025, -510} /* CG,UA,G,A,G */
02290     ,{{ 190, -110, 90, 165, 50} /* CG,UA,G,A,U/T */
02291     }
02292     ,{{{ 280, 100, 180, 255, 140} /* CG,UA,G,C,E */
02293     ,{{ 280, -20, 180, 255, 140} /* CG,UA,G,C,A */
02294     ,{{ 280, 100, 180, 255, 140} /* CG,UA,G,C,C */
02295     ,{{ 280, -20, 180, 255, 140} /* CG,UA,G,C,G */
02296     ,{{ 215, 35, 115, 190, 75} /* CG,UA,G,C,U/T */
02297     }
02298     ,{{{ 475, -190, 475, 85, 435} /* CG,UA,G,G,E */
02299     ,{{ -700, -900, -700, -1255, -740} /* CG,UA,G,G,A */
02300     ,{{ 110, -190, 10, 85, -30} /* CG,UA,G,G,C */
02301     ,{{ 475, -350, 475, -700, 435} /* CG,UA,G,G,G */
02302     ,{{ 110, -190, 10, 85, -30} /* CG,UA,G,G,U/T */
02303     }
02304     ,{{{ -140, -440, -240, -165, -280} /* CG,UA,G,U/T,E */
02305     ,{{ -140, -440, -240, -165, -280} /* CG,UA,G,U/T,A */
02306     ,{{ -360, -540, -460, -385, -500} /* CG,UA,G,U/T,C */
02307     ,{{ -140, -440, -240, -165, -280} /* CG,UA,G,U/T,G */
02308     ,{{ -710, -910, -710, -1260, -750} /* CG,UA,G,U/T,U/T */
02309     }
02310     }
02311     ,{{{ 545, 325, 545, 320, -70} /* CG,UA,U/T,E,E */
02312     ,{{ 215, -5, 215, -10, -70} /* CG,UA,U/T,E,A */
02313     ,{{ 150, -70, 150, -75, -255} /* CG,UA,U/T,E,C */
02314     ,{{ 545, 325, 545, 320, -255} /* CG,UA,U/T,E,G */
02315     ,{{ 85, -130, 85, -135, -320} /* CG,UA,U/T,E,U/T */
02316     }
02317     ,{{{ 200, -20, 200, -25, -85} /* CG,UA,U/T,A,E */
02318     ,{{ 200, -20, 200, -25, -85} /* CG,UA,U/T,A,A */
02319     ,{{ 60, -155, 60, -160, -345} /* CG,UA,U/T,A,C */
02320     ,{{ -380, -720, -380, -725, -905} /* CG,UA,U/T,A,G */
02321     ,{{ 60, -155, 60, -160, -345} /* CG,UA,U/T,A,U/T */
02322     }
02323     ,{{{ 150, -70, 150, -75, -255} /* CG,UA,U/T,C,E */
02324     ,{{ 150, -70, 150, -75, -255} /* CG,UA,U/T,C,A */
02325     ,{{ 150, -70, 150, -75, -255} /* CG,UA,U/T,C,C */
02326     ,{{ 150, -70, 150, -75, -255} /* CG,UA,U/T,C,G */
02327     ,{{ 85, -130, 85, -135, -320} /* CG,UA,U/T,C,U/T */
02328     }
02329     ,{{{ 450, 230, 450, 225, -425} /* CG,UA,U/T,G,E */
02330     ,{{ -610, -950, -610, -955, -1135} /* CG,UA,U/T,G,A */
02331     ,{{ -20, -235, -20, -240, -425} /* CG,UA,U/T,G,C */
02332     ,{{ 450, 230, 450, 225, -585} /* CG,UA,U/T,G,G */
02333     ,{{ -20, -235, -20, -240, -425} /* CG,UA,U/T,G,U/T */
02334     }
02335     ,{{{ -270, -490, -270, -495, -675} /* CG,UA,U/T,U/T,E */
02336     ,{{ -270, -490, -270, -495, -675} /* CG,UA,U/T,U/T,A */
02337     ,{{ -490, -705, -490, -710, -895} /* CG,UA,U/T,U/T,C */
02338     ,{{ -270, -490, -270, -495, -675} /* CG,UA,U/T,U/T,G */
02339     ,{{ -735, -955, -735, -960, -1145} /* CG,UA,U/T,U/T,U/T */
02340     }
02341     }
02342     }
02343     ,{{{ 725, 610, 700, 450, 685} /* CG,NN,E,E,E */
02344     ,{{ 475, 280, 375, 450, 360} /* CG,NN,E,E,A */
02345     ,{{ 410, 230, 310, 385, 295} /* CG,NN,E,E,C */
02346     ,{{ 725, 610, 700, 450, 685} /* CG,NN,E,E,G */
02347     ,{{ 345, 165, 245, 320, 230} /* CG,NN,E,E,U/T */
02348     }
02349     ,{{{ 415, 220, 315, 390, 300} /* CG,NN,E,A,E */
02350     ,{{ 415, 220, 315, 390, 300} /* CG,NN,E,A,A */
02351     ,{{ 275, 80, 175, 250, 160} /* CG,NN,E,A,C */
02352     ,{{ -125, -365, -155, -525, -165} /* CG,NN,E,A,G */

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02353 , { 275, 80, 175, 250, 160} /* CG,NN,E,A,U/T */
02354 }
02355 , { { 410, 230, 310, 385, 295} /* CG,NN,E,C,E */
02356 , { 410, 215, 310, 385, 295} /* CG,NN,E,C,A */
02357 , { 410, 230, 310, 385, 295} /* CG,NN,E,C,C */
02358 , { 410, 215, 310, 385, 295} /* CG,NN,E,C,G */
02359 , { 345, 165, 245, 320, 230} /* CG,NN,E,C,U/T */
02360 }
02361 , { { 700, 585, 675, 425, 660} /* CG,NN,E,G,E */
02362 , { -140, -380, -170, -540, -180} /* CG,NN,E,G,A */
02363 , { 310, 115, 210, 285, 195} /* CG,NN,E,G,C */
02364 , { 700, 585, 675, 425, 660} /* CG,NN,E,G,G */
02365 , { 310, 115, 210, 285, 195} /* CG,NN,E,G,U/T */
02366 }
02367 , { { 365, 170, 265, 340, 250} /* CG,NN,E,U/T,E */
02368 , { 365, 170, 265, 340, 250} /* CG,NN,E,U/T,A */
02369 , { 245, 70, 145, 220, 135} /* CG,NN,E,U/T,C */
02370 , { 365, 170, 265, 340, 250} /* CG,NN,E,U/T,G */
02371 , { -40, -175, -40, -425, -215} /* CG,NN,E,U/T,U/T */
02372 }
02373 }
02374 , { { { 700, 610, 700, 295, 660} /* CG,NN,A,E,E */
02375 , { 375, 280, 375, 30, 335} /* CG,NN,A,E,A */
02376 , { 320, 215, 310, 295, 270} /* CG,NN,A,E,C */
02377 , { 700, 610, 700, -35, 660} /* CG,NN,A,E,G */
02378 , { 245, 150, 245, 20, 205} /* CG,NN,A,E,U/T */
02379 }
02380 , { { 315, 220, 315, -35, 275} /* CG,NN,A,A,E */
02381 , { 315, 220, 315, -35, 275} /* CG,NN,A,A,A */
02382 , { 175, 80, 175, -85, 135} /* CG,NN,A,A,C */
02383 , { -275, -365, -275, -620, -315} /* CG,NN,A,A,G */
02384 , { 175, 80, 175, -170, 135} /* CG,NN,A,A,U/T */
02385 }
02386 , { { 320, 215, 310, 295, 270} /* CG,NN,A,C,E */
02387 , { 310, 215, 310, 30, 270} /* CG,NN,A,C,A */
02388 , { 320, 215, 310, 295, 270} /* CG,NN,A,C,C */
02389 , { 310, 215, 310, -35, 270} /* CG,NN,A,C,G */
02390 , { 245, 150, 245, 20, 205} /* CG,NN,A,C,U/T */
02391 }
02392 , { { 675, 585, 675, -135, 635} /* CG,NN,A,G,E */
02393 , { -285, -380, -285, -635, -325} /* CG,NN,A,G,A */
02394 , { 210, 115, 210, -135, 170} /* CG,NN,A,G,C */
02395 , { 675, 585, 675, -295, 635} /* CG,NN,A,G,G */
02396 , { 210, 115, 210, -135, 170} /* CG,NN,A,G,U/T */
02397 }
02398 , { { 265, 170, 265, -80, 225} /* CG,NN,A,U/T,E */
02399 , { 265, 170, 265, -80, 225} /* CG,NN,A,U/T,A */
02400 , { 145, 55, 145, -80, 105} /* CG,NN,A,U/T,C */
02401 , { 265, 170, 265, -80, 225} /* CG,NN,A,U/T,G */
02402 , { -40, -175, -40, -425, -245} /* CG,NN,A,U/T,U/T */
02403 }
02404 }
02405 , { { { 725, 455, 695, 450, 685} /* CG,NN,C,E,E */
02406 , { 400, 125, 370, 120, 360} /* CG,NN,C,E,A */
02407 , { 335, 60, 305, 55, 295} /* CG,NN,C,E,C */
02408 , { 725, 455, 695, 450, 685} /* CG,NN,C,E,G */
02409 , { 270, 0, 240, -5, 230} /* CG,NN,C,E,U/T */
02410 }
02411 , { { 340, 65, 310, 60, 300} /* CG,NN,C,A,E */
02412 , { 340, 65, 310, 60, 300} /* CG,NN,C,A,A */
02413 , { 200, -70, 170, -75, 160} /* CG,NN,C,A,C */
02414 , { -125, -520, -155, -525, -165} /* CG,NN,C,A,G */
02415 , { 200, -70, 170, -75, 160} /* CG,NN,C,A,U/T */
02416 }
02417 , { { 335, 60, 305, 55, 295} /* CG,NN,C,C,E */
02418 , { 335, 60, 305, 55, 295} /* CG,NN,C,C,A */
02419 , { 335, 60, 305, 55, 295} /* CG,NN,C,C,C */
02420 , { 335, 60, 305, 55, 295} /* CG,NN,C,C,G */
02421 , { 270, 0, 240, -5, 230} /* CG,NN,C,C,U/T */
02422 }
02423 , { { 700, 430, 670, 425, 660} /* CG,NN,C,G,E */
02424 , { -140, -530, -170, -540, -180} /* CG,NN,C,G,A */
02425 , { 235, -35, 205, -40, 195} /* CG,NN,C,G,C */
02426 , { 700, 430, 670, 425, 660} /* CG,NN,C,G,G */
02427 , { 235, -35, 205, -40, 195} /* CG,NN,C,G,U/T */
02428 }
02429 , { { 290, 15, 260, 10, 250} /* CG,NN,C,U/T,E */
02430 , { 290, 15, 260, 10, 250} /* CG,NN,C,U/T,A */
02431 , { 175, -100, 145, -105, 135} /* CG,NN,C,U/T,C */
02432 , { 290, 15, 260, 10, 250} /* CG,NN,C,U/T,G */
02433 , { -175, -430, -205, -455, -215} /* CG,NN,C,U/T,U/T */
02434 }
02435 }
02436 , { { { 700, 230, 700, 450, 660} /* CG,NN,G,E,E */
02437 , { 475, 175, 375, 450, 335} /* CG,NN,G,E,A */
02438 , { 410, 230, 310, 385, 270} /* CG,NN,G,E,C */
02439 , { 700, 110, 700, 385, 660} /* CG,NN,G,E,G */

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02440 , { 345, 165, 245, 320, 205} /* CG,NN,G,E,U/T */
02441 }
02442 , { { 415, 115, 315, 390, 275} /* CG,NN,G,A,E */
02443 , { 415, 115, 315, 390, 275} /* CG,NN,G,A,A */
02444 , { 275, -25, 175, 250, 135} /* CG,NN,G,A,C */
02445 , { -275, -475, -275, -825, -315} /* CG,NN,G,A,G */
02446 , { 275, -25, 175, 250, 135} /* CG,NN,G,A,U/T */
02447 }
02448 , { { 410, 230, 310, 385, 270} /* CG,NN,G,C,E */
02449 , { 410, 110, 310, 385, 270} /* CG,NN,G,C,A */
02450 , { 410, 230, 310, 385, 270} /* CG,NN,G,C,C */
02451 , { 410, 110, 310, 385, 270} /* CG,NN,G,C,G */
02452 , { 345, 165, 245, 320, 205} /* CG,NN,G,C,U/T */
02453 }
02454 , { { 675, 10, 675, 285, 635} /* CG,NN,G,G,E */
02455 , { -285, -485, -285, -540, -325} /* CG,NN,G,G,A */
02456 , { 310, 10, 210, 285, 170} /* CG,NN,G,G,C */
02457 , { 675, -150, 675, -500, 635} /* CG,NN,G,G,G */
02458 , { 310, 10, 210, 285, 170} /* CG,NN,G,G,U/T */
02459 }
02460 , { { 365, 70, 265, 340, 225} /* CG,NN,G,U/T,E */
02461 , { 365, 65, 265, 340, 225} /* CG,NN,G,U/T,A */
02462 , { 245, 70, 145, 220, 105} /* CG,NN,G,U/T,C */
02463 , { 365, 65, 265, 340, 225} /* CG,NN,G,U/T,G */
02464 , { -205, -405, -205, -755, -245} /* CG,NN,G,U/T,U/T */
02465 }
02466 }
02467 , { { { 675, 455, 675, 450, 60} /* CG,NN,U/T,E,E */
02468 , { 345, 125, 345, 120, 60} /* CG,NN,U/T,E,A */
02469 , { 280, 60, 280, 55, -125} /* CG,NN,U/T,E,C */
02470 , { 675, 455, 675, 450, -105} /* CG,NN,U/T,E,G */
02471 , { 215, 0, 215, -5, -190} /* CG,NN,U/T,E,U/T */
02472 }
02473 , { { 285, 65, 285, 60, 0} /* CG,NN,U/T,A,E */
02474 , { 285, 65, 285, 60, 0} /* CG,NN,U/T,A,A */
02475 , { 145, -70, 145, -75, -260} /* CG,NN,U/T,A,C */
02476 , { -180, -520, -180, -525, -710} /* CG,NN,U/T,A,G */
02477 , { 145, -70, 145, -75, -260} /* CG,NN,U/T,A,U/T */
02478 }
02479 , { { 280, 60, 280, 55, -125} /* CG,NN,U/T,C,E */
02480 , { 280, 60, 280, 55, -125} /* CG,NN,U/T,C,A */
02481 , { 280, 60, 280, 55, -125} /* CG,NN,U/T,C,C */
02482 , { 280, 60, 280, 55, -125} /* CG,NN,U/T,C,G */
02483 , { 215, 0, 215, -5, -190} /* CG,NN,U/T,C,U/T */
02484 }
02485 , { { 650, 430, 650, 425, -130} /* CG,NN,U/T,G,E */
02486 , { -195, -535, -195, -540, -665} /* CG,NN,U/T,G,A */
02487 , { 180, -35, 180, -40, -225} /* CG,NN,U/T,G,C */
02488 , { 650, 430, 650, 425, -130} /* CG,NN,U/T,G,G */
02489 , { 180, -35, 180, -40, -225} /* CG,NN,U/T,G,U/T */
02490 }
02491 , { { 235, 15, 235, 10, -170} /* CG,NN,U/T,U/T,E */
02492 , { 235, 15, 235, 10, -170} /* CG,NN,U/T,U/T,A */
02493 , { 120, -100, 120, -105, -285} /* CG,NN,U/T,U/T,C */
02494 , { 235, 15, 235, 10, -170} /* CG,NN,U/T,U/T,G */
02495 , { -230, -450, -230, -455, -640} /* CG,NN,U/T,U/T,U/T */
02496 }
02497 }
02498 }
02499 }
02500 , { { { INF, INF, INF, INF, INF} /* GC,NP,E,E,E */
02501 , { INF, INF, INF, INF, INF} /* GC,NP,E,E,A */
02502 , { INF, INF, INF, INF, INF} /* GC,NP,E,E,C */
02503 , { INF, INF, INF, INF, INF} /* GC,NP,E,E,G */
02504 , { INF, INF, INF, INF, INF} /* GC,NP,E,E,U/T */
02505 }
02506 , { { INF, INF, INF, INF, INF} /* GC,NP,E,A,E */
02507 , { INF, INF, INF, INF, INF} /* GC,NP,E,A,A */
02508 , { INF, INF, INF, INF, INF} /* GC,NP,E,A,C */
02509 , { INF, INF, INF, INF, INF} /* GC,NP,E,A,G */
02510 , { INF, INF, INF, INF, INF} /* GC,NP,E,A,U/T */
02511 }
02512 , { { INF, INF, INF, INF, INF} /* GC,NP,E,C,E */
02513 , { INF, INF, INF, INF, INF} /* GC,NP,E,C,A */
02514 , { INF, INF, INF, INF, INF} /* GC,NP,E,C,C */
02515 , { INF, INF, INF, INF, INF} /* GC,NP,E,C,G */
02516 , { INF, INF, INF, INF, INF} /* GC,NP,E,C,U/T */
02517 }
02518 , { { INF, INF, INF, INF, INF} /* GC,NP,E,G,E */
02519 , { INF, INF, INF, INF, INF} /* GC,NP,E,G,A */
02520 , { INF, INF, INF, INF, INF} /* GC,NP,E,G,C */
02521 , { INF, INF, INF, INF, INF} /* GC,NP,E,G,G */
02522 , { INF, INF, INF, INF, INF} /* GC,NP,E,G,U/T */
02523 }
02524 , { { INF, INF, INF, INF, INF} /* GC,NP,E,U/T,E */
02525 , { INF, INF, INF, INF, INF} /* GC,NP,E,U/T,A */
02526 , { INF, INF, INF, INF, INF} /* GC,NP,E,U/T,C */
```

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02527 , { INF, INF, INF, INF, INF} /* GC, NP, E, U/T, G */
02528 , { INF, INF, INF, INF, INF} /* GC, NP, E, U/T, U/T */
02529 }
02530 }
02531 , { { INF, INF, INF, INF, INF} /* GC, NP, A, E, E */
02532 , { INF, INF, INF, INF, INF} /* GC, NP, A, E, A */
02533 , { INF, INF, INF, INF, INF} /* GC, NP, A, E, C */
02534 , { INF, INF, INF, INF, INF} /* GC, NP, A, E, G */
02535 , { INF, INF, INF, INF, INF} /* GC, NP, A, E, U/T */
02536 }
02537 , { { INF, INF, INF, INF, INF} /* GC, NP, A, A, E */
02538 , { INF, INF, INF, INF, INF} /* GC, NP, A, A, A */
02539 , { INF, INF, INF, INF, INF} /* GC, NP, A, A, C */
02540 , { INF, INF, INF, INF, INF} /* GC, NP, A, A, G */
02541 , { INF, INF, INF, INF, INF} /* GC, NP, A, A, U/T */
02542 }
02543 , { { INF, INF, INF, INF, INF} /* GC, NP, A, C, E */
02544 , { INF, INF, INF, INF, INF} /* GC, NP, A, C, A */
02545 , { INF, INF, INF, INF, INF} /* GC, NP, A, C, C */
02546 , { INF, INF, INF, INF, INF} /* GC, NP, A, C, G */
02547 , { INF, INF, INF, INF, INF} /* GC, NP, A, C, U/T */
02548 }
02549 , { { INF, INF, INF, INF, INF} /* GC, NP, A, G, E */
02550 , { INF, INF, INF, INF, INF} /* GC, NP, A, G, A */
02551 , { INF, INF, INF, INF, INF} /* GC, NP, A, G, C */
02552 , { INF, INF, INF, INF, INF} /* GC, NP, A, G, G */
02553 , { INF, INF, INF, INF, INF} /* GC, NP, A, G, U/T */
02554 }
02555 , { { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, E */
02556 , { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, A */
02557 , { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, C */
02558 , { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, G */
02559 , { INF, INF, INF, INF, INF} /* GC, NP, A, U/T, U/T */
02560 }
02561 }
02562 , { { { INF, INF, INF, INF, INF} /* GC, NP, C, E, E */
02563 , { INF, INF, INF, INF, INF} /* GC, NP, C, E, A */
02564 , { INF, INF, INF, INF, INF} /* GC, NP, C, E, C */
02565 , { INF, INF, INF, INF, INF} /* GC, NP, C, E, G */
02566 , { INF, INF, INF, INF, INF} /* GC, NP, C, E, U/T */
02567 }
02568 , { { INF, INF, INF, INF, INF} /* GC, NP, C, A, E */
02569 , { INF, INF, INF, INF, INF} /* GC, NP, C, A, A */
02570 , { INF, INF, INF, INF, INF} /* GC, NP, C, A, C */
02571 , { INF, INF, INF, INF, INF} /* GC, NP, C, A, G */
02572 , { INF, INF, INF, INF, INF} /* GC, NP, C, A, U/T */
02573 }
02574 , { { INF, INF, INF, INF, INF} /* GC, NP, C, C, E */
02575 , { INF, INF, INF, INF, INF} /* GC, NP, C, C, A */
02576 , { INF, INF, INF, INF, INF} /* GC, NP, C, C, C */
02577 , { INF, INF, INF, INF, INF} /* GC, NP, C, C, G */
02578 , { INF, INF, INF, INF, INF} /* GC, NP, C, C, U/T */
02579 }
02580 , { { INF, INF, INF, INF, INF} /* GC, NP, C, G, E */
02581 , { INF, INF, INF, INF, INF} /* GC, NP, C, G, A */
02582 , { INF, INF, INF, INF, INF} /* GC, NP, C, G, C */
02583 , { INF, INF, INF, INF, INF} /* GC, NP, C, G, G */
02584 , { INF, INF, INF, INF, INF} /* GC, NP, C, G, U/T */
02585 }
02586 , { { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, E */
02587 , { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, A */
02588 , { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, C */
02589 , { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, G */
02590 , { INF, INF, INF, INF, INF} /* GC, NP, C, U/T, U/T */
02591 }
02592 }
02593 , { { { INF, INF, INF, INF, INF} /* GC, NP, G, E, E */
02594 , { INF, INF, INF, INF, INF} /* GC, NP, G, E, A */
02595 , { INF, INF, INF, INF, INF} /* GC, NP, G, E, C */
02596 , { INF, INF, INF, INF, INF} /* GC, NP, G, E, G */
02597 , { INF, INF, INF, INF, INF} /* GC, NP, G, E, U/T */
02598 }
02599 , { { INF, INF, INF, INF, INF} /* GC, NP, G, A, E */
02600 , { INF, INF, INF, INF, INF} /* GC, NP, G, A, A */
02601 , { INF, INF, INF, INF, INF} /* GC, NP, G, A, C */
02602 , { INF, INF, INF, INF, INF} /* GC, NP, G, A, G */
02603 , { INF, INF, INF, INF, INF} /* GC, NP, G, A, U/T */
02604 }
02605 , { { INF, INF, INF, INF, INF} /* GC, NP, G, C, E */
02606 , { INF, INF, INF, INF, INF} /* GC, NP, G, C, A */
02607 , { INF, INF, INF, INF, INF} /* GC, NP, G, C, C */
02608 , { INF, INF, INF, INF, INF} /* GC, NP, G, C, G */
02609 , { INF, INF, INF, INF, INF} /* GC, NP, G, C, U/T */
02610 }
02611 , { { INF, INF, INF, INF, INF} /* GC, NP, G, G, E */
02612 , { INF, INF, INF, INF, INF} /* GC, NP, G, G, A */
02613 , { INF, INF, INF, INF, INF} /* GC, NP, G, G, C */

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02614      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,G,G */
02615      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,G,U/T */
02616      }
02617      , {{      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U/T,E */
02618      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U/T,A */
02619      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U/T,C */
02620      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U/T,G */
02621      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,G,U/T,U/T */
02622      }
02623      }
02624      , {{{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,E,E */
02625      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,E,A */
02626      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,E,C */
02627      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,E,G */
02628      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,E,U/T */
02629      }
02630      , {{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,A,E */
02631      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,A,A */
02632      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,A,C */
02633      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,A,G */
02634      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,A,U/T */
02635      }
02636      , {{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,C,E */
02637      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,C,A */
02638      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,C,C */
02639      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,C,G */
02640      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,C,U/T */
02641      }
02642      , {{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,G,E */
02643      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,G,A */
02644      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,G,C */
02645      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,G,G */
02646      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,G,U/T */
02647      }
02648      , {{      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,U/T,E */
02649      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,U/T,A */
02650      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,U/T,C */
02651      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,U/T,G */
02652      , {      INF,      INF,      INF,      INF,      INF} /* GC,NP,U/T,U/T,U/T */
02653      }
02654      }
02655      }
02656      , {{{      15,      -565,      -105,      -375,      -300} /* GC,CG,E,E,E */
02657      , {      15,      -570,      -105,      -375,      -300} /* GC,CG,E,E,A */
02658      , {     -165,      -565,      -605,      -375,      -485} /* GC,CG,E,E,C */
02659      , {     -240,      -595,      -505,      -450,      -360} /* GC,CG,E,E,G */
02660      , {     -355,      -620,      -575,      -580,      -540} /* GC,CG,E,E,U/T */
02661      }
02662      , {{      -185,      -715,      -725,      -395,      -605} /* GC,CG,E,A,E */
02663      , {      -185,      -830,      -725,      -395,      -605} /* GC,CG,E,A,A */
02664      , {      -490,      -840,      -880,      -700,      -690} /* GC,CG,E,A,C */
02665      , {      -450,      -715,      -830,      -965,      -710} /* GC,CG,E,A,G */
02666      , {      -490,      -840,      -880,      -700,      -760} /* GC,CG,E,A,U/T */
02667      }
02668      , {{      -240,      -595,      -630,      -450,      -300} /* GC,CG,E,C,E */
02669      , {      -300,      -630,      -630,      -660,      -300} /* GC,CG,E,C,A */
02670      , {      -245,      -820,      -635,      -455,      -515} /* GC,CG,E,C,C */
02671      , {      -240,      -595,      -630,      -450,      -510} /* GC,CG,E,C,G */
02672      , {     -355,      -620,      -660,      -790,      -540} /* GC,CG,E,C,U/T */
02673      }
02674      , {{      -10,      -595,      -130,      -690,      -385} /* GC,CG,E,G,E */
02675      , {      -10,      -595,      -130,      -1110,      -685} /* GC,CG,E,G,A */
02676      , {     -495,      -845,      -885,      -705,      -765} /* GC,CG,E,G,C */
02677      , {     -380,      -645,      -530,      -690,      -385} /* GC,CG,E,G,G */
02678      , {     -495,      -845,      -885,      -705,      -765} /* GC,CG,E,G,U/T */
02679      }
02680      , {{      -205,      -605,      -615,      -415,      -525} /* GC,CG,E,U/T,E */
02681      , {      -280,      -635,      -670,      -490,      -550} /* GC,CG,E,U/T,A */
02682      , {      -205,      -605,      -645,      -415,      -525} /* GC,CG,E,U/T,C */
02683      , {      -280,      -635,      -670,      -490,      -550} /* GC,CG,E,U/T,G */
02684      , {     -410,     -1255,      -615,      -620,      -945} /* GC,CG,E,U/T,U/T */
02685      }
02686      }
02687      , {{{      -250,      -565,      -370,      -715,      -415} /* GC,CG,A,E,E */
02688      , {      -250,      -595,      -370,      -895,      -510} /* GC,CG,A,E,A */
02689      , {     -300,      -565,      -605,      -715,      -485} /* GC,CG,A,E,C */
02690      , {     -330,      -595,      -535,      -895,      -415} /* GC,CG,A,E,G */
02691      , {     -355,      -620,      -575,     -1115,      -540} /* GC,CG,A,E,U/T */
02692      }
02693      , {{      -565,      -830,      -725,     -1020,      -605} /* GC,CG,A,A,E */
02694      , {      -565,      -830,      -725,     -1155,      -605} /* GC,CG,A,A,A */
02695      , {      -575,      -840,      -880,     -1020,      -760} /* GC,CG,A,A,C */
02696      , {      -710,     -1340,      -950,     -1425,      -710} /* GC,CG,A,A,G */
02697      , {      -575,      -840,      -880,     -1145,      -760} /* GC,CG,A,A,U/T */
02698      }
02699      , {{      -330,      -595,      -630,      -715,      -510} /* GC,CG,A,C,E */
02700      , {      -365,      -630,      -950,      -895,      -510} /* GC,CG,A,C,A */

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02701      , { -505, -1055, -750, -715, -515} /* GC,CG,A,C,C */
02702      , { -330, -595, -630, -895, -510} /* GC,CG,A,C,G */
02703      , { -355, -620, -660, -1340, -540} /* GC,CG,A,C,U/T */
02704      }
02705      , {{ -275, -645, -395, -1030, -440} /* GC,CG,A,G,E */
02706      , { -275, -1030, -395, -1715, -860} /* GC,CG,A,G,A */
02707      , { -580, -845, -885, -1150, -765} /* GC,CG,A,G,C */
02708      , { -380, -645, -560, -1030, -440} /* GC,CG,A,G,G */
02709      , { -580, -845, -885, -1150, -765} /* GC,CG,A,G,U/T */
02710      }
02711      , {{ -340, -605, -615, -790, -525} /* GC,CG,A,U/T,E */
02712      , { -370, -635, -670, -935, -550} /* GC,CG,A,U/T,A */
02713      , { -340, -605, -645, -790, -525} /* GC,CG,A,U/T,C */
02714      , { -370, -635, -670, -935, -550} /* GC,CG,A,U/T,G */
02715      , { -495, -1305, -615, -1155, -945} /* GC,CG,A,U/T,U/T */
02716      }
02717      }
02718      , {{{ 15, -570, -105, -665, -360} /* GC,CG,C,E,E */
02719      , { 15, -570, -105, -765, -820} /* GC,CG,C,E,A */
02720      , { -525, -790, -755, -735, -790} /* GC,CG,C,E,C */
02721      , { -360, -695, -685, -665, -360} /* GC,CG,C,E,G */
02722      , { -580, -845, -810, -790, -845} /* GC,CG,C,E,U/T */
02723      }
02724      , {{{ -450, -715, -865, -855, -900} /* GC,CG,C,A,E */
02725      , { -645, -910, -875, -855, -910} /* GC,CG,C,A,A */
02726      , { -800, -1065, -1030, -1010, -1065} /* GC,CG,C,A,C */
02727      , { -450, -715, -865, -965, -900} /* GC,CG,C,A,G */
02728      , { -800, -1065, -1030, -1010, -1065} /* GC,CG,C,A,U/T */
02729      }
02730      , {{{ -555, -820, -785, -765, -820} /* GC,CG,C,C,E */
02731      , { -555, -820, -785, -765, -820} /* GC,CG,C,C,A */
02732      , { -555, -820, -785, -765, -820} /* GC,CG,C,C,C */
02733      , { -555, -820, -785, -765, -820} /* GC,CG,C,C,G */
02734      , { -580, -845, -810, -790, -845} /* GC,CG,C,C,U/T */
02735      }
02736      , {{{ -10, -595, -130, -690, -385} /* GC,CG,C,G,E */
02737      , { -10, -595, -130, -1110, -1045} /* GC,CG,C,G,A */
02738      , { -805, -1070, -1035, -1015, -1070} /* GC,CG,C,G,C */
02739      , { -385, -765, -710, -690, -385} /* GC,CG,C,G,G */
02740      , { -805, -1070, -1035, -1015, -1070} /* GC,CG,C,G,U/T */
02741      }
02742      , {{{ -565, -830, -795, -775, -830} /* GC,CG,C,U/T,E */
02743      , { -595, -860, -825, -805, -860} /* GC,CG,C,U/T,A */
02744      , { -565, -830, -795, -775, -830} /* GC,CG,C,U/T,C */
02745      , { -595, -860, -825, -805, -860} /* GC,CG,C,U/T,G */
02746      , { -990, -1255, -1220, -1200, -1255} /* GC,CG,C,U/T,U/T */
02747      }
02748      }
02749      , {{{ -165, -835, -535, -375, -415} /* GC,CG,G,E,E */
02750      , { -165, -1190, -630, -375, -510} /* GC,CG,G,E,A */
02751      , { -165, -835, -605, -375, -485} /* GC,CG,G,E,C */
02752      , { -240, -1190, -535, -450, -415} /* GC,CG,G,E,G */
02753      , { -370, -1095, -660, -580, -540} /* GC,CG,G,E,U/T */
02754      }
02755      , {{{ -185, -1435, -725, -395, -605} /* GC,CG,G,A,E */
02756      , { -185, -1545, -725, -395, -605} /* GC,CG,G,A,A */
02757      , { -490, -1435, -880, -700, -760} /* GC,CG,G,A,C */
02758      , { -710, -2075, -830, -1170, -710} /* GC,CG,G,A,G */
02759      , { -490, -1435, -880, -700, -760} /* GC,CG,G,A,U/T */
02760      }
02761      , {{{ -240, -835, -630, -450, -510} /* GC,CG,G,C,E */
02762      , { -450, -1345, -630, -660, -510} /* GC,CG,G,C,A */
02763      , { -245, -835, -635, -455, -515} /* GC,CG,G,C,C */
02764      , { -240, -1190, -630, -450, -510} /* GC,CG,G,C,G */
02765      , { -540, -1095, -660, -905, -540} /* GC,CG,G,C,U/T */
02766      }
02767      , {{{ -440, -1440, -560, -705, -440} /* GC,CG,G,G,E */
02768      , { -860, -1535, -980, -1425, -860} /* GC,CG,G,G,A */
02769      , { -495, -1440, -885, -705, -765} /* GC,CG,G,G,C */
02770      , { -440, -1740, -560, -1630, -440} /* GC,CG,G,G,G */
02771      , { -495, -1440, -885, -705, -765} /* GC,CG,G,G,U/T */
02772      }
02773      , {{{ -205, -1080, -645, -415, -525} /* GC,CG,G,U/T,E */
02774      , { -280, -1230, -670, -490, -550} /* GC,CG,G,U/T,A */
02775      , { -205, -1080, -645, -415, -525} /* GC,CG,G,U/T,C */
02776      , { -280, -1230, -670, -490, -550} /* GC,CG,G,U/T,G */
02777      , { -410, -1320, -1065, -620, -945} /* GC,CG,G,U/T,U/T */
02778      }
02779      }
02780      , {{{ -300, -720, -505, -665, -300} /* GC,CG,U/T,E,E */
02781      , { -300, -820, -785, -765, -300} /* GC,CG,U/T,E,A */
02782      , { -525, -790, -650, -735, -670} /* GC,CG,U/T,E,C */
02783      , { -385, -720, -505, -665, -655} /* GC,CG,U/T,E,G */
02784      , { -580, -845, -810, -790, -685} /* GC,CG,U/T,E,U/T */
02785      }
02786      , {{{ -645, -910, -865, -855, -690} /* GC,CG,U/T,A,E */
02787      , { -645, -910, -875, -855, -895} /* GC,CG,U/T,A,A */

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02788 , { -690, -1065, -1030, -1010, -690} /* GC,CG,U/T,A,C */
02789 , { -745, -1020, -865, -965, -955} /* GC,CG,U/T,A,G */
02790 , { -800, -1065, -1030, -1010, -905} /* GC,CG,U/T,A,U/T */
02791 }
02792 , { { -300, -820, -785, -765, -300} /* GC,CG,U/T,C,E */
02793 , { -300, -820, -785, -765, -300} /* GC,CG,U/T,C,A */
02794 , { -555, -820, -785, -765, -1110} /* GC,CG,U/T,C,C */
02795 , { -555, -820, -785, -765, -655} /* GC,CG,U/T,C,G */
02796 , { -580, -845, -810, -790, -685} /* GC,CG,U/T,C,U/T */
02797 }
02798 , { { -410, -745, -530, -690, -685} /* GC,CG,U/T,G,E */
02799 , { -685, -1165, -1010, -1110, -685} /* GC,CG,U/T,G,A */
02800 , { -805, -1070, -1035, -1015, -910} /* GC,CG,U/T,G,C */
02801 , { -410, -745, -530, -690, -1055} /* GC,CG,U/T,G,G */
02802 , { -805, -1070, -1035, -1015, -910} /* GC,CG,U/T,G,U/T */
02803 }
02804 , { { -565, -830, -690, -775, -695} /* GC,CG,U/T,U/T,E */
02805 , { -595, -860, -825, -805, -695} /* GC,CG,U/T,U/T,A */
02806 , { -565, -830, -690, -775, -1025} /* GC,CG,U/T,U/T,C */
02807 , { -595, -860, -825, -805, -695} /* GC,CG,U/T,U/T,G */
02808 , { -990, -1255, -1220, -1200, -1470} /* GC,CG,U/T,U/T,U/T */
02809 }
02810 }
02811 }
02812 , { { { -65, -330, -370, -275, -250} /* GC,GC,E,E,E */
02813 , { -65, -420, -455, -275, -335} /* GC,GC,E,E,A */
02814 , { -290, -645, -680, -500, -560} /* GC,GC,E,E,C */
02815 , { -65, -330, -370, -460, -250} /* GC,GC,E,E,G */
02816 , { -290, -625, -680, -500, -560} /* GC,GC,E,E,U/T */
02817 }
02818 , { { -330, -685, -720, -540, -600} /* GC,GC,E,A,E */
02819 , { -330, -685, -720, -540, -600} /* GC,GC,E,A,A */
02820 , { -555, -910, -945, -765, -825} /* GC,GC,E,A,C */
02821 , { -1015, -1280, -1315, -1450, -1195} /* GC,GC,E,A,G */
02822 , { -555, -910, -945, -765, -825} /* GC,GC,E,A,U/T */
02823 }
02824 , { { -370, -720, -760, -580, -640} /* GC,GC,E,C,E */
02825 , { -370, -720, -760, -580, -640} /* GC,GC,E,C,A */
02826 , { -520, -875, -910, -730, -790} /* GC,GC,E,C,C */
02827 , { -370, -720, -760, -580, -640} /* GC,GC,E,C,G */
02828 , { -520, -875, -910, -730, -790} /* GC,GC,E,C,U/T */
02829 }
02830 , { { -275, -540, -580, -710, -460} /* GC,GC,E,G,E */
02831 , { -720, -985, -1025, -1155, -905} /* GC,GC,E,G,A */
02832 , { -500, -855, -890, -710, -770} /* GC,GC,E,G,C */
02833 , { -275, -540, -580, -710, -460} /* GC,GC,E,G,G */
02834 , { -500, -855, -890, -710, -770} /* GC,GC,E,G,U/T */
02835 }
02836 , { { -250, -600, -640, -460, -520} /* GC,GC,E,U/T,E */
02837 , { -250, -600, -640, -460, -520} /* GC,GC,E,U/T,A */
02838 , { -555, -910, -945, -765, -825} /* GC,GC,E,U/T,C */
02839 , { -250, -600, -640, -460, -520} /* GC,GC,E,U/T,G */
02840 , { -360, -625, -785, -915, -665} /* GC,GC,E,U/T,U/T */
02841 }
02842 }
02843 , { { { -65, -330, -370, -720, -250} /* GC,GC,A,E,E */
02844 , { -155, -420, -455, -720, -335} /* GC,GC,A,E,A */
02845 , { -380, -645, -680, -935, -560} /* GC,GC,A,E,C */
02846 , { -65, -330, -370, -905, -250} /* GC,GC,A,E,G */
02847 , { -360, -625, -680, -935, -560} /* GC,GC,A,E,U/T */
02848 }
02849 , { { -420, -685, -720, -985, -600} /* GC,GC,A,A,E */
02850 , { -420, -685, -720, -985, -600} /* GC,GC,A,A,A */
02851 , { -645, -910, -945, -1210, -825} /* GC,GC,A,A,C */
02852 , { -1015, -1280, -1315, -1580, -1195} /* GC,GC,A,A,G */
02853 , { -645, -910, -945, -1210, -825} /* GC,GC,A,A,U/T */
02854 }
02855 , { { -455, -720, -760, -1025, -640} /* GC,GC,A,C,E */
02856 , { -455, -720, -760, -1025, -640} /* GC,GC,A,C,A */
02857 , { -610, -875, -910, -1055, -790} /* GC,GC,A,C,C */
02858 , { -455, -720, -760, -1025, -640} /* GC,GC,A,C,G */
02859 , { -610, -875, -910, -1055, -790} /* GC,GC,A,C,U/T */
02860 }
02861 , { { -275, -540, -580, -1155, -460} /* GC,GC,A,G,E */
02862 , { -720, -985, -1025, -1290, -905} /* GC,GC,A,G,A */
02863 , { -590, -855, -890, -1155, -770} /* GC,GC,A,G,C */
02864 , { -275, -540, -580, -1470, -460} /* GC,GC,A,G,G */
02865 , { -590, -855, -890, -1155, -770} /* GC,GC,A,G,U/T */
02866 }
02867 , { { -335, -600, -640, -905, -520} /* GC,GC,A,U/T,E */
02868 , { -335, -600, -640, -905, -520} /* GC,GC,A,U/T,A */
02869 , { -645, -910, -945, -1090, -825} /* GC,GC,A,U/T,C */
02870 , { -335, -600, -640, -905, -520} /* GC,GC,A,U/T,G */
02871 , { -360, -625, -785, -1050, -665} /* GC,GC,A,U/T,U/T */
02872 }
02873 }
02874 , { { { -290, -555, -520, -500, -555} /* GC,GC,C,E,E */
```

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02875 , { -380, -645, -610, -590, -645} /* GC,GC,C,E,A */
02876 , { -605, -870, -835, -815, -870} /* GC,GC,C,E,C */
02877 , { -290, -555, -520, -500, -555} /* GC,GC,C,E,G */
02878 , { -605, -870, -835, -815, -870} /* GC,GC,C,E,U/T */
02879 }
02880 , { { -645, -910, -875, -855, -910} /* GC,GC,C,A,E */
02881 , { -645, -910, -875, -855, -910} /* GC,GC,C,A,A */
02882 , { -870, -1135, -1100, -1080, -1135} /* GC,GC,C,A,C */
02883 , { -1230, -1505, -1350, -1450, -1385} /* GC,GC,C,A,G */
02884 , { -870, -1135, -1100, -1080, -1135} /* GC,GC,C,A,U/T */
02885 }
02886 , { { -680, -945, -910, -890, -945} /* GC,GC,C,C,E */
02887 , { -680, -945, -910, -890, -945} /* GC,GC,C,C,A */
02888 , { -835, -1100, -1065, -1045, -1100} /* GC,GC,C,C,C */
02889 , { -680, -945, -910, -890, -945} /* GC,GC,C,C,G */
02890 , { -835, -1100, -1065, -1045, -1100} /* GC,GC,C,C,U/T */
02891 }
02892 , { { -500, -765, -730, -710, -765} /* GC,GC,C,G,E */
02893 , { -935, -1210, -1055, -1155, -1090} /* GC,GC,C,G,A */
02894 , { -815, -1080, -1045, -1025, -1080} /* GC,GC,C,G,C */
02895 , { -500, -765, -730, -710, -765} /* GC,GC,C,G,G */
02896 , { -815, -1080, -1045, -1025, -1080} /* GC,GC,C,G,U/T */
02897 }
02898 , { { -560, -825, -790, -770, -825} /* GC,GC,C,U/T,E */
02899 , { -560, -825, -790, -770, -825} /* GC,GC,C,U/T,A */
02900 , { -870, -1135, -1100, -1080, -1135} /* GC,GC,C,U/T,C */
02901 , { -560, -825, -790, -770, -825} /* GC,GC,C,U/T,G */
02902 , { -705, -970, -935, -915, -970} /* GC,GC,C,U/T,U/T */
02903 }
02904 }
02905 , { { { -65, -1015, -370, -275, -250} /* GC,GC,G,E,E */
02906 , { -65, -1015, -455, -275, -335} /* GC,GC,G,E,A */
02907 , { -290, -1230, -680, -500, -560} /* GC,GC,G,E,C */
02908 , { -250, -1195, -370, -460, -250} /* GC,GC,G,E,G */
02909 , { -290, -1230, -680, -500, -560} /* GC,GC,G,E,U/T */
02910 }
02911 , { { -330, -1280, -720, -540, -600} /* GC,GC,G,A,E */
02912 , { -330, -1280, -720, -540, -600} /* GC,GC,G,A,A */
02913 , { -555, -1505, -945, -765, -825} /* GC,GC,G,A,C */
02914 , { -1195, -1875, -1315, -1760, -1195} /* GC,GC,G,A,G */
02915 , { -555, -1505, -945, -765, -825} /* GC,GC,G,A,U/T */
02916 }
02917 , { { -370, -1315, -760, -580, -640} /* GC,GC,G,C,E */
02918 , { -370, -1315, -760, -580, -640} /* GC,GC,G,C,A */
02919 , { -520, -1350, -910, -730, -790} /* GC,GC,G,C,C */
02920 , { -370, -1315, -760, -580, -640} /* GC,GC,G,C,G */
02921 , { -520, -1350, -910, -730, -790} /* GC,GC,G,C,U/T */
02922 }
02923 , { { -460, -1450, -580, -710, -460} /* GC,GC,G,G,E */
02924 , { -905, -1580, -1025, -1470, -905} /* GC,GC,G,G,A */
02925 , { -500, -1450, -890, -710, -770} /* GC,GC,G,G,C */
02926 , { -460, -1760, -580, -1650, -460} /* GC,GC,G,G,G */
02927 , { -500, -1450, -890, -710, -770} /* GC,GC,G,G,U/T */
02928 }
02929 , { { -250, -1195, -640, -460, -520} /* GC,GC,G,U/T,E */
02930 , { -250, -1195, -640, -460, -520} /* GC,GC,G,U/T,A */
02931 , { -555, -1385, -945, -765, -825} /* GC,GC,G,U/T,C */
02932 , { -250, -1195, -640, -460, -520} /* GC,GC,G,U/T,G */
02933 , { -665, -1340, -785, -1230, -665} /* GC,GC,G,U/T,U/T */
02934 }
02935 }
02936 , { { { -290, -555, -520, -500, -360} /* GC,GC,U/T,E,E */
02937 , { -360, -645, -610, -590, -360} /* GC,GC,U/T,E,A */
02938 , { -605, -870, -835, -815, -705} /* GC,GC,U/T,E,C */
02939 , { -290, -555, -520, -500, -665} /* GC,GC,U/T,E,G */
02940 , { -605, -870, -835, -815, -705} /* GC,GC,U/T,E,U/T */
02941 }
02942 , { { -625, -910, -875, -855, -625} /* GC,GC,U/T,A,E */
02943 , { -625, -910, -875, -855, -625} /* GC,GC,U/T,A,A */
02944 , { -870, -1135, -1100, -1080, -970} /* GC,GC,U/T,A,C */
02945 , { -1230, -1505, -1350, -1450, -1340} /* GC,GC,U/T,A,G */
02946 , { -870, -1135, -1100, -1080, -970} /* GC,GC,U/T,A,U/T */
02947 }
02948 , { { -680, -945, -910, -890, -785} /* GC,GC,U/T,C,E */
02949 , { -680, -945, -910, -890, -785} /* GC,GC,U/T,C,A */
02950 , { -835, -1100, -1065, -1045, -935} /* GC,GC,U/T,C,C */
02951 , { -680, -945, -910, -890, -785} /* GC,GC,U/T,C,G */
02952 , { -835, -1100, -1065, -1045, -935} /* GC,GC,U/T,C,U/T */
02953 }
02954 , { { -500, -765, -730, -710, -915} /* GC,GC,U/T,G,E */
02955 , { -935, -1210, -1055, -1155, -1050} /* GC,GC,U/T,G,A */
02956 , { -815, -1080, -1045, -1025, -915} /* GC,GC,U/T,G,C */
02957 , { -500, -765, -730, -710, -1230} /* GC,GC,U/T,G,G */
02958 , { -815, -1080, -1045, -1025, -915} /* GC,GC,U/T,G,U/T */
02959 }
02960 , { { -560, -825, -790, -770, -665} /* GC,GC,U/T,U/T,E */
02961 , { -560, -825, -790, -770, -665} /* GC,GC,U/T,U/T,A */

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02962 , { -870, -1135, -1100, -1080, -970} /* GC,GC,U/T,U/T,C */
02963 , { -560, -825, -790, -770, -665} /* GC,GC,U/T,U/T,G */
02964 , { -705, -970, -935, -915, -810} /* GC,GC,U/T,U/T,U/T */
02965 }
02966 }
02967 }
02968 , {{{ 175, -90, -130, -260, -10} /* GC,GT,E,E,E */
02969 , { -365, -630, -665, -575, -545} /* GC,GT,E,E,A */
02970 , { -365, -715, -755, -575, -635} /* GC,GT,E,E,C */
02971 , { 175, -90, -130, -260, -10} /* GC,GT,E,E,G */
02972 , { -330, -595, -755, -575, -635} /* GC,GT,E,E,U/T */
02973 }
02974 , {{ -630, -980, -1020, -840, -900} /* GC,GT,E,A,E */
02975 , { -720, -1070, -1110, -930, -990} /* GC,GT,E,A,A */
02976 , { -630, -980, -1020, -840, -900} /* GC,GT,E,A,C */
02977 , { -725, -990, -1025, -1160, -905} /* GC,GT,E,A,G */
02978 , { -630, -980, -1020, -840, -900} /* GC,GT,E,A,U/T */
02979 }
02980 , {{ -485, -835, -875, -695, -755} /* GC,GT,E,C,E */
02981 , { -485, -835, -875, -695, -755} /* GC,GT,E,C,A */
02982 , { -485, -835, -875, -695, -755} /* GC,GT,E,C,C */
02983 , { -485, -835, -875, -695, -755} /* GC,GT,E,C,G */
02984 , { -485, -835, -875, -695, -755} /* GC,GT,E,C,U/T */
02985 }
02986 , {{ -35, -300, -340, -470, -220} /* GC,GT,E,G,E */
02987 , { -575, -840, -875, -1010, -755} /* GC,GT,E,G,A */
02988 , { -575, -925, -965, -785, -845} /* GC,GT,E,G,C */
02989 , { -35, -300, -340, -470, -220} /* GC,GT,E,G,G */
02990 , { -575, -925, -965, -785, -845} /* GC,GT,E,G,U/T */
02991 }
02992 , {{ -330, -595, -755, -575, -635} /* GC,GT,E,U/T,E */
02993 , { -365, -715, -755, -575, -635} /* GC,GT,E,U/T,A */
02994 , { -365, -715, -755, -575, -635} /* GC,GT,E,U/T,C */
02995 , { -365, -715, -755, -575, -635} /* GC,GT,E,U/T,G */
02996 , { -330, -595, -755, -885, -635} /* GC,GT,E,U/T,U/T */
02997 }
02998 }
02999 , {{{ 175, -90, -130, -900, -10} /* GC,GT,A,E,E */
03000 , { -365, -630, -665, -930, -545} /* GC,GT,A,E,A */
03001 , { -450, -715, -755, -900, -635} /* GC,GT,A,E,C */
03002 , { 175, -90, -130, -1020, -10} /* GC,GT,A,E,G */
03003 , { -330, -595, -755, -900, -635} /* GC,GT,A,E,U/T */
03004 }
03005 , {{ -715, -980, -1020, -1285, -900} /* GC,GT,A,A,E */
03006 , { -805, -1070, -1110, -1375, -990} /* GC,GT,A,A,A */
03007 , { -715, -980, -1020, -1285, -900} /* GC,GT,A,A,C */
03008 , { -725, -990, -1025, -1290, -905} /* GC,GT,A,A,G */
03009 , { -715, -980, -1020, -1285, -900} /* GC,GT,A,A,U/T */
03010 }
03011 , {{ -570, -835, -875, -1020, -755} /* GC,GT,A,C,E */
03012 , { -570, -835, -875, -1140, -755} /* GC,GT,A,C,A */
03013 , { -570, -835, -875, -1020, -755} /* GC,GT,A,C,C */
03014 , { -570, -835, -875, -1140, -755} /* GC,GT,A,C,G */
03015 , { -570, -835, -875, -1020, -755} /* GC,GT,A,C,U/T */
03016 }
03017 , {{ -35, -300, -340, -1140, -220} /* GC,GT,A,G,E */
03018 , { -575, -840, -875, -1140, -755} /* GC,GT,A,G,A */
03019 , { -660, -925, -965, -1230, -845} /* GC,GT,A,G,C */
03020 , { -35, -300, -340, -1230, -220} /* GC,GT,A,G,G */
03021 , { -660, -925, -965, -1230, -845} /* GC,GT,A,G,U/T */
03022 }
03023 , {{ -330, -595, -755, -900, -635} /* GC,GT,A,U/T,E */
03024 , { -450, -715, -755, -1020, -635} /* GC,GT,A,U/T,A */
03025 , { -450, -715, -755, -900, -635} /* GC,GT,A,U/T,C */
03026 , { -450, -715, -755, -1020, -635} /* GC,GT,A,U/T,G */
03027 , { -330, -595, -755, -1020, -635} /* GC,GT,A,U/T,U/T */
03028 }
03029 }
03030 , {{{ -50, -315, -280, -260, -315} /* GC,GT,C,E,E */
03031 , { -580, -855, -700, -800, -735} /* GC,GT,C,E,A */
03032 , { -675, -940, -905, -885, -940} /* GC,GT,C,E,C */
03033 , { -50, -315, -280, -260, -315} /* GC,GT,C,E,G */
03034 , { -675, -940, -905, -885, -940} /* GC,GT,C,E,U/T */
03035 }
03036 , {{ -940, -1205, -1060, -1150, -1095} /* GC,GT,C,A,E */
03037 , { -1030, -1295, -1260, -1240, -1295} /* GC,GT,C,A,A */
03038 , { -940, -1205, -1170, -1150, -1205} /* GC,GT,C,A,C */
03039 , { -940, -1215, -1060, -1160, -1095} /* GC,GT,C,A,G */
03040 , { -940, -1205, -1170, -1150, -1205} /* GC,GT,C,A,U/T */
03041 }
03042 , {{ -795, -1060, -1025, -1005, -1060} /* GC,GT,C,C,E */
03043 , { -795, -1060, -1025, -1005, -1060} /* GC,GT,C,C,A */
03044 , { -795, -1060, -1025, -1005, -1060} /* GC,GT,C,C,C */
03045 , { -795, -1060, -1025, -1005, -1060} /* GC,GT,C,C,G */
03046 , { -795, -1060, -1025, -1005, -1060} /* GC,GT,C,C,U/T */
03047 }
03048 , {{ -260, -525, -490, -470, -525} /* GC,GT,C,G,E */
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03049      , { -790, -1065, -910, -1010, -945} /* GC,GT,C,G,A */
03050      , { -885, -1150, -1115, -1095, -1150} /* GC,GT,C,G,C */
03051      , { -260, -525, -490, -470, -525} /* GC,GT,C,G,G */
03052      , { -885, -1150, -1115, -1095, -1150} /* GC,GT,C,G,U/T */
03053      }
03054      , { { -675, -940, -905, -885, -940} /* GC,GT,C,U/T,E */
03055      , { -675, -940, -905, -885, -940} /* GC,GT,C,U/T,A */
03056      , { -675, -940, -905, -885, -940} /* GC,GT,C,U/T,C */
03057      , { -675, -940, -905, -885, -940} /* GC,GT,C,U/T,G */
03058      , { -675, -940, -905, -885, -940} /* GC,GT,C,U/T,U/T */
03059      }
03060      }
03061      , { { { -10, -1190, -130, -575, -10} /* GC,GT,G,E,E */
03062      , { -365, -1225, -665, -575, -545} /* GC,GT,G,E,A */
03063      , { -365, -1190, -755, -575, -635} /* GC,GT,G,E,C */
03064      , { -10, -1310, -130, -575, -10} /* GC,GT,G,E,G */
03065      , { -365, -1190, -755, -575, -635} /* GC,GT,G,E,U/T */
03066      }
03067      , { { -630, -1575, -1020, -840, -900} /* GC,GT,G,A,E */
03068      , { -720, -1665, -1110, -930, -990} /* GC,GT,G,A,A */
03069      , { -630, -1575, -1020, -840, -900} /* GC,GT,G,A,C */
03070      , { -905, -1585, -1025, -1470, -905} /* GC,GT,G,A,G */
03071      , { -630, -1575, -1020, -840, -900} /* GC,GT,G,A,U/T */
03072      }
03073      , { { -485, -1310, -875, -695, -755} /* GC,GT,G,C,E */
03074      , { -485, -1430, -875, -695, -755} /* GC,GT,G,C,A */
03075      , { -485, -1310, -875, -695, -755} /* GC,GT,G,C,C */
03076      , { -485, -1430, -875, -695, -755} /* GC,GT,G,C,G */
03077      , { -485, -1310, -875, -695, -755} /* GC,GT,G,C,U/T */
03078      }
03079      , { { -220, -1435, -340, -785, -220} /* GC,GT,G,G,E */
03080      , { -755, -1435, -875, -1320, -755} /* GC,GT,G,G,A */
03081      , { -575, -1520, -965, -785, -845} /* GC,GT,G,G,C */
03082      , { -220, -1520, -340, -1410, -220} /* GC,GT,G,G,G */
03083      , { -575, -1520, -965, -785, -845} /* GC,GT,G,G,U/T */
03084      }
03085      , { { -365, -1190, -755, -575, -635} /* GC,GT,G,U/T,E */
03086      , { -365, -1310, -755, -575, -635} /* GC,GT,G,U/T,A */
03087      , { -365, -1190, -755, -575, -635} /* GC,GT,G,U/T,C */
03088      , { -365, -1310, -755, -575, -635} /* GC,GT,G,U/T,G */
03089      , { -635, -1310, -755, -1200, -635} /* GC,GT,G,U/T,U/T */
03090      }
03091      }
03092      , { { { -50, -315, -280, -260, -690} /* GC,GT,U/T,E,E */
03093      , { -580, -855, -700, -800, -690} /* GC,GT,U/T,E,A */
03094      , { -675, -940, -905, -885, -780} /* GC,GT,U/T,E,C */
03095      , { -50, -315, -280, -260, -780} /* GC,GT,U/T,E,G */
03096      , { -675, -940, -905, -885, -780} /* GC,GT,U/T,E,U/T */
03097      }
03098      , { { -940, -1205, -1060, -1150, -1015} /* GC,GT,U/T,A,E */
03099      , { -1015, -1295, -1260, -1240, -1015} /* GC,GT,U/T,A,A */
03100      , { -940, -1205, -1170, -1150, -1045} /* GC,GT,U/T,A,C */
03101      , { -940, -1215, -1060, -1160, -1050} /* GC,GT,U/T,A,G */
03102      , { -940, -1205, -1170, -1150, -1045} /* GC,GT,U/T,A,U/T */
03103      }
03104      , { { -795, -1060, -1025, -1005, -900} /* GC,GT,U/T,C,E */
03105      , { -795, -1060, -1025, -1005, -900} /* GC,GT,U/T,C,A */
03106      , { -795, -1060, -1025, -1005, -900} /* GC,GT,U/T,C,C */
03107      , { -795, -1060, -1025, -1005, -900} /* GC,GT,U/T,C,G */
03108      , { -795, -1060, -1025, -1005, -900} /* GC,GT,U/T,C,U/T */
03109      }
03110      , { { -260, -525, -490, -470, -900} /* GC,GT,U/T,G,E */
03111      , { -790, -1065, -910, -1010, -900} /* GC,GT,U/T,G,A */
03112      , { -885, -1150, -1115, -1095, -990} /* GC,GT,U/T,G,C */
03113      , { -260, -525, -490, -470, -990} /* GC,GT,U/T,G,G */
03114      , { -885, -1150, -1115, -1095, -990} /* GC,GT,U/T,G,U/T */
03115      }
03116      , { { -675, -940, -905, -885, -780} /* GC,GT,U/T,U/T,E */
03117      , { -675, -940, -905, -885, -780} /* GC,GT,U/T,U/T,A */
03118      , { -675, -940, -905, -885, -780} /* GC,GT,U/T,U/T,C */
03119      , { -675, -940, -905, -885, -780} /* GC,GT,U/T,U/T,G */
03120      , { -675, -940, -905, -885, -780} /* GC,GT,U/T,U/T,U/T */
03121      }
03122      }
03123      }
03124      , { { { { 465, 200, 165, 30, 285} /* GC,UG,E,E,E */
03125      , { 185, -395, -205, -25, -85} /* GC,UG,E,E,A */
03126      , { -70, -425, -460, -280, -340} /* GC,UG,E,E,C */
03127      , { 465, 200, 165, 30, 285} /* GC,UG,E,E,G */
03128      , { -40, -305, -460, -280, -340} /* GC,UG,E,E,U/T */
03129      }
03130      , { { 170, -410, -220, -40, -100} /* GC,UG,E,A,E */
03131      , { 170, -410, -220, -40, -100} /* GC,UG,E,A,A */
03132      , { -85, -440, -475, -295, -355} /* GC,UG,E,A,C */
03133      , { -345, -610, -645, -780, -525} /* GC,UG,E,A,G */
03134      , { -85, -440, -475, -295, -355} /* GC,UG,E,A,U/T */
03135      }

```

```
03136 ,{{ -70, -425, -460, -280, -340} /* GC,UG,E,C,E */
03137 ,{ -70, -425, -460, -280, -340} /* GC,UG,E,C,A */
03138 ,{ -70, -425, -460, -280, -340} /* GC,UG,E,C,C */
03139 ,{ -70, -425, -460, -280, -340} /* GC,UG,E,C,G */
03140 ,{ -70, -425, -460, -280, -340} /* GC,UG,E,C,U/T */
03141 }
03142 ,{{ 370, 105, 70, -65, 190} /* GC,UG,E,G,E */
03143 ,{ -510, -775, -810, -945, -690} /* GC,UG,E,G,A */
03144 ,{ -165, -520, -555, -375, -435} /* GC,UG,E,G,C */
03145 ,{ 370, 105, 70, -65, 190} /* GC,UG,E,G,G */
03146 ,{ -165, -520, -555, -375, -435} /* GC,UG,E,G,U/T */
03147 }
03148 ,{{ -460, -725, -880, -700, -760} /* GC,UG,E,U/T,E */
03149 ,{ -490, -845, -880, -700, -760} /* GC,UG,E,U/T,A */
03150 ,{ -490, -845, -880, -700, -760} /* GC,UG,E,U/T,C */
03151 ,{ -490, -845, -880, -700, -760} /* GC,UG,E,U/T,G */
03152 ,{ -460, -725, -880, -1015, -760} /* GC,UG,E,U/T,U/T */
03153 }
03154 }
03155 ,{{{ 465, 200, 165, -470, 285} /* GC,UG,A,E,E */
03156 ,{ -85, -425, -205, -470, -85} /* GC,UG,A,E,A */
03157 ,{ -160, -425, -460, -605, -340} /* GC,UG,A,E,C */
03158 ,{ 465, 200, 165, -725, 285} /* GC,UG,A,E,G */
03159 ,{ -40, -305, -460, -605, -340} /* GC,UG,A,E,U/T */
03160 }
03161 ,{{ -100, -440, -220, -485, -100} /* GC,UG,A,A,E */
03162 ,{ -100, -1215, -220, -485, -100} /* GC,UG,A,A,A */
03163 ,{ -175, -440, -475, -740, -355} /* GC,UG,A,A,C */
03164 ,{ -345, -610, -645, -910, -525} /* GC,UG,A,A,G */
03165 ,{ -175, -440, -475, -740, -355} /* GC,UG,A,A,U/T */
03166 }
03167 ,{{ -160, -425, -460, -605, -340} /* GC,UG,A,C,E */
03168 ,{ -160, -425, -460, -725, -340} /* GC,UG,A,C,A */
03169 ,{ -160, -425, -460, -605, -340} /* GC,UG,A,C,C */
03170 ,{ -160, -425, -460, -725, -340} /* GC,UG,A,C,G */
03171 ,{ -160, -425, -460, -605, -340} /* GC,UG,A,C,U/T */
03172 }
03173 ,{{ 370, 105, 70, -820, 190} /* GC,UG,A,G,E */
03174 ,{ -510, -775, -810, -1075, -690} /* GC,UG,A,G,A */
03175 ,{ -255, -520, -555, -820, -435} /* GC,UG,A,G,C */
03176 ,{ 370, 105, 70, -820, 190} /* GC,UG,A,G,G */
03177 ,{ -255, -520, -555, -820, -435} /* GC,UG,A,G,U/T */
03178 }
03179 ,{{ -460, -725, -880, -1025, -760} /* GC,UG,A,U/T,E */
03180 ,{ -580, -845, -880, -1145, -760} /* GC,UG,A,U/T,A */
03181 ,{ -580, -845, -880, -1025, -760} /* GC,UG,A,U/T,C */
03182 ,{ -580, -845, -880, -1145, -760} /* GC,UG,A,U/T,G */
03183 ,{ -460, -725, -880, -1145, -760} /* GC,UG,A,U/T,U/T */
03184 }
03185 }
03186 ,{{{ 240, -25, 10, 30, -25} /* GC,UG,C,E,E */
03187 ,{ -130, -395, -360, -340, -395} /* GC,UG,C,E,A */
03188 ,{ -385, -650, -615, -595, -650} /* GC,UG,C,E,C */
03189 ,{ 240, -25, 10, 30, -25} /* GC,UG,C,E,G */
03190 ,{ -385, -650, -615, -595, -650} /* GC,UG,C,E,U/T */
03191 }
03192 ,{{ -145, -410, -375, -355, -410} /* GC,UG,C,A,E */
03193 ,{ -145, -410, -375, -355, -410} /* GC,UG,C,A,A */
03194 ,{ -400, -665, -630, -610, -665} /* GC,UG,C,A,C */
03195 ,{ -560, -835, -680, -780, -715} /* GC,UG,C,A,G */
03196 ,{ -400, -665, -630, -610, -665} /* GC,UG,C,A,U/T */
03197 }
03198 ,{{ -385, -650, -615, -595, -650} /* GC,UG,C,C,E */
03199 ,{ -385, -650, -615, -595, -650} /* GC,UG,C,C,A */
03200 ,{ -385, -650, -615, -595, -650} /* GC,UG,C,C,C */
03201 ,{ -385, -650, -615, -595, -650} /* GC,UG,C,C,G */
03202 ,{ -385, -650, -615, -595, -650} /* GC,UG,C,C,U/T */
03203 }
03204 ,{{ 145, -120, -85, -65, -120} /* GC,UG,C,G,E */
03205 ,{ -725, -1000, -845, -945, -880} /* GC,UG,C,G,A */
03206 ,{ -480, -745, -710, -690, -745} /* GC,UG,C,G,C */
03207 ,{ 145, -120, -85, -65, -120} /* GC,UG,C,G,G */
03208 ,{ -480, -745, -710, -690, -745} /* GC,UG,C,G,U/T */
03209 }
03210 ,{{ -805, -1070, -1035, -1015, -1070} /* GC,UG,C,U/T,E */
03211 ,{ -805, -1070, -1035, -1015, -1070} /* GC,UG,C,U/T,A */
03212 ,{ -805, -1070, -1035, -1015, -1070} /* GC,UG,C,U/T,C */
03213 ,{ -805, -1070, -1035, -1015, -1070} /* GC,UG,C,U/T,G */
03214 ,{ -805, -1070, -1035, -1015, -1070} /* GC,UG,C,U/T,U/T */
03215 }
03216 }
03217 ,{{{ 285, -765, 165, -25, 285} /* GC,UG,G,E,E */
03218 ,{ 185, -765, -205, -25, -85} /* GC,UG,G,E,A */
03219 ,{ -70, -900, -460, -280, -340} /* GC,UG,G,E,C */
03220 ,{ 285, -1020, 165, -280, 285} /* GC,UG,G,E,G */
03221 ,{ -70, -900, -460, -280, -340} /* GC,UG,G,E,U/T */
03222 }
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03223 ,{{ 170, -780, -220, -40, -100} /* GC,UG,G,A,E */
03224 ,{ 170, -780, -220, -40, -100} /* GC,UG,G,A,A */
03225 ,{ -85, -1035, -475, -295, -355} /* GC,UG,G,A,C */
03226 ,{ -525, -1205, -645, -1090, -525} /* GC,UG,G,A,G */
03227 ,{ -85, -1035, -475, -295, -355} /* GC,UG,G,A,U/T */
03228 }
03229 ,{{ -70, -900, -460, -280, -340} /* GC,UG,G,C,E */
03230 ,{ -70, -1020, -460, -280, -340} /* GC,UG,G,C,A */
03231 ,{ -70, -900, -460, -280, -340} /* GC,UG,G,C,C */
03232 ,{ -70, -1020, -460, -280, -340} /* GC,UG,G,C,G */
03233 ,{ -70, -900, -460, -280, -340} /* GC,UG,G,C,U/T */
03234 }
03235 ,{{ 190, -1115, 70, -375, 190} /* GC,UG,G,G,E */
03236 ,{ -690, -1370, -810, -1255, -690} /* GC,UG,G,G,A */
03237 ,{ -165, -1115, -555, -375, -435} /* GC,UG,G,G,C */
03238 ,{ 190, -1115, 70, -1000, 190} /* GC,UG,G,G,G */
03239 ,{ -165, -1115, -555, -375, -435} /* GC,UG,G,G,U/T */
03240 }
03241 ,{{ -490, -1320, -880, -700, -760} /* GC,UG,G,U/T,E */
03242 ,{ -490, -1440, -880, -700, -760} /* GC,UG,G,U/T,A */
03243 ,{ -490, -1320, -880, -700, -760} /* GC,UG,G,U/T,C */
03244 ,{ -490, -1440, -880, -700, -760} /* GC,UG,G,U/T,G */
03245 ,{ -760, -1440, -880, -1325, -760} /* GC,UG,G,U/T,U/T */
03246 }
03247 }
03248 ,{{{ 240, -25, 10, 30, -110} /* GC,UG,U/T,E,E */
03249 ,{ -110, -395, -360, -340, -110} /* GC,UG,U/T,E,A */
03250 ,{ -385, -650, -615, -595, -485} /* GC,UG,U/T,E,C */
03251 ,{ 240, -25, 10, 30, -485} /* GC,UG,U/T,E,G */
03252 ,{ -385, -650, -615, -595, -485} /* GC,UG,U/T,E,U/T */
03253 }
03254 ,{{ -125, -410, -375, -355, -125} /* GC,UG,U/T,A,E */
03255 ,{ -125, -410, -375, -355, -125} /* GC,UG,U/T,A,A */
03256 ,{ -400, -665, -630, -610, -500} /* GC,UG,U/T,A,C */
03257 ,{ -560, -835, -680, -780, -670} /* GC,UG,U/T,A,G */
03258 ,{ -400, -665, -630, -610, -500} /* GC,UG,U/T,A,U/T */
03259 }
03260 ,{{ -385, -650, -615, -595, -485} /* GC,UG,U/T,C,E */
03261 ,{ -385, -650, -615, -595, -485} /* GC,UG,U/T,C,A */
03262 ,{ -385, -650, -615, -595, -485} /* GC,UG,U/T,C,C */
03263 ,{ -385, -650, -615, -595, -485} /* GC,UG,U/T,C,G */
03264 ,{ -385, -650, -615, -595, -485} /* GC,UG,U/T,C,U/T */
03265 }
03266 ,{{ 145, -120, -85, -65, -580} /* GC,UG,U/T,G,E */
03267 ,{ -725, -1000, -845, -945, -835} /* GC,UG,U/T,G,A */
03268 ,{ -480, -745, -710, -690, -580} /* GC,UG,U/T,G,C */
03269 ,{ 145, -120, -85, -65, -580} /* GC,UG,U/T,G,G */
03270 ,{ -480, -745, -710, -690, -580} /* GC,UG,U/T,G,U/T */
03271 }
03272 ,{{ -805, -1070, -1035, -1015, -905} /* GC,UG,U/T,U/T,E */
03273 ,{ -805, -1070, -1035, -1015, -905} /* GC,UG,U/T,U/T,A */
03274 ,{ -805, -1070, -1035, -1015, -905} /* GC,UG,U/T,U/T,C */
03275 ,{ -805, -1070, -1035, -1015, -905} /* GC,UG,U/T,U/T,G */
03276 ,{ -805, -1070, -1035, -1015, -905} /* GC,UG,U/T,U/T,U/T */
03277 }
03278 }
03279 }
03280 ,{{{ 785, 520, 480, 395, 600} /* GC,AT,E,E,E */
03281 ,{ 605, 250, 215, 395, 335} /* GC,AT,E,E,A */
03282 ,{ 455, 100, 65, 245, 185} /* GC,AT,E,E,C */
03283 ,{ 785, 520, 480, 350, 600} /* GC,AT,E,E,G */
03284 ,{ 455, 100, 65, 245, 185} /* GC,AT,E,E,U/T */
03285 }
03286 ,{{ 545, 190, 155, 335, 275} /* GC,AT,E,A,E */
03287 ,{ 545, 190, 155, 335, 275} /* GC,AT,E,A,A */
03288 ,{ 390, 35, 0, 180, 120} /* GC,AT,E,A,C */
03289 ,{ -235, -500, -540, -670, -420} /* GC,AT,E,A,G */
03290 ,{ 390, 35, 0, 180, 120} /* GC,AT,E,A,U/T */
03291 }
03292 ,{{ 460, 105, 70, 250, 190} /* GC,AT,E,C,E */
03293 ,{ 460, 105, 70, 250, 190} /* GC,AT,E,C,A */
03294 ,{ 455, 100, 65, 245, 185} /* GC,AT,E,C,C */
03295 ,{ 460, 105, 70, 250, 190} /* GC,AT,E,C,G */
03296 ,{ 455, 100, 65, 245, 185} /* GC,AT,E,C,U/T */
03297 }
03298 ,{{ 760, 495, 455, 325, 575} /* GC,AT,E,G,E */
03299 ,{ -110, -375, -415, -545, -295} /* GC,AT,E,G,A */
03300 ,{ 425, 70, 35, 215, 155} /* GC,AT,E,G,C */
03301 ,{ 760, 495, 455, 325, 575} /* GC,AT,E,G,G */
03302 ,{ 425, 70, 35, 215, 155} /* GC,AT,E,G,U/T */
03303 }
03304 ,{{ 415, 60, 25, 205, 145} /* GC,AT,E,U/T,E */
03305 ,{ 415, 60, 25, 205, 145} /* GC,AT,E,U/T,A */
03306 ,{ 410, 55, 20, 200, 140} /* GC,AT,E,U/T,C */
03307 ,{ 415, 60, 25, 205, 145} /* GC,AT,E,U/T,G */
03308 ,{ -45, -310, -470, -600, -350} /* GC,AT,E,U/T,U/T */
03309 }

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03310    }
03311    ,{{{ 785, 520, 480, -50, 600} /* GC,AT,A,E,E */
03312    ,{ 515, 250, 215, -50, 335} /* GC,AT,A,E,A */
03313    ,{ 365, 100, 65, -80, 185} /* GC,AT,A,E,C */
03314    ,{ 785, 520, 480, -195, 600} /* GC,AT,A,E,G */
03315    ,{ 365, 100, 65, -80, 185} /* GC,AT,A,E,U/T */
03316    }
03317    ,{{{ 455, 190, 155, -110, 275} /* GC,AT,A,A,E */
03318    ,{ 455, 190, 155, -110, 275} /* GC,AT,A,A,A */
03319    ,{ 300, 35, 0, -265, 120} /* GC,AT,A,A,C */
03320    ,{ -235, -500, -540, -805, -420} /* GC,AT,A,A,G */
03321    ,{ 300, 35, 0, -265, 120} /* GC,AT,A,A,U/T */
03322    }
03323    ,{{{ 370, 105, 70, -80, 190} /* GC,AT,A,C,E */
03324    ,{ 370, 105, 70, -195, 190} /* GC,AT,A,C,A */
03325    ,{ 365, 100, 65, -80, 185} /* GC,AT,A,C,C */
03326    ,{ 370, 105, 70, -195, 190} /* GC,AT,A,C,G */
03327    ,{ 365, 100, 65, -80, 185} /* GC,AT,A,C,U/T */
03328    }
03329    ,{{{ 760, 495, 455, -230, 575} /* GC,AT,A,G,E */
03330    ,{ -110, -375, -415, -680, -295} /* GC,AT,A,G,A */
03331    ,{ 335, 70, 35, -230, 155} /* GC,AT,A,G,C */
03332    ,{ 760, 495, 455, -435, 575} /* GC,AT,A,G,G */
03333    ,{ 335, 70, 35, -230, 155} /* GC,AT,A,G,U/T */
03334    }
03335    ,{{{ 325, 60, 25, -125, 145} /* GC,AT,A,U/T,E */
03336    ,{ 325, 60, 25, -240, 145} /* GC,AT,A,U/T,A */
03337    ,{ 320, 55, 20, -125, 140} /* GC,AT,A,U/T,C */
03338    ,{ 325, 60, 25, -240, 145} /* GC,AT,A,U/T,G */
03339    ,{ -45, -310, -470, -735, -350} /* GC,AT,A,U/T,U/T */
03340    }
03341    }
03342    ,{{{ 560, 295, 330, 350, 295} /* GC,AT,C,E,E */
03343    ,{ 290, 25, 65, 80, 30} /* GC,AT,C,E,A */
03344    ,{ 145, -120, -85, -65, -120} /* GC,AT,C,E,C */
03345    ,{ 560, 295, 330, 350, 295} /* GC,AT,C,E,G */
03346    ,{ 145, -120, -85, -65, -120} /* GC,AT,C,E,U/T */
03347    }
03348    ,{{{ 230, -35, 5, 20, -30} /* GC,AT,C,A,E */
03349    ,{ 230, -35, 5, 20, -30} /* GC,AT,C,A,A */
03350    ,{ 80, -185, -150, -130, -185} /* GC,AT,C,A,C */
03351    ,{ -450, -725, -570, -670, -605} /* GC,AT,C,A,G */
03352    ,{ 80, -185, -150, -130, -185} /* GC,AT,C,A,U/T */
03353    }
03354    ,{{{ 145, -120, -85, -65, -120} /* GC,AT,C,C,E */
03355    ,{ 145, -120, -85, -65, -120} /* GC,AT,C,C,A */
03356    ,{ 145, -120, -85, -65, -120} /* GC,AT,C,C,C */
03357    ,{ 145, -120, -85, -65, -120} /* GC,AT,C,C,G */
03358    ,{ 145, -120, -85, -65, -120} /* GC,AT,C,C,U/T */
03359    }
03360    ,{{{ 535, 270, 305, 325, 270} /* GC,AT,C,G,E */
03361    ,{ -325, -600, -445, -545, -480} /* GC,AT,C,G,A */
03362    ,{ 115, -150, -115, -95, -150} /* GC,AT,C,G,C */
03363    ,{ 535, 270, 305, 325, 270} /* GC,AT,C,G,G */
03364    ,{ 115, -150, -115, -95, -150} /* GC,AT,C,G,U/T */
03365    }
03366    ,{{{ 100, -165, -130, -110, -165} /* GC,AT,C,U/T,E */
03367    ,{ 100, -165, -130, -110, -165} /* GC,AT,C,U/T,A */
03368    ,{ 100, -165, -130, -110, -165} /* GC,AT,C,U/T,C */
03369    ,{ 100, -165, -130, -110, -165} /* GC,AT,C,U/T,G */
03370    ,{ -390, -655, -620, -600, -655} /* GC,AT,C,U/T,U/T */
03371    }
03372    }
03373    ,{{{ 605, -340, 480, 395, 600} /* GC,AT,G,E,E */
03374    ,{ 605, -340, 215, 395, 335} /* GC,AT,G,E,A */
03375    ,{ 455, -370, 65, 245, 185} /* GC,AT,G,E,C */
03376    ,{ 600, -490, 480, 250, 600} /* GC,AT,G,E,G */
03377    ,{ 455, -370, 65, 245, 185} /* GC,AT,G,E,U/T */
03378    }
03379    ,{{{ 545, -400, 155, 335, 275} /* GC,AT,G,A,E */
03380    ,{ 545, -400, 155, 335, 275} /* GC,AT,G,A,A */
03381    ,{ 390, -555, 0, 180, 120} /* GC,AT,G,A,C */
03382    ,{ -420, -1095, -540, -985, -420} /* GC,AT,G,A,G */
03383    ,{ 390, -555, 0, 180, 120} /* GC,AT,G,A,U/T */
03384    }
03385    ,{{{ 460, -370, 70, 250, 190} /* GC,AT,G,C,E */
03386    ,{ 460, -490, 70, 250, 190} /* GC,AT,G,C,A */
03387    ,{ 455, -370, 65, 245, 185} /* GC,AT,G,C,C */
03388    ,{ 460, -490, 70, 250, 190} /* GC,AT,G,C,G */
03389    ,{ 455, -370, 65, 245, 185} /* GC,AT,G,C,U/T */
03390    }
03391    ,{{{ 575, -520, 455, 215, 575} /* GC,AT,G,G,E */
03392    ,{ -295, -970, -415, -860, -295} /* GC,AT,G,G,A */
03393    ,{ 425, -520, 35, 215, 155} /* GC,AT,G,G,C */
03394    ,{ 575, -725, 455, -615, 575} /* GC,AT,G,G,G */
03395    ,{ 425, -520, 35, 215, 155} /* GC,AT,G,G,U/T */
03396    }
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03397 ,{{ 415, -415, 25, 205, 145} /* GC,AT,G,U/T,E */
03398 ,{ 415, -535, 25, 205, 145} /* GC,AT,G,U/T,A */
03399 ,{ 410, -415, 20, 200, 140} /* GC,AT,G,U/T,C */
03400 ,{ 415, -535, 25, 205, 145} /* GC,AT,G,U/T,G */
03401 ,{ -350, -1025, -470, -915, -350} /* GC,AT,G,U/T,U/T */
03402 }
03403 }
03404 ,{{{ 560, 295, 330, 350, 310} /* GC,AT,U/T,E,E */
03405 ,{ 310, 25, 65, 80, 310} /* GC,AT,U/T,E,A */
03406 ,{ 145, -120, -85, -65, 40} /* GC,AT,U/T,E,C */
03407 ,{ 560, 295, 330, 350, 45} /* GC,AT,U/T,E,G */
03408 ,{ 145, -120, -85, -65, 40} /* GC,AT,U/T,E,U/T */
03409 }
03410 ,{{ 250, -35, 5, 20, 250} /* GC,AT,U/T,A,E */
03411 ,{ 250, -35, 5, 20, 250} /* GC,AT,U/T,A,A */
03412 ,{ 80, -185, -150, -130, -25} /* GC,AT,U/T,A,C */
03413 ,{ -450, -725, -570, -670, -565} /* GC,AT,U/T,A,G */
03414 ,{ 80, -185, -150, -130, -25} /* GC,AT,U/T,A,U/T */
03415 }
03416 ,{{ 145, -120, -85, -65, 45} /* GC,AT,U/T,C,E */
03417 ,{ 145, -120, -85, -65, 45} /* GC,AT,U/T,C,A */
03418 ,{ 145, -120, -85, -65, 40} /* GC,AT,U/T,C,C */
03419 ,{ 145, -120, -85, -65, 45} /* GC,AT,U/T,C,G */
03420 ,{ 145, -120, -85, -65, 40} /* GC,AT,U/T,C,U/T */
03421 }
03422 ,{{{ 535, 270, 305, 325, 10} /* GC,AT,U/T,G,E */
03423 ,{ -325, -600, -445, -545, -440} /* GC,AT,U/T,G,A */
03424 ,{ 115, -150, -115, -95, 10} /* GC,AT,U/T,G,C */
03425 ,{ 535, 270, 305, 325, -195} /* GC,AT,U/T,G,G */
03426 ,{ 115, -150, -115, -95, 10} /* GC,AT,U/T,G,U/T */
03427 }
03428 ,{{{ 100, -165, -130, -110, 0} /* GC,AT,U/T,U/T,E */
03429 ,{ 100, -165, -130, -110, 0} /* GC,AT,U/T,U/T,A */
03430 ,{ 100, -165, -130, -110, -5} /* GC,AT,U/T,U/T,C */
03431 ,{ 100, -165, -130, -110, 0} /* GC,AT,U/T,U/T,G */
03432 ,{ -390, -655, -620, -600, -495} /* GC,AT,U/T,U/T,U/T */
03433 }
03434 }
03435 }
03436 ,{{{ 745, 480, 445, 310, 565} /* GC,UA,E,E,E */
03437 ,{ 510, 155, 115, 300, 235} /* GC,UA,E,E,A */
03438 ,{ 445, 90, 50, 235, 170} /* GC,UA,E,E,C */
03439 ,{ 745, 480, 445, 310, 565} /* GC,UA,E,E,G */
03440 ,{ 380, 25, -15, 170, 105} /* GC,UA,E,E,U/T */
03441 }
03442 ,{{ 495, 140, 100, 285, 220} /* GC,UA,E,A,E */
03443 ,{ 495, 140, 100, 285, 220} /* GC,UA,E,A,A */
03444 ,{ 355, 0, -40, 145, 80} /* GC,UA,E,A,C */
03445 ,{ -295, -560, -600, -730, -480} /* GC,UA,E,A,G */
03446 ,{ 355, 0, -40, 145, 80} /* GC,UA,E,A,U/T */
03447 }
03448 ,{{ 445, 90, 50, 235, 170} /* GC,UA,E,C,E */
03449 ,{ 445, 90, 50, 235, 170} /* GC,UA,E,C,A */
03450 ,{ 445, 90, 50, 235, 170} /* GC,UA,E,C,C */
03451 ,{ 445, 90, 50, 235, 170} /* GC,UA,E,C,G */
03452 ,{ 380, 25, -15, 170, 105} /* GC,UA,E,C,U/T */
03453 }
03454 ,{{ 650, 385, 350, 215, 470} /* GC,UA,E,G,E */
03455 ,{ -525, -790, -830, -960, -710} /* GC,UA,E,G,A */
03456 ,{ 275, -80, -120, 65, 0} /* GC,UA,E,G,C */
03457 ,{ 650, 385, 350, 215, 470} /* GC,UA,E,G,G */
03458 ,{ 275, -80, -120, 65, 0} /* GC,UA,E,G,U/T */
03459 }
03460 ,{{ 25, -330, -370, -185, -250} /* GC,UA,E,U/T,E */
03461 ,{ 25, -330, -370, -185, -250} /* GC,UA,E,U/T,A */
03462 ,{ -195, -550, -585, -405, -465} /* GC,UA,E,U/T,C */
03463 ,{ 25, -330, -370, -185, -250} /* GC,UA,E,U/T,G */
03464 ,{ -415, -680, -835, -970, -715} /* GC,UA,E,U/T,U/T */
03465 }
03466 }
03467 ,{{{ 745, 480, 445, -90, 565} /* GC,UA,A,E,E */
03468 ,{ 420, 155, 115, -145, 235} /* GC,UA,A,E,A */
03469 ,{ 355, 90, 50, -90, 170} /* GC,UA,A,E,C */
03470 ,{ 745, 480, 445, -210, 565} /* GC,UA,A,E,G */
03471 ,{ 290, 25, -15, -155, 105} /* GC,UA,A,E,U/T */
03472 }
03473 ,{{ 405, 140, 100, -160, 220} /* GC,UA,A,A,E */
03474 ,{ 405, 140, 100, -160, 220} /* GC,UA,A,A,A */
03475 ,{ 265, 0, -40, -300, 80} /* GC,UA,A,A,C */
03476 ,{ -295, -560, -600, -865, -480} /* GC,UA,A,A,G */
03477 ,{ 265, 0, -40, -300, 80} /* GC,UA,A,A,U/T */
03478 }
03479 ,{{ 355, 90, 50, -90, 170} /* GC,UA,A,C,E */
03480 ,{ 355, 90, 50, -210, 170} /* GC,UA,A,C,A */
03481 ,{ 355, 90, 50, -90, 170} /* GC,UA,A,C,C */
03482 ,{ 355, 90, 50, -210, 170} /* GC,UA,A,C,G */
03483 ,{ 290, 25, -15, -155, 105} /* GC,UA,A,C,U/T */

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03484      }
03485      ,{{      650,      385,      350,      -380,      470} /* GC,UA,A,G,E */
03486      ,{      -525,      -790,      -830,      -1095,      -710} /* GC,UA,A,G,A */
03487      ,{      185,      -80,      -120,      -380,      0} /* GC,UA,A,G,C */
03488      ,{      650,      385,      350,      -540,      470} /* GC,UA,A,G,G */
03489      ,{      185,      -80,      -120,      -380,      0} /* GC,UA,A,G,U/T */
03490      }
03491      ,{{      -65,      -330,      -370,      -630,      -250} /* GC,UA,A,U/T,E */
03492      ,{      -65,      -330,      -370,      -630,      -250} /* GC,UA,A,U/T,A */
03493      ,{      -285,      -550,      -585,      -730,      -465} /* GC,UA,A,U/T,C */
03494      ,{      -65,      -330,      -370,      -630,      -250} /* GC,UA,A,U/T,G */
03495      ,{      -415,      -680,      -835,      -1100,      -715} /* GC,UA,A,U/T,U/T */
03496      }
03497      }
03498      ,{{{      520,      255,      290,      310,      255} /* GC,UA,C,E,E */
03499      ,{      195,      -70,      -35,      -15,      -70} /* GC,UA,C,E,A */
03500      ,{      130,      -135,      -100,      -80,      -135} /* GC,UA,C,E,C */
03501      ,{      520,      255,      290,      310,      255} /* GC,UA,C,E,G */
03502      ,{      65,      -200,      -165,      -145,      -200} /* GC,UA,C,E,U/T */
03503      }
03504      ,{{      180,      -85,      -50,      -30,      -85} /* GC,UA,C,A,E */
03505      ,{      180,      -85,      -50,      -30,      -85} /* GC,UA,C,A,A */
03506      ,{      40,      -225,      -190,      -170,      -225} /* GC,UA,C,A,C */
03507      ,{      -510,      -785,      -630,      -730,      -665} /* GC,UA,C,A,G */
03508      ,{      40,      -225,      -190,      -170,      -225} /* GC,UA,C,A,U/T */
03509      }
03510      ,{{{      130,      -135,      -100,      -80,      -135} /* GC,UA,C,C,E */
03511      ,{      130,      -135,      -100,      -80,      -135} /* GC,UA,C,C,A */
03512      ,{      130,      -135,      -100,      -80,      -135} /* GC,UA,C,C,C */
03513      ,{      130,      -135,      -100,      -80,      -135} /* GC,UA,C,C,G */
03514      ,{      65,      -200,      -165,      -145,      -200} /* GC,UA,C,C,U/T */
03515      }
03516      ,{{{      425,      160,      195,      215,      160} /* GC,UA,C,G,E */
03517      ,{      -740,      -1015,      -860,      -960,      -895} /* GC,UA,C,G,A */
03518      ,{      -40,      -305,      -270,      -250,      -305} /* GC,UA,C,G,C */
03519      ,{      425,      160,      195,      215,      160} /* GC,UA,C,G,G */
03520      ,{      -40,      -305,      -270,      -250,      -305} /* GC,UA,C,G,U/T */
03521      }
03522      ,{{{      -290,      -555,      -520,      -500,      -555} /* GC,UA,C,U/T,E */
03523      ,{      -290,      -555,      -520,      -500,      -555} /* GC,UA,C,U/T,A */
03524      ,{      -510,      -775,      -740,      -720,      -775} /* GC,UA,C,U/T,C */
03525      ,{      -290,      -555,      -520,      -500,      -555} /* GC,UA,C,U/T,G */
03526      ,{      -760,      -1025,      -990,      -970,      -1025} /* GC,UA,C,U/T,U/T */
03527      }
03528      }
03529      ,{{{      565,      -385,      445,      300,      565} /* GC,UA,G,E,E */
03530      ,{      510,      -440,      115,      300,      235} /* GC,UA,G,E,A */
03531      ,{      445,      -385,      50,      235,      170} /* GC,UA,G,E,C */
03532      ,{      565,      -505,      445,      235,      565} /* GC,UA,G,E,G */
03533      ,{      380,      -450,      -15,      170,      105} /* GC,UA,G,E,U/T */
03534      }
03535      ,{{{      495,      -455,      100,      285,      220} /* GC,UA,G,A,E */
03536      ,{      495,      -455,      100,      285,      220} /* GC,UA,G,A,A */
03537      ,{      355,      -595,      -40,      145,      80} /* GC,UA,G,A,C */
03538      ,{      -480,      -1155,      -600,      -1045,      -480} /* GC,UA,G,A,G */
03539      ,{      355,      -595,      -40,      145,      80} /* GC,UA,G,A,U/T */
03540      }
03541      ,{{{      445,      -385,      50,      235,      170} /* GC,UA,G,C,E */
03542      ,{      445,      -505,      50,      235,      170} /* GC,UA,G,C,A */
03543      ,{      445,      -385,      50,      235,      170} /* GC,UA,G,C,C */
03544      ,{      445,      -505,      50,      235,      170} /* GC,UA,G,C,G */
03545      ,{      380,      -450,      -15,      170,      105} /* GC,UA,G,C,U/T */
03546      }
03547      ,{{{      470,      -675,      350,      65,      470} /* GC,UA,G,G,E */
03548      ,{      -710,      -1385,      -830,      -1275,      -710} /* GC,UA,G,G,A */
03549      ,{      275,      -675,      -120,      65,      0} /* GC,UA,G,G,C */
03550      ,{      470,      -835,      350,      -720,      470} /* GC,UA,G,G,G */
03551      ,{      275,      -675,      -120,      65,      0} /* GC,UA,G,G,U/T */
03552      }
03553      ,{{{      25,      -925,      -370,      -185,      -250} /* GC,UA,G,U/T,E */
03554      ,{      25,      -925,      -370,      -185,      -250} /* GC,UA,G,U/T,A */
03555      ,{      -195,      -1025,      -585,      -405,      -465} /* GC,UA,G,U/T,C */
03556      ,{      25,      -925,      -370,      -185,      -250} /* GC,UA,G,U/T,G */
03557      ,{      -715,      -1395,      -835,      -1280,      -715} /* GC,UA,G,U/T,U/T */
03558      }
03559      }
03560      ,{{{      520,      255,      290,      310,      210} /* GC,UA,U/T,E,E */
03561      ,{      210,      -70,      -35,      -15,      210} /* GC,UA,U/T,E,A */
03562      ,{      130,      -135,      -100,      -80,      30} /* GC,UA,U/T,E,C */
03563      ,{      520,      255,      290,      310,      30} /* GC,UA,U/T,E,G */
03564      ,{      65,      -200,      -165,      -145,      -35} /* GC,UA,U/T,E,U/T */
03565      }
03566      ,{{{      195,      -85,      -50,      -30,      195} /* GC,UA,U/T,A,E */
03567      ,{      195,      -85,      -50,      -30,      195} /* GC,UA,U/T,A,A */
03568      ,{      40,      -225,      -190,      -170,      -60} /* GC,UA,U/T,A,C */
03569      ,{      -510,      -785,      -630,      -730,      -625} /* GC,UA,U/T,A,G */
03570      ,{      40,      -225,      -190,      -170,      -60} /* GC,UA,U/T,A,U/T */
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03571      }
03572      ,{{      130,      -135,      -100,      -80,      30} /* GC,UA,U/T,C,E */
03573      ,{      130,      -135,      -100,      -80,      30} /* GC,UA,U/T,C,A */
03574      ,{      130,      -135,      -100,      -80,      30} /* GC,UA,U/T,C,C */
03575      ,{      130,      -135,      -100,      -80,      30} /* GC,UA,U/T,C,G */
03576      ,{      65,      -200,      -165,      -145,      -35} /* GC,UA,U/T,C,U/T */
03577      }
03578      ,{{      425,      160,      195,      215,      -140} /* GC,UA,U/T,G,E */
03579      ,{      -740,      -1015,      -860,      -960,      -855} /* GC,UA,U/T,G,A */
03580      ,{      -40,      -305,      -270,      -250,      -140} /* GC,UA,U/T,G,C */
03581      ,{      425,      160,      195,      215,      -300} /* GC,UA,U/T,G,G */
03582      ,{      -40,      -305,      -270,      -250,      -140} /* GC,UA,U/T,G,U/T */
03583      }
03584      ,{{      -290,      -555,      -520,      -500,      -390} /* GC,UA,U/T,U/T,E */
03585      ,{      -290,      -555,      -520,      -500,      -390} /* GC,UA,U/T,U/T,A */
03586      ,{      -510,      -775,      -740,      -720,      -610} /* GC,UA,U/T,U/T,C */
03587      ,{      -290,      -555,      -520,      -500,      -390} /* GC,UA,U/T,U/T,G */
03588      ,{      -760,      -1025,      -990,      -970,      -860} /* GC,UA,U/T,U/T,U/T */
03589      }
03590      }
03591      }
03592      ,{{{      875,      610,      575,      440,      695} /* GC,NN,E,E,E */
03593      ,{      640,      285,      365,      430,      365} /* GC,NN,E,E,A */
03594      ,{      575,      220,      180,      365,      300} /* GC,NN,E,E,C */
03595      ,{      875,      610,      575,      440,      695} /* GC,NN,E,E,G */
03596      ,{      510,      155,      115,      300,      235} /* GC,NN,E,E,U/T */
03597      }
03598      ,{{      580,      225,      185,      370,      305} /* GC,NN,E,A,E */
03599      ,{      580,      225,      185,      370,      305} /* GC,NN,E,A,A */
03600      ,{      440,      85,      45,      230,      165} /* GC,NN,E,A,C */
03601      ,{      -20,      -285,      -400,      -535,      -280} /* GC,NN,E,A,G */
03602      ,{      440,      85,      45,      230,      165} /* GC,NN,E,A,U/T */
03603      }
03604      ,{{      575,      220,      180,      365,      300} /* GC,NN,E,C,E */
03605      ,{      575,      220,      180,      365,      300} /* GC,NN,E,C,A */
03606      ,{      575,      220,      180,      365,      300} /* GC,NN,E,C,C */
03607      ,{      575,      220,      180,      365,      300} /* GC,NN,E,C,G */
03608      ,{      510,      155,      115,      300,      235} /* GC,NN,E,C,U/T */
03609      }
03610      ,{{      850,      585,      550,      415,      670} /* GC,NN,E,G,E */
03611      ,{      460,      -125,      340,      -545,      -215} /* GC,NN,E,G,A */
03612      ,{      475,      120,      80,      265,      200} /* GC,NN,E,G,C */
03613      ,{      850,      585,      550,      415,      670} /* GC,NN,E,G,G */
03614      ,{      475,      120,      80,      265,      200} /* GC,NN,E,G,U/T */
03615      }
03616      ,{{      530,      175,      135,      320,      255} /* GC,NN,E,U/T,E */
03617      ,{      530,      175,      135,      320,      255} /* GC,NN,E,U/T,A */
03618      ,{      410,      55,      20,      200,      140} /* GC,NN,E,U/T,C */
03619      ,{      530,      175,      135,      320,      255} /* GC,NN,E,U/T,G */
03620      ,{      90,      -175,      -150,      -155,      -210} /* GC,NN,E,U/T,U/T */
03621      }
03622      }
03623      ,{{{      875,      610,      575,      40,      695} /* GC,NN,A,E,E */
03624      ,{      550,      285,      245,      -15,      365} /* GC,NN,A,E,A */
03625      ,{      485,      220,      180,      40,      300} /* GC,NN,A,E,C */
03626      ,{      875,      610,      575,      -80,      695} /* GC,NN,A,E,G */
03627      ,{      420,      155,      115,      -25,      235} /* GC,NN,A,E,U/T */
03628      }
03629      ,{{      490,      225,      185,      -75,      305} /* GC,NN,A,A,E */
03630      ,{      490,      225,      185,      -75,      305} /* GC,NN,A,A,A */
03631      ,{      350,      85,      45,      -215,      165} /* GC,NN,A,A,C */
03632      ,{      -210,      -475,      -515,      -780,      -280} /* GC,NN,A,A,G */
03633      ,{      350,      85,      45,      -215,      165} /* GC,NN,A,A,U/T */
03634      }
03635      ,{{      485,      220,      180,      40,      300} /* GC,NN,A,C,E */
03636      ,{      485,      220,      180,      -80,      300} /* GC,NN,A,C,A */
03637      ,{      485,      220,      180,      40,      300} /* GC,NN,A,C,C */
03638      ,{      485,      220,      180,      -80,      300} /* GC,NN,A,C,G */
03639      ,{      420,      155,      115,      -25,      235} /* GC,NN,A,C,U/T */
03640      }
03641      ,{{      850,      585,      550,      -180,      670} /* GC,NN,A,G,E */
03642      ,{      195,      -375,      75,      -680,      -295} /* GC,NN,A,G,A */
03643      ,{      385,      120,      80,      -180,      200} /* GC,NN,A,G,C */
03644      ,{      850,      585,      550,      -340,      670} /* GC,NN,A,G,G */
03645      ,{      385,      120,      80,      -180,      200} /* GC,NN,A,G,U/T */
03646      }
03647      ,{{      440,      175,      135,      -125,      255} /* GC,NN,A,U/T,E */
03648      ,{      440,      175,      135,      -125,      255} /* GC,NN,A,U/T,A */
03649      ,{      320,      55,      20,      -125,      140} /* GC,NN,A,U/T,C */
03650      ,{      440,      175,      135,      -125,      255} /* GC,NN,A,U/T,G */
03651      ,{      90,      -175,      -150,      -595,      -210} /* GC,NN,A,U/T,U/T */
03652      }
03653      }
03654      ,{{{      650,      385,      420,      440,      385} /* GC,NN,C,E,E */
03655      ,{      485,      60,      365,      115,      60} /* GC,NN,C,E,A */
03656      ,{      260,      -5,      30,      50,      -5} /* GC,NN,C,E,C */
03657      ,{      650,      385,      420,      440,      385} /* GC,NN,C,E,G */

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03658 , { 195, -70, -35, -15, -70} /* GC, NN, C, E, U/T */
03659 }
03660 , { { 265, 0, 35, 55, 0} /* GC, NN, C, A, E */
03661 , { 265, 0, 35, 55, 0} /* GC, NN, C, A, A */
03662 , { 125, -140, -105, -85, -140} /* GC, NN, C, A, C */
03663 , { -20, -285, -435, -535, -470} /* GC, NN, C, A, G */
03664 , { 125, -140, -105, -85, -140} /* GC, NN, C, A, U/T */
03665 }
03666 , { { 260, -5, 30, 50, -5} /* GC, NN, C, C, E */
03667 , { 260, -5, 30, 50, -5} /* GC, NN, C, C, A */
03668 , { 260, -5, 30, 50, -5} /* GC, NN, C, C, C */
03669 , { 260, -5, 30, 50, -5} /* GC, NN, C, C, G */
03670 , { 195, -70, -35, -15, -70} /* GC, NN, C, C, U/T */
03671 }
03672 , { { 625, 360, 395, 415, 360} /* GC, NN, C, G, E */
03673 , { 460, -125, 340, -545, -480} /* GC, NN, C, G, A */
03674 , { 160, -105, -70, -50, -105} /* GC, NN, C, G, C */
03675 , { 625, 360, 395, 415, 360} /* GC, NN, C, G, G */
03676 , { 160, -105, -70, -50, -105} /* GC, NN, C, G, U/T */
03677 }
03678 , { { 215, -50, -15, 5, -50} /* GC, NN, C, U/T, E */
03679 , { 215, -50, -15, 5, -50} /* GC, NN, C, U/T, A */
03680 , { 100, -165, -130, -110, -165} /* GC, NN, C, U/T, C */
03681 , { 215, -50, -15, 5, -50} /* GC, NN, C, U/T, G */
03682 , { -255, -520, -485, -465, -520} /* GC, NN, C, U/T, U/T */
03683 }
03684 }
03685 , { { { 695, -255, 575, 430, 695} /* GC, NN, G, E, E */
03686 , { 640, -310, 245, 430, 365} /* GC, NN, G, E, A */
03687 , { 575, -255, 180, 365, 300} /* GC, NN, G, E, C */
03688 , { 695, -375, 575, 365, 695} /* GC, NN, G, E, G */
03689 , { 510, -320, 115, 300, 235} /* GC, NN, G, E, U/T */
03690 }
03691 , { { 580, -370, 185, 370, 305} /* GC, NN, G, A, E */
03692 , { 580, -370, 185, 370, 305} /* GC, NN, G, A, A */
03693 , { 440, -510, 45, 230, 165} /* GC, NN, G, A, C */
03694 , { -280, -1070, -400, -740, -280} /* GC, NN, G, A, G */
03695 , { 440, -510, 45, 230, 165} /* GC, NN, G, A, U/T */
03696 }
03697 , { { 575, -255, 180, 365, 300} /* GC, NN, G, C, E */
03698 , { 575, -375, 180, 365, 300} /* GC, NN, G, C, A */
03699 , { 575, -255, 180, 365, 300} /* GC, NN, G, C, C */
03700 , { 575, -375, 180, 365, 300} /* GC, NN, G, C, G */
03701 , { 510, -320, 115, 300, 235} /* GC, NN, G, C, U/T */
03702 }
03703 , { { 670, -475, 550, 265, 670} /* GC, NN, G, G, E */
03704 , { -295, -970, -415, -860, -295} /* GC, NN, G, G, A */
03705 , { 475, -475, 80, 265, 200} /* GC, NN, G, G, C */
03706 , { 670, -635, 550, -520, 670} /* GC, NN, G, G, G */
03707 , { 475, -475, 80, 265, 200} /* GC, NN, G, G, U/T */
03708 }
03709 , { { 530, -415, 135, 320, 255} /* GC, NN, G, U/T, E */
03710 , { 530, -420, 135, 320, 255} /* GC, NN, G, U/T, A */
03711 , { 410, -415, 20, 200, 140} /* GC, NN, G, U/T, C */
03712 , { 530, -420, 135, 320, 255} /* GC, NN, G, U/T, G */
03713 , { 55, -855, -330, -155, -210} /* GC, NN, G, U/T, U/T */
03714 }
03715 }
03716 , { { { 650, 385, 420, 440, 340} /* GC, NN, U/T, E, E */
03717 , { 340, 60, 95, 115, 340} /* GC, NN, U/T, E, A */
03718 , { 260, -5, 30, 50, 160} /* GC, NN, U/T, E, C */
03719 , { 650, 385, 420, 440, 160} /* GC, NN, U/T, E, G */
03720 , { 195, -70, -35, -15, 95} /* GC, NN, U/T, E, U/T */
03721 }
03722 , { { 280, 0, 35, 55, 280} /* GC, NN, U/T, A, E */
03723 , { 280, 0, 35, 55, 280} /* GC, NN, U/T, A, A */
03724 , { 125, -140, -105, -85, 25} /* GC, NN, U/T, A, C */
03725 , { -315, -590, -435, -535, -525} /* GC, NN, U/T, A, G */
03726 , { 125, -140, -105, -85, 25} /* GC, NN, U/T, A, U/T */
03727 }
03728 , { { 260, -5, 30, 50, 170} /* GC, NN, U/T, C, E */
03729 , { 260, -5, 30, 50, 170} /* GC, NN, U/T, C, A */
03730 , { 260, -5, 30, 50, 160} /* GC, NN, U/T, C, C */
03731 , { 260, -5, 30, 50, 160} /* GC, NN, U/T, C, G */
03732 , { 195, -70, -35, -15, 95} /* GC, NN, U/T, C, U/T */
03733 }
03734 , { { 625, 360, 395, 415, 60} /* GC, NN, U/T, G, E */
03735 , { -215, -600, -445, -545, -215} /* GC, NN, U/T, G, A */
03736 , { 160, -105, -70, -50, 60} /* GC, NN, U/T, G, C */
03737 , { 625, 360, 395, 415, -100} /* GC, NN, U/T, G, G */
03738 , { 160, -105, -70, -50, 60} /* GC, NN, U/T, G, U/T */
03739 }
03740 , { { 215, -50, -15, 5, 115} /* GC, NN, U/T, U/T, E */
03741 , { 215, -50, -15, 5, 115} /* GC, NN, U/T, U/T, A */
03742 , { 100, -165, -130, -110, -5} /* GC, NN, U/T, U/T, C */
03743 , { 215, -50, -15, 5, 115} /* GC, NN, U/T, U/T, G */
03744 , { -255, -520, -485, -465, -355} /* GC, NN, U/T, U/T, U/T */

```

```

03745     }
03746     }
03747     }
03748     }
03749     ,{{{    INF,    INF,    INF,    INF,    INF} /* GT,NP,E,E,E */
03750     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,E,A */
03751     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,E,C */
03752     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,E,G */
03753     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,E,U/T */
03754     }
03755     ,{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,A,E */
03756     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,A,A */
03757     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,A,C */
03758     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,A,G */
03759     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,A,U/T */
03760     }
03761     ,{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,C,E */
03762     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,C,A */
03763     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,C,C */
03764     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,C,G */
03765     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,C,U/T */
03766     }
03767     ,{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,G,E */
03768     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,G,A */
03769     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,G,C */
03770     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,G,G */
03771     ,{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,G,U/T */
03772     }
03773     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,E,U/T,E */
03774     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,E,U/T,A */
03775     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,E,U/T,C */
03776     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,E,U/T,G */
03777     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,E,U/T,U/T */
03778     }
03779     }
03780     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,A,E,E */
03781     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,E,A */
03782     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,E,C */
03783     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,E,G */
03784     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,E,U/T */
03785     }
03786     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,A,A,E */
03787     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,A,A */
03788     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,A,C */
03789     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,A,G */
03790     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,A,U/T */
03791     }
03792     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,A,C,E */
03793     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,C,A */
03794     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,C,C */
03795     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,C,G */
03796     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,C,U/T */
03797     }
03798     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,A,G,E */
03799     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,G,A */
03800     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,G,C */
03801     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,G,G */
03802     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,G,U/T */
03803     }
03804     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,A,U/T,E */
03805     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,U/T,A */
03806     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,U/T,C */
03807     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,U/T,G */
03808     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,A,U/T,U/T */
03809     }
03810     }
03811     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,C,E,E */
03812     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,E,A */
03813     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,E,C */
03814     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,E,G */
03815     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,E,U/T */
03816     }
03817     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,C,A,E */
03818     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,A,A */
03819     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,A,C */
03820     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,A,G */
03821     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,A,U/T */
03822     }
03823     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,C,C,E */
03824     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,C,A */
03825     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,C,C */
03826     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,C,G */
03827     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,C,U/T */
03828     }
03829     ,{{{      INF,    INF,    INF,    INF,    INF} /* GT,NP,C,G,E */
03830     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,G,A */
03831     ,{        INF,    INF,    INF,    INF,    INF} /* GT,NP,C,G,C */

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```

03832      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,C,G,G */
03833      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,C,G,U/T */
03834      }
03835      , {{      INF,      INF,      INF,      INF,      INF} /* GT,NP,C,U/T,E */
03836      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,C,U/T,A */
03837      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,C,U/T,C */
03838      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,C,U/T,G */
03839      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,C,U/T,U/T */
03840      }
03841      }
03842      , {{{      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,E,E */
03843      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,E,A */
03844      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,E,C */
03845      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,E,G */
03846      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,E,U/T */
03847      }
03848      , {{      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,A,E */
03849      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,A,A */
03850      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,A,C */
03851      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,A,G */
03852      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,A,U/T */
03853      }
03854      , {{      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,C,E */
03855      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,C,A */
03856      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,C,C */
03857      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,C,G */
03858      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,C,U/T */
03859      }
03860      , {{      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,G,E */
03861      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,G,A */
03862      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,G,C */
03863      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,G,G */
03864      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,G,U/T */
03865      }
03866      , {{      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,U/T,E */
03867      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,U/T,A */
03868      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,U/T,C */
03869      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,U/T,G */
03870      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,G,U/T,U/T */
03871      }
03872      }
03873      , {{{      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,E,E */
03874      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,E,A */
03875      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,E,C */
03876      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,E,G */
03877      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,E,U/T */
03878      }
03879      , {{      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,A,E */
03880      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,A,A */
03881      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,A,C */
03882      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,A,G */
03883      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,A,U/T */
03884      }
03885      , {{{      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,C,E */
03886      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,C,A */
03887      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,C,C */
03888      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,C,G */
03889      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,C,U/T */
03890      }
03891      , {{{      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,G,E */
03892      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,G,A */
03893      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,G,C */
03894      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,G,G */
03895      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,G,U/T */
03896      }
03897      , {{      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,U/T,E */
03898      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,U/T,A */
03899      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,U/T,C */
03900      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,U/T,G */
03901      , {      INF,      INF,      INF,      INF,      INF} /* GT,NP,U/T,U/T,U/T */
03902      }
03903      }
03904      }
03905      , {{{      25,      -750,      -650,      -185,      -530} /* GT,CG,E,E,E */
03906      , {      0,      -890,      -745,      -210,      -580} /* GT,CG,E,E,A */
03907      , {      25,      -750,      -720,      -185,      -600} /* GT,CG,E,E,C */
03908      , {      0,      -795,      -650,      -210,      -530} /* GT,CG,E,E,G */
03909      , {      -30,      -805,      -775,      -240,      -655} /* GT,CG,E,E,U/T */
03910      }
03911      , {{      -95,      -985,      -825,      -305,      -600} /* GT,CG,E,A,E */
03912      , {      -95,      -985,      -840,      -305,      -600} /* GT,CG,E,A,A */
03913      , {      -250,      -1140,      -995,      -460,      -875} /* GT,CG,E,A,C */
03914      , {      -705,      -1090,      -825,      -950,      -705} /* GT,CG,E,A,G */
03915      , {      -250,      -1140,      -995,      -460,      -875} /* GT,CG,E,A,U/T */
03916      }
03917      , {{{      0,      -780,      -745,      -210,      -625} /* GT,CG,E,C,E */
03918      , {      0,      -890,      -745,      -210,      -625} /* GT,CG,E,C,A */

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03919 , { -5, -780, -750, -215, -630} /* GT,CG,E,C,C */
03920 , { 0, -890, -745, -210, -625} /* GT,CG,E,C,G */
03921 , { -30, -805, -775, -240, -655} /* GT,CG,E,C,U/T */
03922 }
03923 , {{ -255, -820, -675, -465, -555} /* GT,CG,E,G,E */
03924 , { -855, -1240, -975, -1095, -855} /* GT,CG,E,G,A */
03925 , { -255, -1145, -1000, -465, -880} /* GT,CG,E,G,C */
03926 , { -555, -820, -675, -765, -555} /* GT,CG,E,G,G */
03927 , { -255, -1145, -1000, -465, -880} /* GT,CG,E,G,U/T */
03928 }
03929 , {{ -15, -790, -760, -225, -640} /* GT,CG,E,U/T,E */
03930 , { -40, -930, -785, -250, -665} /* GT,CG,E,U/T,A */
03931 , { -15, -790, -760, -225, -640} /* GT,CG,E,U/T,C */
03932 , { -40, -930, -785, -250, -665} /* GT,CG,E,U/T,G */
03933 , { -975, -1295, -1180, -1185, -1060} /* GT,CG,E,U/T,U/T */
03934 }
03935 }
03936 , {{{ -390, -885, -650, -600, -530} /* GT,CG,A,E,E */
03937 , { -540, -980, -745, -750, -625} /* GT,CG,A,E,A */
03938 , { -390, -955, -720, -600, -600} /* GT,CG,A,E,C */
03939 , { -530, -885, -650, -750, -530} /* GT,CG,A,E,G */
03940 , { -445, -1010, -775, -655, -655} /* GT,CG,A,E,U/T */
03941 }
03942 , {{ -630, -1065, -840, -840, -720} /* GT,CG,A,A,E */
03943 , { -630, -1065, -840, -840, -720} /* GT,CG,A,A,A */
03944 , { -785, -1230, -995, -995, -875} /* GT,CG,A,A,C */
03945 , { -740, -1180, -945, -950, -825} /* GT,CG,A,A,G */
03946 , { -785, -1230, -995, -995, -875} /* GT,CG,A,A,U/T */
03947 }
03948 , {{{ -420, -980, -745, -630, -625} /* GT,CG,A,C,E */
03949 , { -540, -980, -745, -750, -625} /* GT,CG,A,C,A */
03950 , { -420, -985, -750, -630, -630} /* GT,CG,A,C,C */
03951 , { -540, -980, -745, -750, -625} /* GT,CG,A,C,G */
03952 , { -445, -1010, -775, -655, -655} /* GT,CG,A,C,U/T */
03953 }
03954 , {{{ -555, -910, -675, -1000, -555} /* GT,CG,A,G,E */
03955 , { -885, -1330, -1095, -1095, -975} /* GT,CG,A,G,A */
03956 , { -790, -1235, -1000, -1000, -880} /* GT,CG,A,G,C */
03957 , { -555, -910, -675, -1300, -555} /* GT,CG,A,G,G */
03958 , { -790, -1235, -1000, -1000, -880} /* GT,CG,A,G,U/T */
03959 }
03960 , {{{ -430, -995, -760, -640, -640} /* GT,CG,A,U/T,E */
03961 , { -580, -1020, -785, -790, -665} /* GT,CG,A,U/T,A */
03962 , { -430, -995, -760, -640, -640} /* GT,CG,A,U/T,C */
03963 , { -580, -1020, -785, -790, -665} /* GT,CG,A,U/T,G */
03964 , { -975, -1295, -1180, -1185, -1060} /* GT,CG,A,U/T,U/T */
03965 }
03966 }
03967 , {{{ -530, -795, -650, -740, -530} /* GT,CG,C,E,E */
03968 , { -625, -890, -745, -835, -625} /* GT,CG,C,E,A */
03969 , { -600, -865, -720, -810, -600} /* GT,CG,C,E,C */
03970 , { -530, -795, -650, -740, -530} /* GT,CG,C,E,G */
03971 , { -655, -920, -775, -865, -655} /* GT,CG,C,E,U/T */
03972 }
03973 , {{{ -705, -985, -825, -930, -705} /* GT,CG,C,A,E */
03974 , { -720, -985, -840, -930, -720} /* GT,CG,C,A,A */
03975 , { -875, -1140, -995, -1085, -875} /* GT,CG,C,A,C */
03976 , { -705, -1090, -825, -1035, -705} /* GT,CG,C,A,G */
03977 , { -875, -1140, -995, -1085, -875} /* GT,CG,C,A,U/T */
03978 }
03979 , {{{ -625, -890, -745, -835, -625} /* GT,CG,C,C,E */
03980 , { -625, -890, -745, -835, -625} /* GT,CG,C,C,A */
03981 , { -630, -895, -750, -840, -630} /* GT,CG,C,C,C */
03982 , { -625, -890, -745, -835, -625} /* GT,CG,C,C,G */
03983 , { -655, -920, -775, -865, -655} /* GT,CG,C,C,U/T */
03984 }
03985 , {{{ -555, -820, -675, -765, -555} /* GT,CG,C,G,E */
03986 , { -855, -1240, -975, -1185, -855} /* GT,CG,C,G,A */
03987 , { -880, -1145, -1000, -1090, -880} /* GT,CG,C,G,C */
03988 , { -555, -820, -675, -765, -555} /* GT,CG,C,G,G */
03989 , { -880, -1145, -1000, -1090, -880} /* GT,CG,C,G,U/T */
03990 }
03991 , {{{ -640, -905, -760, -850, -640} /* GT,CG,C,U/T,E */
03992 , { -665, -930, -785, -875, -665} /* GT,CG,C,U/T,A */
03993 , { -640, -905, -760, -850, -640} /* GT,CG,C,U/T,C */
03994 , { -665, -930, -785, -875, -665} /* GT,CG,C,U/T,G */
03995 , { -1060, -1325, -1180, -1270, -1060} /* GT,CG,C,U/T,U/T */
03996 }
03997 }
03998 , {{{ 25, -750, -650, -185, -530} /* GT,CG,G,E,E */
03999 , { 0, -900, -745, -210, -625} /* GT,CG,G,E,A */
04000 , { 25, -750, -720, -185, -600} /* GT,CG,G,E,C */
04001 , { 0, -900, -650, -210, -530} /* GT,CG,G,E,G */
04002 , { -30, -805, -775, -240, -655} /* GT,CG,G,E,U/T */
04003 }
04004 , {{{ -95, -990, -840, -305, -720} /* GT,CG,G,A,E */
04005 , { -95, -990, -840, -305, -720} /* GT,CG,G,A,A */

```

```
04006 , { -250, -1145, -995, -460, -875} /* GT,CG,G,A,C */
04007 , { -825, -1100, -945, -1035, -825} /* GT,CG,G,A,G */
04008 , { -250, -1145, -995, -460, -875} /* GT,CG,G,A,U/T */
04009 }
04010 , { { 0, -780, -745, -210, -625} /* GT,CG,G,C,E */
04011 , { 0, -900, -745, -210, -625} /* GT,CG,G,C,A */
04012 , { -5, -780, -750, -215, -630} /* GT,CG,G,C,C */
04013 , { 0, -900, -745, -210, -625} /* GT,CG,G,C,G */
04014 , { -30, -805, -775, -240, -655} /* GT,CG,G,C,U/T */
04015 }
04016 , { { -255, -1150, -675, -465, -555} /* GT,CG,G,G,E */
04017 , { -975, -1245, -1095, -1185, -975} /* GT,CG,G,G,A */
04018 , { -255, -1150, -1000, -465, -880} /* GT,CG,G,G,C */
04019 , { -555, -1450, -675, -1390, -555} /* GT,CG,G,G,G */
04020 , { -255, -1150, -1000, -465, -880} /* GT,CG,G,G,U/T */
04021 }
04022 , { { -15, -790, -760, -225, -640} /* GT,CG,G,U/T,E */
04023 , { -40, -940, -785, -250, -665} /* GT,CG,G,U/T,A */
04024 , { -15, -790, -760, -225, -640} /* GT,CG,G,U/T,C */
04025 , { -40, -940, -785, -250, -665} /* GT,CG,G,U/T,G */
04026 , { -1060, -1335, -1180, -1270, -1060} /* GT,CG,G,U/T,U/T */
04027 }
04028 }
04029 , { { { -530, -795, -650, -740, -580} /* GT,CG,U/T,E,E */
04030 , { -580, -890, -745, -835, -580} /* GT,CG,U/T,E,A */
04031 , { -600, -865, -720, -810, -600} /* GT,CG,U/T,E,C */
04032 , { -530, -795, -650, -740, -625} /* GT,CG,U/T,E,G */
04033 , { -655, -920, -775, -865, -655} /* GT,CG,U/T,E,U/T */
04034 }
04035 , { { -600, -985, -825, -930, -600} /* GT,CG,U/T,A,E */
04036 , { -600, -985, -840, -930, -600} /* GT,CG,U/T,A,A */
04037 , { -875, -1140, -995, -1085, -875} /* GT,CG,U/T,A,C */
04038 , { -705, -1090, -825, -1035, -825} /* GT,CG,U/T,A,G */
04039 , { -875, -1140, -995, -1085, -875} /* GT,CG,U/T,A,U/T */
04040 }
04041 , { { -625, -890, -745, -835, -625} /* GT,CG,U/T,C,E */
04042 , { -625, -890, -745, -835, -625} /* GT,CG,U/T,C,A */
04043 , { -630, -895, -750, -840, -630} /* GT,CG,U/T,C,C */
04044 , { -625, -890, -745, -835, -625} /* GT,CG,U/T,C,G */
04045 , { -655, -920, -775, -865, -655} /* GT,CG,U/T,C,U/T */
04046 }
04047 , { { -555, -820, -675, -765, -880} /* GT,CG,U/T,G,E */
04048 , { -855, -1240, -975, -1185, -975} /* GT,CG,U/T,G,A */
04049 , { -880, -1145, -1000, -1090, -880} /* GT,CG,U/T,G,C */
04050 , { -555, -820, -675, -765, -1180} /* GT,CG,U/T,G,G */
04051 , { -880, -1145, -1000, -1090, -880} /* GT,CG,U/T,G,U/T */
04052 }
04053 , { { -640, -905, -760, -850, -640} /* GT,CG,U/T,U/T,E */
04054 , { -665, -930, -785, -875, -665} /* GT,CG,U/T,U/T,A */
04055 , { -640, -905, -760, -850, -640} /* GT,CG,U/T,U/T,C */
04056 , { -665, -930, -785, -875, -665} /* GT,CG,U/T,U/T,G */
04057 , { -1060, -1325, -1180, -1270, -1060} /* GT,CG,U/T,U/T,U/T */
04058 }
04059 }
04060 }
04061 , { { { { 175, -630, -485, -35, -330} /* GT,GC,E,E,E */
04062 , { 175, -715, -570, -35, -330} /* GT,GC,E,E,A */
04063 , { -50, -940, -795, -260, -675} /* GT,GC,E,E,C */
04064 , { -10, -630, -485, -220, -365} /* GT,GC,E,E,G */
04065 , { -50, -940, -795, -260, -675} /* GT,GC,E,E,U/T */
04066 }
04067 , { { -90, -980, -835, -300, -595} /* GT,GC,E,A,E */
04068 , { -90, -980, -835, -300, -595} /* GT,GC,E,A,A */
04069 , { -315, -1205, -1060, -525, -940} /* GT,GC,E,A,C */
04070 , { -1190, -1575, -1310, -1435, -1190} /* GT,GC,E,A,G */
04071 , { -315, -1205, -1060, -525, -940} /* GT,GC,E,A,U/T */
04072 }
04073 , { { -130, -1020, -875, -340, -755} /* GT,GC,E,C,E */
04074 , { -130, -1020, -875, -340, -755} /* GT,GC,E,C,A */
04075 , { -280, -1060, -1025, -490, -905} /* GT,GC,E,C,C */
04076 , { -130, -1020, -875, -340, -755} /* GT,GC,E,C,G */
04077 , { -280, -1060, -1025, -490, -905} /* GT,GC,E,C,U/T */
04078 }
04079 , { { -260, -840, -695, -470, -575} /* GT,GC,E,G,E */
04080 , { -900, -1285, -1020, -1140, -900} /* GT,GC,E,G,A */
04081 , { -260, -1150, -1005, -470, -885} /* GT,GC,E,G,C */
04082 , { -575, -840, -695, -785, -575} /* GT,GC,E,G,G */
04083 , { -260, -1150, -1005, -470, -885} /* GT,GC,E,G,U/T */
04084 }
04085 , { { -10, -900, -755, -220, -635} /* GT,GC,E,U/T,E */
04086 , { -10, -900, -755, -220, -635} /* GT,GC,E,U/T,A */
04087 , { -315, -1095, -1060, -525, -940} /* GT,GC,E,U/T,C */
04088 , { -10, -900, -755, -220, -635} /* GT,GC,E,U/T,G */
04089 , { -690, -1015, -900, -900, -780} /* GT,GC,E,U/T,U/T */
04090 }
04091 }
04092 , { { { -365, -720, -485, -575, -365} /* GT,GC,A,E,E */
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04093 , { -365, -805, -570, -575, -450} /* GT,GC,A,E,A */
04094 , { -580, -1030, -795, -790, -675} /* GT,GC,A,E,C */
04095 , { -365, -720, -485, -755, -365} /* GT,GC,A,E,G */
04096 , { -580, -1015, -795, -790, -675} /* GT,GC,A,E,U/T */
04097 }
04098 , { { -630, -1070, -835, -840, -715} /* GT,GC,A,A,E */
04099 , { -630, -1070, -835, -840, -715} /* GT,GC,A,A,A */
04100 , { -855, -1295, -1060, -1065, -940} /* GT,GC,A,A,C */
04101 , { -1225, -1665, -1430, -1435, -1310} /* GT,GC,A,A,G */
04102 , { -855, -1295, -1060, -1065, -940} /* GT,GC,A,A,U/T */
04103 }
04104 , { { -665, -1110, -875, -875, -755} /* GT,GC,A,C,E */
04105 , { -665, -1110, -875, -875, -755} /* GT,GC,A,C,A */
04106 , { -700, -1260, -1025, -910, -905} /* GT,GC,A,C,C */
04107 , { -665, -1110, -875, -875, -755} /* GT,GC,A,C,G */
04108 , { -700, -1260, -1025, -910, -905} /* GT,GC,A,C,U/T */
04109 }
04110 , { { -575, -930, -695, -1010, -575} /* GT,GC,A,G,E */
04111 , { -930, -1375, -1140, -1140, -1020} /* GT,GC,A,G,A */
04112 , { -800, -1240, -1005, -1010, -885} /* GT,GC,A,G,C */
04113 , { -575, -930, -695, -1320, -575} /* GT,GC,A,G,G */
04114 , { -800, -1240, -1005, -1010, -885} /* GT,GC,A,G,U/T */
04115 }
04116 , { { -545, -990, -755, -755, -635} /* GT,GC,A,U/T,E */
04117 , { -545, -990, -755, -755, -635} /* GT,GC,A,U/T,A */
04118 , { -735, -1295, -1060, -945, -940} /* GT,GC,A,U/T,C */
04119 , { -545, -990, -755, -755, -635} /* GT,GC,A,U/T,G */
04120 , { -690, -1015, -900, -900, -780} /* GT,GC,A,U/T,U/T */
04121 }
04122 }
04123 , { { { -365, -630, -485, -575, -365} /* GT,GC,C,E,E */
04124 , { -450, -715, -570, -660, -450} /* GT,GC,C,E,A */
04125 , { -675, -940, -795, -885, -675} /* GT,GC,C,E,C */
04126 , { -365, -630, -485, -575, -365} /* GT,GC,C,E,G */
04127 , { -675, -940, -795, -885, -675} /* GT,GC,C,E,U/T */
04128 }
04129 , { { -715, -980, -835, -925, -715} /* GT,GC,C,A,E */
04130 , { -715, -980, -835, -925, -715} /* GT,GC,C,A,A */
04131 , { -940, -1205, -1060, -1150, -940} /* GT,GC,C,A,C */
04132 , { -1190, -1575, -1310, -1520, -1190} /* GT,GC,C,A,G */
04133 , { -940, -1205, -1060, -1150, -940} /* GT,GC,C,A,U/T */
04134 }
04135 , { { -755, -1020, -875, -965, -755} /* GT,GC,C,C,E */
04136 , { -755, -1020, -875, -965, -755} /* GT,GC,C,C,A */
04137 , { -905, -1170, -1025, -1115, -905} /* GT,GC,C,C,C */
04138 , { -755, -1020, -875, -965, -755} /* GT,GC,C,C,G */
04139 , { -905, -1170, -1025, -1115, -905} /* GT,GC,C,C,U/T */
04140 }
04141 , { { -575, -840, -695, -785, -575} /* GT,GC,C,G,E */
04142 , { -900, -1285, -1020, -1230, -900} /* GT,GC,C,G,A */
04143 , { -885, -1150, -1005, -1095, -885} /* GT,GC,C,G,C */
04144 , { -575, -840, -695, -785, -575} /* GT,GC,C,G,G */
04145 , { -885, -1150, -1005, -1095, -885} /* GT,GC,C,G,U/T */
04146 }
04147 , { { -635, -900, -755, -845, -635} /* GT,GC,C,U/T,E */
04148 , { -635, -900, -755, -845, -635} /* GT,GC,C,U/T,A */
04149 , { -940, -1205, -1060, -1150, -940} /* GT,GC,C,U/T,C */
04150 , { -635, -900, -755, -845, -635} /* GT,GC,C,U/T,G */
04151 , { -780, -1045, -900, -990, -780} /* GT,GC,C,U/T,U/T */
04152 }
04153 }
04154 , { { { 175, -725, -485, -35, -365} /* GT,GC,G,E,E */
04155 , { 175, -725, -570, -35, -450} /* GT,GC,G,E,A */
04156 , { -50, -940, -795, -260, -675} /* GT,GC,G,E,C */
04157 , { -10, -905, -485, -220, -365} /* GT,GC,G,E,G */
04158 , { -50, -940, -795, -260, -675} /* GT,GC,G,E,U/T */
04159 }
04160 , { { -90, -990, -835, -300, -715} /* GT,GC,G,A,E */
04161 , { -90, -990, -835, -300, -715} /* GT,GC,G,A,A */
04162 , { -315, -1215, -1060, -525, -940} /* GT,GC,G,A,C */
04163 , { -1310, -1585, -1430, -1520, -1310} /* GT,GC,G,A,G */
04164 , { -315, -1215, -1060, -525, -940} /* GT,GC,G,A,U/T */
04165 }
04166 , { { -130, -1025, -875, -340, -755} /* GT,GC,G,C,E */
04167 , { -130, -1025, -875, -340, -755} /* GT,GC,G,C,A */
04168 , { -280, -1060, -1025, -490, -905} /* GT,GC,G,C,C */
04169 , { -130, -1025, -875, -340, -755} /* GT,GC,G,C,G */
04170 , { -280, -1060, -1025, -490, -905} /* GT,GC,G,C,U/T */
04171 }
04172 , { { -260, -1160, -695, -470, -575} /* GT,GC,G,G,E */
04173 , { -1020, -1290, -1140, -1230, -1020} /* GT,GC,G,G,A */
04174 , { -260, -1160, -1005, -470, -885} /* GT,GC,G,G,C */
04175 , { -575, -1470, -695, -1410, -575} /* GT,GC,G,G,G */
04176 , { -260, -1160, -1005, -470, -885} /* GT,GC,G,G,U/T */
04177 }
04178 , { { -10, -905, -755, -220, -635} /* GT,GC,G,U/T,E */
04179 , { -10, -905, -755, -220, -635} /* GT,GC,G,U/T,A */

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04180 , { -315, -1095, -1060, -525, -940} /* GT,GC,G,U/T,C */
04181 , { -10, -905, -755, -220, -635} /* GT,GC,G,U/T,G */
04182 , { -780, -1050, -900, -990, -780} /* GT,GC,G,U/T,U/T */
04183 }
04184 }
04185 , {{ { -330, -630, -485, -575, -330} /* GT,GC,U/T,E,E */
04186 , { -330, -715, -570, -660, -330} /* GT,GC,U/T,E,A */
04187 , { -675, -940, -795, -885, -675} /* GT,GC,U/T,E,C */
04188 , { -365, -630, -485, -575, -635} /* GT,GC,U/T,E,G */
04189 , { -675, -940, -795, -885, -675} /* GT,GC,U/T,E,U/T */
04190 }
04191 , {{ { -595, -980, -835, -925, -595} /* GT,GC,U/T,A,E */
04192 , { -595, -980, -835, -925, -595} /* GT,GC,U/T,A,A */
04193 , { -940, -1205, -1060, -1150, -940} /* GT,GC,U/T,A,C */
04194 , { -1190, -1575, -1310, -1520, -1310} /* GT,GC,U/T,A,G */
04195 , { -940, -1205, -1060, -1150, -940} /* GT,GC,U/T,A,U/T */
04196 }
04197 , {{ { -755, -1020, -875, -965, -755} /* GT,GC,U/T,C,E */
04198 , { -755, -1020, -875, -965, -755} /* GT,GC,U/T,C,A */
04199 , { -905, -1170, -1025, -1115, -905} /* GT,GC,U/T,C,C */
04200 , { -755, -1020, -875, -965, -755} /* GT,GC,U/T,C,G */
04201 , { -905, -1170, -1025, -1115, -905} /* GT,GC,U/T,C,U/T */
04202 }
04203 , {{ { -575, -840, -695, -785, -885} /* GT,GC,U/T,G,E */
04204 , { -900, -1285, -1020, -1230, -1020} /* GT,GC,U/T,G,A */
04205 , { -885, -1150, -1005, -1095, -885} /* GT,GC,U/T,G,C */
04206 , { -575, -840, -695, -785, -1200} /* GT,GC,U/T,G,G */
04207 , { -885, -1150, -1005, -1095, -885} /* GT,GC,U/T,G,U/T */
04208 }
04209 , {{ { -635, -900, -755, -845, -635} /* GT,GC,U/T,U/T,E */
04210 , { -635, -900, -755, -845, -635} /* GT,GC,U/T,U/T,A */
04211 , { -940, -1205, -1060, -1150, -940} /* GT,GC,U/T,U/T,C */
04212 , { -635, -900, -755, -845, -635} /* GT,GC,U/T,U/T,G */
04213 , { -780, -1045, -900, -990, -780} /* GT,GC,U/T,U/T,U/T */
04214 }
04215 }
04216 }
04217 , {{{ { -125, -390, -245, -335, -125} /* GT,GT,E,E,E */
04218 , { -125, -925, -660, -335, -540} /* GT,GT,E,E,A */
04219 , { -125, -900, -870, -335, -750} /* GT,GT,E,E,C */
04220 , { -125, -390, -245, -335, -125} /* GT,GT,E,E,G */
04221 , { -125, -900, -870, -335, -750} /* GT,GT,E,E,U/T */
04222 }
04223 , {{ { -390, -1280, -1020, -600, -900} /* GT,GT,E,A,E */
04224 , { -480, -1370, -1225, -690, -985} /* GT,GT,E,A,A */
04225 , { -390, -1280, -1135, -600, -1015} /* GT,GT,E,A,C */
04226 , { -900, -1285, -1020, -1145, -900} /* GT,GT,E,A,G */
04227 , { -390, -1280, -1135, -600, -1015} /* GT,GT,E,A,U/T */
04228 }
04229 , {{ { -245, -1020, -990, -455, -870} /* GT,GT,E,C,E */
04230 , { -245, -1135, -990, -455, -870} /* GT,GT,E,C,A */
04231 , { -245, -1020, -990, -455, -870} /* GT,GT,E,C,C */
04232 , { -245, -1135, -990, -455, -870} /* GT,GT,E,C,G */
04233 , { -245, -1020, -990, -455, -870} /* GT,GT,E,C,U/T */
04234 }
04235 , {{ { -335, -600, -455, -545, -335} /* GT,GT,E,G,E */
04236 , { -750, -1135, -870, -995, -750} /* GT,GT,E,G,A */
04237 , { -335, -1225, -1080, -545, -960} /* GT,GT,E,G,C */
04238 , { -335, -600, -455, -545, -335} /* GT,GT,E,G,G */
04239 , { -335, -1225, -1080, -545, -960} /* GT,GT,E,G,U/T */
04240 }
04241 , {{ { -125, -900, -870, -335, -750} /* GT,GT,E,U/T,E */
04242 , { -125, -1015, -870, -335, -750} /* GT,GT,E,U/T,A */
04243 , { -125, -900, -870, -335, -750} /* GT,GT,E,U/T,C */
04244 , { -125, -1015, -870, -335, -750} /* GT,GT,E,U/T,G */
04245 , { -660, -985, -870, -870, -750} /* GT,GT,E,U/T,U/T */
04246 }
04247 }
04248 , {{{ { -125, -480, -245, -750, -125} /* GT,GT,A,E,E */
04249 , { -575, -1015, -780, -785, -660} /* GT,GT,A,E,A */
04250 , { -540, -1105, -870, -750, -750} /* GT,GT,A,E,C */
04251 , { -125, -480, -245, -870, -125} /* GT,GT,A,E,G */
04252 , { -540, -985, -870, -750, -750} /* GT,GT,A,E,U/T */
04253 }
04254 , {{ { -925, -1370, -1135, -1135, -1015} /* GT,GT,A,A,E */
04255 , { -1015, -1460, -1225, -1225, -1105} /* GT,GT,A,A,A */
04256 , { -925, -1370, -1135, -1135, -1015} /* GT,GT,A,A,C */
04257 , { -935, -1375, -1140, -1145, -1020} /* GT,GT,A,A,G */
04258 , { -925, -1370, -1135, -1135, -1015} /* GT,GT,A,A,U/T */
04259 }
04260 , {{ { -660, -1225, -990, -870, -870} /* GT,GT,A,C,E */
04261 , { -780, -1225, -990, -990, -870} /* GT,GT,A,C,A */
04262 , { -660, -1225, -990, -870, -870} /* GT,GT,A,C,C */
04263 , { -780, -1225, -990, -990, -870} /* GT,GT,A,C,G */
04264 , { -660, -1225, -990, -870, -870} /* GT,GT,A,C,U/T */
04265 }
04266 , {{ { -335, -690, -455, -995, -335} /* GT,GT,A,G,E */
```

```

04267 , { -785, -1225, -990, -995, -870} /* GT,GT,A,G,A */
04268 , { -870, -1315, -1080, -1080, -960} /* GT,GT,A,G,C */
04269 , { -335, -690, -455, -1080, -335} /* GT,GT,A,G,G */
04270 , { -870, -1315, -1080, -1080, -960} /* GT,GT,A,G,U/T */
04271 }
04272 , { { -540, -985, -870, -750, -750} /* GT,GT,A,U/T,E */
04273 , { -660, -1105, -870, -870, -750} /* GT,GT,A,U/T,A */
04274 , { -540, -1105, -870, -750, -750} /* GT,GT,A,U/T,C */
04275 , { -660, -1105, -870, -870, -750} /* GT,GT,A,U/T,G */
04276 , { -660, -985, -870, -870, -750} /* GT,GT,A,U/T,U/T */
04277 }
04278 }
04279 , { { { -125, -390, -245, -335, -125} /* GT,GT,C,E,E */
04280 , { -540, -925, -660, -870, -540} /* GT,GT,C,E,A */
04281 , { -750, -1015, -870, -960, -750} /* GT,GT,C,E,C */
04282 , { -125, -390, -245, -335, -125} /* GT,GT,C,E,G */
04283 , { -750, -1015, -870, -960, -750} /* GT,GT,C,E,U/T */
04284 }
04285 , { { -900, -1280, -1020, -1225, -900} /* GT,GT,C,A,E */
04286 , { -1105, -1370, -1225, -1315, -1105} /* GT,GT,C,A,A */
04287 , { -1015, -1280, -1135, -1225, -1015} /* GT,GT,C,A,C */
04288 , { -900, -1285, -1020, -1230, -900} /* GT,GT,C,A,G */
04289 , { -1015, -1280, -1135, -1225, -1015} /* GT,GT,C,A,U/T */
04290 }
04291 , { { -870, -1135, -990, -1080, -870} /* GT,GT,C,C,E */
04292 , { -870, -1135, -990, -1080, -870} /* GT,GT,C,C,A */
04293 , { -870, -1135, -990, -1080, -870} /* GT,GT,C,C,C */
04294 , { -870, -1135, -990, -1080, -870} /* GT,GT,C,C,G */
04295 , { -870, -1135, -990, -1080, -870} /* GT,GT,C,C,U/T */
04296 }
04297 , { { -335, -600, -455, -545, -335} /* GT,GT,C,G,E */
04298 , { -750, -1135, -870, -1080, -750} /* GT,GT,C,G,A */
04299 , { -960, -1225, -1080, -1170, -960} /* GT,GT,C,G,C */
04300 , { -335, -600, -455, -545, -335} /* GT,GT,C,G,G */
04301 , { -960, -1225, -1080, -1170, -960} /* GT,GT,C,G,U/T */
04302 }
04303 , { { -750, -1015, -870, -960, -750} /* GT,GT,C,U/T,E */
04304 , { -750, -1015, -870, -960, -750} /* GT,GT,C,U/T,A */
04305 , { -750, -1015, -870, -960, -750} /* GT,GT,C,U/T,C */
04306 , { -750, -1015, -870, -960, -750} /* GT,GT,C,U/T,G */
04307 , { -750, -1015, -870, -960, -750} /* GT,GT,C,U/T,U/T */
04308 }
04309 }
04310 , { { { -125, -900, -245, -335, -125} /* GT,GT,G,E,E */
04311 , { -125, -935, -780, -335, -660} /* GT,GT,G,E,A */
04312 , { -125, -900, -870, -335, -750} /* GT,GT,G,E,C */
04313 , { -125, -1020, -245, -335, -125} /* GT,GT,G,E,G */
04314 , { -125, -900, -870, -335, -750} /* GT,GT,G,E,U/T */
04315 }
04316 , { { -390, -1285, -1135, -600, -1015} /* GT,GT,G,A,E */
04317 , { -480, -1375, -1225, -690, -1105} /* GT,GT,G,A,A */
04318 , { -390, -1285, -1135, -600, -1015} /* GT,GT,G,A,C */
04319 , { -1020, -1295, -1140, -1230, -1020} /* GT,GT,G,A,G */
04320 , { -390, -1285, -1135, -600, -1015} /* GT,GT,G,A,U/T */
04321 }
04322 , { { -245, -1020, -990, -455, -870} /* GT,GT,G,C,E */
04323 , { -245, -1140, -990, -455, -870} /* GT,GT,G,C,A */
04324 , { -245, -1020, -990, -455, -870} /* GT,GT,G,C,C */
04325 , { -245, -1140, -990, -455, -870} /* GT,GT,G,C,G */
04326 , { -245, -1020, -990, -455, -870} /* GT,GT,G,C,U/T */
04327 }
04328 , { { -335, -1145, -455, -545, -335} /* GT,GT,G,G,E */
04329 , { -870, -1145, -990, -1080, -870} /* GT,GT,G,G,A */
04330 , { -335, -1230, -1080, -545, -960} /* GT,GT,G,G,C */
04331 , { -335, -1230, -455, -1170, -335} /* GT,GT,G,G,G */
04332 , { -335, -1230, -1080, -545, -960} /* GT,GT,G,G,U/T */
04333 }
04334 , { { -125, -900, -870, -335, -750} /* GT,GT,G,U/T,E */
04335 , { -125, -1020, -870, -335, -750} /* GT,GT,G,U/T,A */
04336 , { -125, -900, -870, -335, -750} /* GT,GT,G,U/T,C */
04337 , { -125, -1020, -870, -335, -750} /* GT,GT,G,U/T,G */
04338 , { -750, -1020, -870, -960, -750} /* GT,GT,G,U/T,U/T */
04339 }
04340 }
04341 , { { { -125, -390, -245, -335, -660} /* GT,GT,U/T,E,E */
04342 , { -540, -925, -660, -870, -660} /* GT,GT,U/T,E,A */
04343 , { -750, -1015, -870, -960, -750} /* GT,GT,U/T,E,C */
04344 , { -125, -390, -245, -335, -750} /* GT,GT,U/T,E,G */
04345 , { -750, -1015, -870, -960, -750} /* GT,GT,U/T,E,U/T */
04346 }
04347 , { { -900, -1280, -1020, -1225, -985} /* GT,GT,U/T,A,E */
04348 , { -985, -1370, -1225, -1315, -985} /* GT,GT,U/T,A,A */
04349 , { -1015, -1280, -1135, -1225, -1015} /* GT,GT,U/T,A,C */
04350 , { -900, -1285, -1020, -1230, -1020} /* GT,GT,U/T,A,G */
04351 , { -1015, -1280, -1135, -1225, -1015} /* GT,GT,U/T,A,U/T */
04352 }
04353 , { { -870, -1135, -990, -1080, -870} /* GT,GT,U/T,C,E */

```

```

04354      , { -870, -1135, -990, -1080, -870} /* GT,GT,U/T,C,A */
04355      , { -870, -1135, -990, -1080, -870} /* GT,GT,U/T,C,C */
04356      , { -870, -1135, -990, -1080, -870} /* GT,GT,U/T,C,G */
04357      , { -870, -1135, -990, -1080, -870} /* GT,GT,U/T,C,U/T */
04358      }
04359      , { { -335, -600, -455, -545, -870} /* GT,GT,U/T,G,E */
04360      , { -750, -1135, -870, -1080, -870} /* GT,GT,U/T,G,A */
04361      , { -960, -1225, -1080, -1170, -960} /* GT,GT,U/T,G,C */
04362      , { -335, -600, -455, -545, -960} /* GT,GT,U/T,G,G */
04363      , { -960, -1225, -1080, -1170, -960} /* GT,GT,U/T,G,U/T */
04364      }
04365      , { { -750, -1015, -870, -960, -750} /* GT,GT,U/T,U/T,E */
04366      , { -750, -1015, -870, -960, -750} /* GT,GT,U/T,U/T,A */
04367      , { -750, -1015, -870, -960, -750} /* GT,GT,U/T,U/T,C */
04368      , { -750, -1015, -870, -960, -750} /* GT,GT,U/T,U/T,G */
04369      , { -750, -1015, -870, -960, -750} /* GT,GT,U/T,U/T,U/T */
04370      }
04371      }
04372      }
04373      , { { { 425, -55, 50, 215, 170} /* GT,UG,E,E,E */
04374      , { 425, -55, -320, 215, -80} /* GT,UG,E,E,A */
04375      , { 170, -610, -575, -40, -455} /* GT,UG,E,E,C */
04376      , { 170, -95, 50, -40, 170} /* GT,UG,E,E,G */
04377      , { 170, -610, -575, -40, -455} /* GT,UG,E,E,U/T */
04378      }
04379      , { { 410, -70, -335, 200, -95} /* GT,UG,E,A,E */
04380      , { 410, -70, -335, 200, -95} /* GT,UG,E,A,A */
04381      , { 155, -735, -590, -55, -470} /* GT,UG,E,A,C */
04382      , { -520, -835, -640, -765, -520} /* GT,UG,E,A,G */
04383      , { 155, -735, -590, -55, -470} /* GT,UG,E,A,U/T */
04384      }
04385      , { { 170, -610, -575, -40, -455} /* GT,UG,E,C,E */
04386      , { 170, -720, -575, -40, -455} /* GT,UG,E,C,A */
04387      , { 170, -610, -575, -40, -455} /* GT,UG,E,C,C */
04388      , { 170, -720, -575, -40, -455} /* GT,UG,E,C,G */
04389      , { 170, -610, -575, -40, -455} /* GT,UG,E,C,U/T */
04390      }
04391      , { { 75, -190, -45, -135, 75} /* GT,UG,E,G,E */
04392      , { -685, -1070, -805, -930, -685} /* GT,UG,E,G,A */
04393      , { 75, -815, -670, -135, -550} /* GT,UG,E,G,C */
04394      , { 75, -190, -45, -135, 75} /* GT,UG,E,G,G */
04395      , { 75, -815, -670, -135, -550} /* GT,UG,E,G,U/T */
04396      }
04397      , { { -250, -1030, -995, -460, -875} /* GT,UG,E,U/T,E */
04398      , { -250, -1140, -995, -460, -875} /* GT,UG,E,U/T,A */
04399      , { -250, -1030, -995, -460, -875} /* GT,UG,E,U/T,C */
04400      , { -250, -1140, -995, -460, -875} /* GT,UG,E,U/T,G */
04401      , { -790, -1110, -995, -1000, -875} /* GT,UG,E,U/T,U/T */
04402      }
04403      }
04404      , { { { 230, -55, 50, 20, 170} /* GT,UG,A,E,E */
04405      , { 230, -55, -320, 20, -200} /* GT,UG,A,E,A */
04406      , { -250, -810, -575, -460, -455} /* GT,UG,A,E,C */
04407      , { 170, -185, 50, -580, 170} /* GT,UG,A,E,G */
04408      , { -250, -690, -575, -460, -455} /* GT,UG,A,E,U/T */
04409      }
04410      , { { 215, -70, -335, 5, -215} /* GT,UG,A,A,E */
04411      , { 215, -70, -335, 5, -215} /* GT,UG,A,A,A */
04412      , { -385, -825, -590, -595, -470} /* GT,UG,A,A,C */
04413      , { -555, -835, -760, -765, -640} /* GT,UG,A,A,G */
04414      , { -385, -825, -590, -595, -470} /* GT,UG,A,A,U/T */
04415      }
04416      , { { -250, -810, -575, -460, -455} /* GT,UG,A,C,E */
04417      , { -370, -810, -575, -580, -455} /* GT,UG,A,C,A */
04418      , { -250, -810, -575, -460, -455} /* GT,UG,A,C,C */
04419      , { -370, -810, -575, -580, -455} /* GT,UG,A,C,G */
04420      , { -250, -810, -575, -460, -455} /* GT,UG,A,C,U/T */
04421      }
04422      , { { 75, -280, -45, -675, 75} /* GT,UG,A,G,E */
04423      , { -720, -1160, -925, -930, -805} /* GT,UG,A,G,A */
04424      , { -465, -905, -675, -550} /* GT,UG,A,G,C */
04425      , { 75, -280, -45, -675, 75} /* GT,UG,A,G,G */
04426      , { -465, -905, -670, -675, -550} /* GT,UG,A,G,U/T */
04427      }
04428      , { { -670, -1110, -995, -880, -875} /* GT,UG,A,U/T,E */
04429      , { -790, -1230, -995, -1000, -875} /* GT,UG,A,U/T,A */
04430      , { -670, -1230, -995, -880, -875} /* GT,UG,A,U/T,C */
04431      , { -790, -1230, -995, -1000, -875} /* GT,UG,A,U/T,G */
04432      , { -790, -1110, -995, -1000, -875} /* GT,UG,A,U/T,U/T */
04433      }
04434      }
04435      , { { { 170, -95, 50, -40, 170} /* GT,UG,C,E,E */
04436      , { -200, -465, -320, -410, -200} /* GT,UG,C,E,A */
04437      , { -455, -720, -575, -665, -455} /* GT,UG,C,E,C */
04438      , { 170, -95, 50, -40, 170} /* GT,UG,C,E,G */
04439      , { -455, -720, -575, -665, -455} /* GT,UG,C,E,U/T */
04440      }

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04441 ,{{ -215, -480, -335, -425, -215} /* GT,UG,C,A,E */
04442 ,{ -215, -480, -335, -425, -215} /* GT,UG,C,A,A */
04443 ,{ -470, -735, -590, -680, -470} /* GT,UG,C,A,C */
04444 ,{ -520, -905, -640, -850, -520} /* GT,UG,C,A,G */
04445 ,{ -470, -735, -590, -680, -470} /* GT,UG,C,A,U/T */
04446 }
04447 ,{{ -455, -720, -575, -665, -455} /* GT,UG,C,C,E */
04448 ,{ -455, -720, -575, -665, -455} /* GT,UG,C,C,A */
04449 ,{ -455, -720, -575, -665, -455} /* GT,UG,C,C,C */
04450 ,{ -455, -720, -575, -665, -455} /* GT,UG,C,C,G */
04451 ,{ -455, -720, -575, -665, -455} /* GT,UG,C,C,U/T */
04452 }
04453 ,{{ 75, -190, -45, -135, 75} /* GT,UG,C,G,E */
04454 ,{ -685, -1070, -805, -1015, -685} /* GT,UG,C,G,A */
04455 ,{ -550, -815, -670, -760, -550} /* GT,UG,C,G,C */
04456 ,{ 75, -190, -45, -135, 75} /* GT,UG,C,G,G */
04457 ,{ -550, -815, -670, -760, -550} /* GT,UG,C,G,U/T */
04458 }
04459 ,{{ -875, -1140, -995, -1085, -875} /* GT,UG,C,U/T,E */
04460 ,{ -875, -1140, -995, -1085, -875} /* GT,UG,C,U/T,A */
04461 ,{ -875, -1140, -995, -1085, -875} /* GT,UG,C,U/T,C */
04462 ,{ -875, -1140, -995, -1085, -875} /* GT,UG,C,U/T,G */
04463 ,{ -875, -1140, -995, -1085, -875} /* GT,UG,C,U/T,U/T */
04464 }
04465 }
04466 ,{{{ 425, -475, 50, 215, 170} /* GT,UG,G,E,E */
04467 ,{ 425, -475, -320, 215, -200} /* GT,UG,G,E,A */
04468 ,{ 170, -610, -575, -40, -455} /* GT,UG,G,E,C */
04469 ,{ 170, -730, 50, -40, 170} /* GT,UG,G,E,G */
04470 ,{ 170, -610, -575, -40, -455} /* GT,UG,G,E,U/T */
04471 }
04472 ,{{ 410, -490, -335, 200, -215} /* GT,UG,G,A,E */
04473 ,{ 410, -490, -335, 200, -215} /* GT,UG,G,A,A */
04474 ,{ 155, -745, -590, -55, -470} /* GT,UG,G,A,C */
04475 ,{ -640, -1555, -760, -850, -640} /* GT,UG,G,A,G */
04476 ,{ 155, -745, -590, -55, -470} /* GT,UG,G,A,U/T */
04477 }
04478 ,{{ 170, -610, -575, -40, -455} /* GT,UG,G,C,E */
04479 ,{ 170, -730, -575, -40, -455} /* GT,UG,G,C,A */
04480 ,{ 170, -610, -575, -40, -455} /* GT,UG,G,C,C */
04481 ,{ 170, -730, -575, -40, -455} /* GT,UG,G,C,G */
04482 ,{ 170, -610, -575, -40, -455} /* GT,UG,G,C,U/T */
04483 }
04484 ,{{ 75, -825, -45, -135, 75} /* GT,UG,G,G,E */
04485 ,{ -805, -1080, -925, -1015, -805} /* GT,UG,G,G,A */
04486 ,{ 75, -825, -670, -135, -550} /* GT,UG,G,G,C */
04487 ,{ 75, -825, -45, -760, 75} /* GT,UG,G,G,G */
04488 ,{ 75, -825, -670, -135, -550} /* GT,UG,G,G,U/T */
04489 }
04490 ,{{ -250, -1030, -995, -460, -875} /* GT,UG,G,U/T,E */
04491 ,{ -250, -1150, -995, -460, -875} /* GT,UG,G,U/T,A */
04492 ,{ -250, -1030, -995, -460, -875} /* GT,UG,G,U/T,C */
04493 ,{ -250, -1150, -995, -460, -875} /* GT,UG,G,U/T,G */
04494 ,{ -875, -1150, -995, -1085, -875} /* GT,UG,G,U/T,U/T */
04495 }
04496 }
04497 ,{{{ 170, -95, 50, -40, -80} /* GT,UG,U/T,E,E */
04498 ,{ -80, -465, -320, -410, -80} /* GT,UG,U/T,E,A */
04499 ,{ -455, -720, -575, -665, -455} /* GT,UG,U/T,E,C */
04500 ,{ 170, -95, 50, -40, -455} /* GT,UG,U/T,E,G */
04501 ,{ -455, -720, -575, -665, -455} /* GT,UG,U/T,E,U/T */
04502 }
04503 ,{{ -95, -480, -335, -425, -95} /* GT,UG,U/T,A,E */
04504 ,{ -95, -480, -335, -425, -95} /* GT,UG,U/T,A,A */
04505 ,{ -470, -735, -590, -680, -470} /* GT,UG,U/T,A,C */
04506 ,{ -520, -905, -640, -850, -640} /* GT,UG,U/T,A,G */
04507 ,{ -470, -735, -590, -680, -470} /* GT,UG,U/T,A,U/T */
04508 }
04509 ,{{ -455, -720, -575, -665, -455} /* GT,UG,U/T,C,E */
04510 ,{ -455, -720, -575, -665, -455} /* GT,UG,U/T,C,A */
04511 ,{ -455, -720, -575, -665, -455} /* GT,UG,U/T,C,C */
04512 ,{ -455, -720, -575, -665, -455} /* GT,UG,U/T,C,G */
04513 ,{ -455, -720, -575, -665, -455} /* GT,UG,U/T,C,U/T */
04514 }
04515 ,{{ 75, -190, -45, -135, -550} /* GT,UG,U/T,G,E */
04516 ,{ -685, -1070, -805, -1015, -805} /* GT,UG,U/T,G,A */
04517 ,{ -550, -815, -670, -760, -550} /* GT,UG,U/T,G,C */
04518 ,{ 75, -190, -45, -135, -550} /* GT,UG,U/T,G,G */
04519 ,{ -550, -815, -670, -760, -550} /* GT,UG,U/T,G,U/T */
04520 }
04521 ,{{ -875, -1140, -995, -1085, -875} /* GT,UG,U/T,U/T,E */
04522 ,{ -875, -1140, -995, -1085, -875} /* GT,UG,U/T,U/T,A */
04523 ,{ -875, -1140, -995, -1085, -875} /* GT,UG,U/T,U/T,C */
04524 ,{ -875, -1140, -995, -1085, -875} /* GT,UG,U/T,U/T,G */
04525 ,{ -875, -1140, -995, -1085, -875} /* GT,UG,U/T,U/T,U/T */
04526 }
04527 }

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04528     }
04529     ,{{{      845,      220,      365,      635,      485} /* GT,AT,E,E,E */
04530     ,{        845,      -45,      100,      635,      340} /* GT,AT,E,E,A */
04531     ,{        695,      -80,      -50,      485,      70} /* GT,AT,E,E,C */
04532     ,{        700,      220,      365,      490,      485} /* GT,AT,E,E,G */
04533     ,{        695,      -80,      -50,      485,      70} /* GT,AT,E,E,U/T */
04534     }
04535     ,{{{      785,     -105,       40,      575,      280} /* GT,AT,E,A,E */
04536     ,{        785,     -105,       40,      575,      280} /* GT,AT,E,A,A */
04537     ,{        630,     -260,     -115,      420,       5} /* GT,AT,E,A,C */
04538     ,{       -415,     -800,     -535,     -655,     -415} /* GT,AT,E,A,G */
04539     ,{        630,     -260,     -115,      420,       5} /* GT,AT,E,A,U/T */
04540     }
04541     ,{{{      700,      -80,      -45,      490,      75} /* GT,AT,E,C,E */
04542     ,{        700,     -190,     -45,      490,      75} /* GT,AT,E,C,A */
04543     ,{        695,      -80,      -50,      485,      70} /* GT,AT,E,C,C */
04544     ,{        700,     -190,     -45,      490,      75} /* GT,AT,E,C,G */
04545     ,{        695,      -80,      -50,      485,      70} /* GT,AT,E,C,U/T */
04546     }
04547     ,{{{      665,      195,      340,      455,      460} /* GT,AT,E,G,E */
04548     ,{       -290,     -675,     -410,     -530,     -290} /* GT,AT,E,G,A */
04549     ,{        665,     -225,      -80,      455,      40} /* GT,AT,E,G,C */
04550     ,{        460,      195,      340,      250,      460} /* GT,AT,E,G,G */
04551     ,{        665,     -225,      -80,      455,      40} /* GT,AT,E,G,U/T */
04552     }
04553     ,{{{      655,     -125,      -90,      445,      30} /* GT,AT,E,U/T,E */
04554     ,{        655,     -235,      -90,      445,      30} /* GT,AT,E,U/T,A */
04555     ,{        650,     -125,     -95,      440,      25} /* GT,AT,E,U/T,C */
04556     ,{        655,     -235,      -90,      445,      30} /* GT,AT,E,U/T,G */
04557     ,{       -375,     -700,     -585,     -585,     -465} /* GT,AT,E,U/T,U/T */
04558     }
04559     }
04560     ,{{{      485,      130,      365,      100,      485} /* GT,AT,A,E,E */
04561     ,{        310,     -135,      100,      100,      220} /* GT,AT,A,E,A */
04562     ,{        280,     -285,      -50,       70,       70} /* GT,AT,A,E,C */
04563     ,{        485,      130,      365,     -50,      485} /* GT,AT,A,E,G */
04564     ,{        280,     -285,     -50,       70,       70} /* GT,AT,A,E,U/T */
04565     }
04566     ,{{{      250,     -195,       40,       40,      160} /* GT,AT,A,A,E */
04567     ,{        250,     -195,       40,       40,      160} /* GT,AT,A,A,A */
04568     ,{         95,     -350,     -115,     -115,       5} /* GT,AT,A,A,C */
04569     ,{       -445,     -890,     -655,     -655,     -535} /* GT,AT,A,A,G */
04570     ,{         95,     -350,     -115,     -115,       5} /* GT,AT,A,A,U/T */
04571     }
04572     ,{{{      280,     -280,     -45,       70,      75} /* GT,AT,A,C,E */
04573     ,{        160,     -280,     -45,     -50,      75} /* GT,AT,A,C,A */
04574     ,{        280,     -285,     -50,       70,      70} /* GT,AT,A,C,C */
04575     ,{        160,     -280,     -45,     -50,      75} /* GT,AT,A,C,G */
04576     ,{        280,     -285,     -50,       70,      70} /* GT,AT,A,C,U/T */
04577     }
04578     ,{{{      460,      105,      340,     -80,      460} /* GT,AT,A,G,E */
04579     ,{       -320,     -765,     -530,     -530,     -410} /* GT,AT,A,G,A */
04580     ,{        130,     -315,     -80,     -80,      40} /* GT,AT,A,G,C */
04581     ,{        460,      105,      340,     -285,      460} /* GT,AT,A,G,G */
04582     ,{        130,     -315,     -80,     -80,      40} /* GT,AT,A,G,U/T */
04583     }
04584     ,{{{      235,     -325,     -90,       25,      30} /* GT,AT,A,U/T,E */
04585     ,{        115,     -325,     -90,     -95,      30} /* GT,AT,A,U/T,A */
04586     ,{        235,     -330,     -95,       25,      25} /* GT,AT,A,U/T,C */
04587     ,{        115,     -325,     -90,     -95,      30} /* GT,AT,A,U/T,G */
04588     ,{       -375,     -700,     -585,     -585,     -465} /* GT,AT,A,U/T,U/T */
04589     }
04590     }
04591     ,{{{      485,      220,      365,      275,      485} /* GT,AT,C,E,E */
04592     ,{        220,     -45,      100,       10,      220} /* GT,AT,C,E,A */
04593     ,{         70,     -195,     -50,     -140,      70} /* GT,AT,C,E,C */
04594     ,{        485,      220,      365,      275,      485} /* GT,AT,C,E,G */
04595     ,{         70,     -195,     -50,     -140,      70} /* GT,AT,C,E,U/T */
04596     }
04597     ,{{{      160,     -105,       40,     -50,      160} /* GT,AT,C,A,E */
04598     ,{        160,     -105,       40,     -50,      160} /* GT,AT,C,A,A */
04599     ,{         5,     -260,     -115,     -205,       5} /* GT,AT,C,A,C */
04600     ,{       -415,     -800,     -535,     -745,     -415} /* GT,AT,C,A,G */
04601     ,{         5,     -260,     -115,     -205,       5} /* GT,AT,C,A,U/T */
04602     }
04603     ,{{{       75,     -190,     -45,     -135,      75} /* GT,AT,C,C,E */
04604     ,{         75,     -190,     -45,     -135,      75} /* GT,AT,C,C,A */
04605     ,{         70,     -195,     -50,     -140,      70} /* GT,AT,C,C,C */
04606     ,{         75,     -190,     -45,     -135,      75} /* GT,AT,C,C,G */
04607     ,{         70,     -195,     -50,     -140,      70} /* GT,AT,C,C,U/T */
04608     }
04609     ,{{{      460,      195,      340,      250,      460} /* GT,AT,C,G,E */
04610     ,{       -290,     -675,     -410,     -620,     -290} /* GT,AT,C,G,A */
04611     ,{         40,     -225,     -80,     -170,      40} /* GT,AT,C,G,C */
04612     ,{        460,      195,      340,      250,      460} /* GT,AT,C,G,G */
04613     ,{         40,     -225,     -80,     -170,      40} /* GT,AT,C,G,U/T */
04614     }

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04615 ,{{ 30, -235, -90, -180, 30} /* GT,AT,C,U/T,E */
04616 ,{ 30, -235, -90, -180, 30} /* GT,AT,C,U/T,A */
04617 ,{ 25, -240, -95, -185, 25} /* GT,AT,C,U/T,C */
04618 ,{ 30, -235, -90, -180, 30} /* GT,AT,C,U/T,G */
04619 ,{ -465, -730, -585, -675, -465} /* GT,AT,C,U/T,U/T */
04620 }
04621 }
04622 ,{{{ 845, -50, 365, 635, 485} /* GT,AT,G,E,E */
04623 ,{ 845, -50, 100, 635, 220} /* GT,AT,G,E,A */
04624 ,{ 695, -80, -50, 485, 70} /* GT,AT,G,E,C */
04625 ,{ 700, -200, 365, 490, 485} /* GT,AT,G,E,G */
04626 ,{ 695, -80, -50, 485, 70} /* GT,AT,G,E,U/T */
04627 }
04628 ,{{ 785, -110, 40, 575, 160} /* GT,AT,G,A,E */
04629 ,{ 785, -110, 40, 575, 160} /* GT,AT,G,A,A */
04630 ,{ 630, -265, -115, 420, 5} /* GT,AT,G,A,C */
04631 ,{ -535, -805, -655, -745, -535} /* GT,AT,G,A,G */
04632 ,{ 630, -265, -115, 420, 5} /* GT,AT,G,A,U/T */
04633 }
04634 ,{{ 700, -80, -45, 490, 75} /* GT,AT,G,C,E */
04635 ,{ 700, -200, -45, 490, 75} /* GT,AT,G,C,A */
04636 ,{ 695, -80, -50, 485, 70} /* GT,AT,G,C,C */
04637 ,{ 700, -200, -45, 490, 75} /* GT,AT,G,C,G */
04638 ,{ 695, -80, -50, 485, 70} /* GT,AT,G,C,U/T */
04639 }
04640 ,{{{ 665, -230, 340, 455, 460} /* GT,AT,G,G,E */
04641 ,{ -410, -680, -530, -620, -410} /* GT,AT,G,G,A */
04642 ,{ 665, -230, -80, 455, 40} /* GT,AT,G,G,C */
04643 ,{ 460, -435, 340, -375, 460} /* GT,AT,G,G,G */
04644 ,{ 665, -230, -80, 455, 40} /* GT,AT,G,G,U/T */
04645 }
04646 ,{{{ 655, -125, -90, 445, 30} /* GT,AT,G,U/T,E */
04647 ,{ 655, -245, -90, 445, 30} /* GT,AT,G,U/T,A */
04648 ,{ 650, -125, -95, 440, 25} /* GT,AT,G,U/T,C */
04649 ,{ 655, -245, -90, 445, 30} /* GT,AT,G,U/T,G */
04650 ,{ -465, -735, -585, -675, -465} /* GT,AT,G,U/T,U/T */
04651 }
04652 }
04653 ,{{{ 485, 220, 365, 275, 340} /* GT,AT,U/T,E,E */
04654 ,{ 340, -45, 100, 10, 340} /* GT,AT,U/T,E,A */
04655 ,{ 70, -195, -50, -140, 70} /* GT,AT,U/T,E,C */
04656 ,{ 485, 220, 365, 275, 75} /* GT,AT,U/T,E,G */
04657 ,{ 70, -195, -50, -140, 70} /* GT,AT,U/T,E,U/T */
04658 }
04659 ,{{{ 280, -105, 40, -50, 280} /* GT,AT,U/T,A,E */
04660 ,{ 280, -105, 40, -50, 280} /* GT,AT,U/T,A,A */
04661 ,{ 5, -260, -115, -205, 5} /* GT,AT,U/T,A,C */
04662 ,{ -415, -800, -535, -745, -535} /* GT,AT,U/T,A,G */
04663 ,{ 5, -260, -115, -205, 5} /* GT,AT,U/T,A,U/T */
04664 }
04665 ,{{{ 75, -190, -45, -135, 75} /* GT,AT,U/T,C,E */
04666 ,{ 75, -190, -45, -135, 75} /* GT,AT,U/T,C,A */
04667 ,{ 70, -195, -50, -140, 70} /* GT,AT,U/T,C,C */
04668 ,{ 75, -190, -45, -135, 75} /* GT,AT,U/T,C,G */
04669 ,{ 70, -195, -50, -140, 70} /* GT,AT,U/T,C,U/T */
04670 }
04671 ,{{{ 460, 195, 340, 250, 40} /* GT,AT,U/T,G,E */
04672 ,{ -290, -675, -410, -620, -410} /* GT,AT,U/T,G,A */
04673 ,{ 40, -225, -80, -170, 40} /* GT,AT,U/T,G,C */
04674 ,{ 460, 195, 340, 250, -165} /* GT,AT,U/T,G,G */
04675 ,{ 40, -225, -80, -170, 40} /* GT,AT,U/T,G,U/T */
04676 }
04677 ,{{{ 30, -235, -90, -180, 30} /* GT,AT,U/T,U/T,E */
04678 ,{ 30, -235, -90, -180, 30} /* GT,AT,U/T,U/T,A */
04679 ,{ 25, -240, -95, -185, 25} /* GT,AT,U/T,U/T,C */
04680 ,{ 30, -235, -90, -180, 30} /* GT,AT,U/T,U/T,G */
04681 ,{ -465, -730, -585, -675, -465} /* GT,AT,U/T,U/T,U/T */
04682 }
04683 }
04684 }
04685 ,{{{ 750, 185, 330, 540, 450} /* GT,UA,E,E,E */
04686 ,{ 750, -140, 5, 540, 245} /* GT,UA,E,E,A */
04687 ,{ 685, -95, -60, 475, 60} /* GT,UA,E,E,C */
04688 ,{ 685, 185, 330, 475, 450} /* GT,UA,E,E,G */
04689 ,{ 620, -160, -125, 410, -5} /* GT,UA,E,E,U/T */
04690 }
04691 ,{{{ 735, -155, -10, 525, 230} /* GT,UA,E,A,E */
04692 ,{ 735, -155, -10, 525, 230} /* GT,UA,E,A,A */
04693 ,{ 595, -295, -150, 385, -30} /* GT,UA,E,A,C */
04694 ,{ -475, -860, -595, -715, -475} /* GT,UA,E,A,G */
04695 ,{ 595, -295, -150, 385, -30} /* GT,UA,E,A,U/T */
04696 }
04697 ,{{{ 685, -95, -60, 475, 60} /* GT,UA,E,C,E */
04698 ,{ 685, -205, -60, 475, 60} /* GT,UA,E,C,A */
04699 ,{ 685, -95, -60, 475, 60} /* GT,UA,E,C,C */
04700 ,{ 685, -205, -60, 475, 60} /* GT,UA,E,C,G */
04701 ,{ 620, -160, -125, 410, -5} /* GT,UA,E,C,U/T */

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04702    }
04703    ,{{    515,    90,    235,    305,    355} /* GT,UA,E,G,E */
04704    ,{{   -705,  -1090,  -825,  -945,  -705} /* GT,UA,E,G,A */
04705    ,{{    515,   -375,  -230,    305,  -110} /* GT,UA,E,G,C */
04706    ,{{    355,    90,    235,    145,    355} /* GT,UA,E,G,G */
04707    ,{{    515,   -375,  -230,    305,  -110} /* GT,UA,E,G,U/T */
04708    }
04709    ,{{    265,   -625,  -480,    55,  -360} /* GT,UA,E,U/T,E */
04710    ,{{    265,   -625,  -480,    55,  -360} /* GT,UA,E,U/T,A */
04711    ,{{     45,   -735,  -700,  -165,  -580} /* GT,UA,E,U/T,C */
04712    ,{{    265,   -625,  -480,    55,  -360} /* GT,UA,E,U/T,G */
04713    ,{{   -745,  -1065,  -950,  -955,  -830} /* GT,UA,E,U/T,U/T */
04714    }
04715    }
04716    ,{{{    450,    95,    330,    55,    450} /* GT,UA,A,E,E */
04717    ,{{    210,   -230,     5,     0,    125} /* GT,UA,A,E,A */
04718    ,{{    265,   -295,   -60,    55,    60} /* GT,UA,A,E,C */
04719    ,{{    450,    95,    330,   -65,    450} /* GT,UA,A,E,G */
04720    ,{{    200,   -360,  -125,   -10,    -5} /* GT,UA,A,E,U/T */
04721    }
04722    ,{{{    195,   -245,   -10,   -15,    110} /* GT,UA,A,A,E */
04723    ,{{    195,   -245,   -10,   -15,    110} /* GT,UA,A,A,A */
04724    ,{{     55,   -385,  -150,  -155,   -30} /* GT,UA,A,A,C */
04725    ,{{   -505,   -950,  -715,  -715,  -595} /* GT,UA,A,A,G */
04726    ,{{     55,   -385,  -150,  -155,   -30} /* GT,UA,A,A,U/T */
04727    }
04728    ,{{{    265,   -295,   -60,    55,    60} /* GT,UA,A,C,E */
04729    ,{{    145,   -295,   -60,   -65,    60} /* GT,UA,A,C,A */
04730    ,{{    265,   -295,   -60,    55,    60} /* GT,UA,A,C,C */
04731    ,{{    145,   -295,   -60,   -65,    60} /* GT,UA,A,C,G */
04732    ,{{    200,   -360,  -125,   -10,    -5} /* GT,UA,A,C,U/T */
04733    }
04734    ,{{{    355,     0,    235,  -235,    355} /* GT,UA,A,G,E */
04735    ,{{   -735,  -1180,  -945,  -945,  -825} /* GT,UA,A,G,A */
04736    ,{{    -25,   -465,  -230,  -235,  -110} /* GT,UA,A,G,C */
04737    ,{{    355,     0,    235,  -395,    355} /* GT,UA,A,G,G */
04738    ,{{    -25,   -465,  -230,  -235,  -110} /* GT,UA,A,G,U/T */
04739    }
04740    ,{{{   -275,   -715,  -480,  -485,  -360} /* GT,UA,A,U/T,E */
04741    ,{{   -275,   -715,  -480,  -485,  -360} /* GT,UA,A,U/T,A */
04742    ,{{   -375,   -935,  -700,  -585,  -580} /* GT,UA,A,U/T,C */
04743    ,{{   -275,   -715,  -480,  -485,  -360} /* GT,UA,A,U/T,G */
04744    ,{{   -745,  -1065,  -950,  -955,  -830} /* GT,UA,A,U/T,U/T */
04745    }
04746    }
04747    ,{{{    450,    185,    330,    240,    450} /* GT,UA,C,E,E */
04748    ,{{    125,   -140,     5,   -85,    125} /* GT,UA,C,E,A */
04749    ,{{     60,   -205,   -60,  -150,    60} /* GT,UA,C,E,C */
04750    ,{{    450,    185,    330,    240,    450} /* GT,UA,C,E,G */
04751    ,{{     -5,   -270,  -125,  -215,    -5} /* GT,UA,C,E,U/T */
04752    }
04753    ,{{{    110,  -155,   -10,  -100,    110} /* GT,UA,C,A,E */
04754    ,{{    110,  -155,   -10,  -100,    110} /* GT,UA,C,A,A */
04755    ,{{    -30,   -295,  -150,  -240,   -30} /* GT,UA,C,A,C */
04756    ,{{   -475,   -860,  -595,  -805,  -475} /* GT,UA,C,A,G */
04757    ,{{    -30,   -295,  -150,  -240,   -30} /* GT,UA,C,A,U/T */
04758    }
04759    ,{{{     60,   -205,   -60,  -150,    60} /* GT,UA,C,C,E */
04760    ,{{     60,   -205,   -60,  -150,    60} /* GT,UA,C,C,A */
04761    ,{{     60,   -205,   -60,  -150,    60} /* GT,UA,C,C,C */
04762    ,{{     60,   -205,   -60,  -150,    60} /* GT,UA,C,C,G */
04763    ,{{     -5,   -270,  -125,  -215,    -5} /* GT,UA,C,C,U/T */
04764    }
04765    ,{{{    355,    90,    235,    145,    355} /* GT,UA,C,G,E */
04766    ,{{   -705,  -1090,  -825,  -1035,  -705} /* GT,UA,C,G,A */
04767    ,{{   -110,   -375,  -230,  -320,  -110} /* GT,UA,C,G,C */
04768    ,{{    355,    90,    235,    145,    355} /* GT,UA,C,G,G */
04769    ,{{   -110,   -375,  -230,  -320,  -110} /* GT,UA,C,G,U/T */
04770    }
04771    ,{{{   -360,   -625,  -480,  -570,  -360} /* GT,UA,C,U/T,E */
04772    ,{{   -360,   -625,  -480,  -570,  -360} /* GT,UA,C,U/T,A */
04773    ,{{   -580,   -845,  -700,  -790,  -580} /* GT,UA,C,U/T,C */
04774    ,{{   -360,   -625,  -480,  -570,  -360} /* GT,UA,C,U/T,G */
04775    ,{{   -830,  -1095,  -950,  -1040,  -830} /* GT,UA,C,U/T,U/T */
04776    }
04777    }
04778    ,{{{    750,   -95,    330,    540,    450} /* GT,UA,G,E,E */
04779    ,{{    750,  -150,     5,    540,    125} /* GT,UA,G,E,A */
04780    ,{{    685,   -95,   -60,    475,    60} /* GT,UA,G,E,C */
04781    ,{{    685,  -215,    330,    475,    450} /* GT,UA,G,E,G */
04782    ,{{    620,  -160,  -125,    410,    -5} /* GT,UA,G,E,U/T */
04783    }
04784    ,{{{    735,  -165,   -10,    525,    110} /* GT,UA,G,A,E */
04785    ,{{    735,  -165,   -10,    525,    110} /* GT,UA,G,A,A */
04786    ,{{    595,   -305,  -150,    385,   -30} /* GT,UA,G,A,C */
04787    ,{{   -595,   -865,  -715,  -805,  -595} /* GT,UA,G,A,G */
04788    ,{{    595,   -305,  -150,    385,   -30} /* GT,UA,G,A,U/T */
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04789      }
04790      ,{{      685,      -95,      -60,      475,      60} /* GT,UA,G,C,E */
04791      ,{{      685,      -215,      -60,      475,      60} /* GT,UA,G,C,A */
04792      ,{{      685,      -95,      -60,      475,      60} /* GT,UA,G,C,C */
04793      ,{{      685,      -215,      -60,      475,      60} /* GT,UA,G,C,G */
04794      ,{{      620,      -160,      -125,      410,      -5} /* GT,UA,G,C,U/T */
04795      }
04796      ,{{      515,      -385,      235,      305,      355} /* GT,UA,G,G,E */
04797      ,{{      -825,      -1095,      -945,      -1035,      -825} /* GT,UA,G,G,A */
04798      ,{{      515,      -385,      -230,      305,      -110} /* GT,UA,G,G,C */
04799      ,{{      355,      -545,      235,      -480,      355} /* GT,UA,G,G,G */
04800      ,{{      515,      -385,      -230,      305,      -110} /* GT,UA,G,G,U/T */
04801      }
04802      ,{{      265,      -635,      -480,      55,      -360} /* GT,UA,G,U/T,E */
04803      ,{{      265,      -635,      -480,      55,      -360} /* GT,UA,G,U/T,A */
04804      ,{{      45,      -735,      -700,      -165,      -580} /* GT,UA,G,U/T,C */
04805      ,{{      265,      -635,      -480,      55,      -360} /* GT,UA,G,U/T,G */
04806      ,{{      -830,      -1105,      -950,      -1040,      -830} /* GT,UA,G,U/T,U/T */
04807      }
04808      }
04809      ,{{{      450,      185,      330,      240,      245} /* GT,UA,U/T,E,E */
04810      ,{{      245,      -140,      5,      -85,      245} /* GT,UA,U/T,E,A */
04811      ,{{      60,      -205,      -60,      -150,      60} /* GT,UA,U/T,E,C */
04812      ,{{      450,      185,      330,      240,      60} /* GT,UA,U/T,E,G */
04813      ,{{      -5,      -270,      -125,      -215,      -5} /* GT,UA,U/T,E,U/T */
04814      }
04815      ,{{{      230,      -155,      -10,      -100,      230} /* GT,UA,U/T,A,E */
04816      ,{{      230,      -155,      -10,      -100,      230} /* GT,UA,U/T,A,A */
04817      ,{{      -30,      -295,      -150,      -240,      -30} /* GT,UA,U/T,A,C */
04818      ,{{      -475,      -860,      -595,      -805,      -595} /* GT,UA,U/T,A,G */
04819      ,{{      -30,      -295,      -150,      -240,      -30} /* GT,UA,U/T,A,U/T */
04820      }
04821      ,{{{      60,      -205,      -60,      -150,      60} /* GT,UA,U/T,C,E */
04822      ,{{      60,      -205,      -60,      -150,      60} /* GT,UA,U/T,C,A */
04823      ,{{      60,      -205,      -60,      -150,      60} /* GT,UA,U/T,C,C */
04824      ,{{      60,      -205,      -60,      -150,      60} /* GT,UA,U/T,C,G */
04825      ,{{      -5,      -270,      -125,      -215,      -5} /* GT,UA,U/T,C,U/T */
04826      }
04827      ,{{{      355,      90,      235,      145,      -110} /* GT,UA,U/T,G,E */
04828      ,{{      -705,      -1090,      -825,      -1035,      -825} /* GT,UA,U/T,G,A */
04829      ,{{      -110,      -375,      -230,      -320,      -110} /* GT,UA,U/T,G,C */
04830      ,{{      355,      90,      235,      145,      -270} /* GT,UA,U/T,G,G */
04831      ,{{      -110,      -375,      -230,      -320,      -110} /* GT,UA,U/T,G,U/T */
04832      }
04833      ,{{{      -360,      -625,      -480,      -570,      -360} /* GT,UA,U/T,U/T,E */
04834      ,{{      -360,      -625,      -480,      -570,      -360} /* GT,UA,U/T,U/T,A */
04835      ,{{      -580,      -845,      -700,      -790,      -580} /* GT,UA,U/T,U/T,C */
04836      ,{{      -360,      -625,      -480,      -570,      -360} /* GT,UA,U/T,U/T,G */
04837      ,{{      -830,      -1095,      -950,      -1040,      -830} /* GT,UA,U/T,U/T,U/T */
04838      }
04839      }
04840      }
04841      ,{{{      880,      315,      460,      670,      580} /* GT,NN,E,E,E */
04842      ,{{      880,      75,      135,      670,      375} /* GT,NN,E,E,A */
04843      ,{{      815,      35,      70,      605,      190} /* GT,NN,E,E,C */
04844      ,{{      815,      315,      460,      605,      580} /* GT,NN,E,E,G */
04845      ,{{      750,      -30,      5,      540,      125} /* GT,NN,E,E,U/T */
04846      }
04847      ,{{{      820,      15,      75,      610,      315} /* GT,NN,E,A,E */
04848      ,{{      820,      15,      75,      610,      315} /* GT,NN,E,A,A */
04849      ,{{      680,      -210,      -65,      470,      55} /* GT,NN,E,A,C */
04850      ,{{      -275,      -660,      -395,      -520,      -275} /* GT,NN,E,A,G */
04851      ,{{      680,      -210,      -65,      470,      55} /* GT,NN,E,A,U/T */
04852      }
04853      ,{{{      815,      35,      70,      605,      190} /* GT,NN,E,C,E */
04854      ,{{      815,      -75,      70,      605,      190} /* GT,NN,E,C,A */
04855      ,{{      815,      35,      70,      605,      190} /* GT,NN,E,C,C */
04856      ,{{      815,      -75,      70,      605,      190} /* GT,NN,E,C,G */
04857      ,{{      750,      -30,      5,      540,      125} /* GT,NN,E,C,U/T */
04858      }
04859      ,{{{      715,      290,      435,      505,      555} /* GT,NN,E,G,E */
04860      ,{{      -290,      -675,      -410,      -530,      -290} /* GT,NN,E,G,A */
04861      ,{{      715,      -175,      -30,      505,      90} /* GT,NN,E,G,C */
04862      ,{{      555,      290,      435,      345,      555} /* GT,NN,E,G,G */
04863      ,{{      715,      -175,      -30,      505,      90} /* GT,NN,E,G,U/T */
04864      }
04865      ,{{{      770,      -120,      25,      560,      145} /* GT,NN,E,U/T,E */
04866      ,{{      770,      -120,      25,      560,      145} /* GT,NN,E,U/T,A */
04867      ,{{      650,      -125,      -95,      440,      25} /* GT,NN,E,U/T,C */
04868      ,{{      770,      -120,      25,      560,      145} /* GT,NN,E,U/T,G */
04869      ,{{      -240,      -560,      -445,      -450,      -325} /* GT,NN,E,U/T,U/T */
04870      }
04871      }
04872      ,{{{      580,      225,      460,      185,      580} /* GT,NN,A,E,E */
04873      ,{{      360,      75,      135,      150,      255} /* GT,NN,A,E,A */
04874      ,{{      395,      -165,      70,      185,      190} /* GT,NN,A,E,C */
04875      ,{{      580,      225,      460,      65,      580} /* GT,NN,A,E,G */

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```
04876 , { 330, -230, 5, 120, 125} /* GT,NN,A,E,U/T */
04877 }
04878 , { { 300, 15, 75, 90, 195} /* GT,NN,A,A,E */
04879 , { 300, 15, 75, 90, 195} /* GT,NN,A,A,A */
04880 , { 140, -300, -65, -70, 55} /* GT,NN,A,A,C */
04881 , { -310, -750, -515, -520, -395} /* GT,NN,A,A,G */
04882 , { 140, -300, -65, -70, 55} /* GT,NN,A,A,U/T */
04883 }
04884 , { { 395, -165, 70, 185, 190} /* GT,NN,A,C,E */
04885 , { 275, -165, 70, 65, 190} /* GT,NN,A,C,A */
04886 , { 395, -165, 70, 185, 190} /* GT,NN,A,C,C */
04887 , { 275, -165, 70, 65, 190} /* GT,NN,A,C,G */
04888 , { 330, -230, 5, 120, 125} /* GT,NN,A,C,U/T */
04889 }
04890 , { { 555, 200, 435, -35, 555} /* GT,NN,A,G,E */
04891 , { -320, -765, -530, -530, -410} /* GT,NN,A,G,A */
04892 , { 175, -265, -30, -35, 90} /* GT,NN,A,G,C */
04893 , { 555, 200, 435, -195, 555} /* GT,NN,A,G,G */
04894 , { 175, -265, -30, -35, 90} /* GT,NN,A,G,U/T */
04895 }
04896 , { { 235, -210, 25, 25, 145} /* GT,NN,A,U/T,E */
04897 , { 230, -210, 25, 20, 145} /* GT,NN,A,U/T,A */
04898 , { 235, -330, -95, 25, 25} /* GT,NN,A,U/T,C */
04899 , { 230, -210, 25, 20, 145} /* GT,NN,A,U/T,G */
04900 , { -240, -560, -445, -450, -325} /* GT,NN,A,U/T,U/T */
04901 }
04902 }
04903 , { { { 580, 315, 460, 370, 580} /* GT,NN,C,E,E */
04904 , { 255, -10, 135, 45, 255} /* GT,NN,C,E,A */
04905 , { 190, -75, 70, -20, 190} /* GT,NN,C,E,C */
04906 , { 580, 315, 460, 370, 580} /* GT,NN,C,E,G */
04907 , { 125, -140, 5, -85, 125} /* GT,NN,C,E,U/T */
04908 }
04909 , { { 195, -70, 75, -15, 195} /* GT,NN,C,A,E */
04910 , { 195, -70, 75, -15, 195} /* GT,NN,C,A,A */
04911 , { 55, -210, -65, -155, 55} /* GT,NN,C,A,C */
04912 , { -275, -660, -395, -605, -275} /* GT,NN,C,A,G */
04913 , { 55, -210, -65, -155, 55} /* GT,NN,C,A,U/T */
04914 }
04915 , { { 190, -75, 70, -20, 190} /* GT,NN,C,C,E */
04916 , { 190, -75, 70, -20, 190} /* GT,NN,C,C,A */
04917 , { 190, -75, 70, -20, 190} /* GT,NN,C,C,C */
04918 , { 190, -75, 70, -20, 190} /* GT,NN,C,C,G */
04919 , { 125, -140, 5, -85, 125} /* GT,NN,C,C,U/T */
04920 }
04921 , { { 555, 290, 435, 345, 555} /* GT,NN,C,G,E */
04922 , { -290, -675, -410, -620, -290} /* GT,NN,C,G,A */
04923 , { 90, -175, -30, -120, 90} /* GT,NN,C,G,C */
04924 , { 555, 290, 435, 345, 555} /* GT,NN,C,G,G */
04925 , { 90, -175, -30, -120, 90} /* GT,NN,C,G,U/T */
04926 }
04927 , { { 145, -120, 25, -65, 145} /* GT,NN,C,U/T,E */
04928 , { 145, -120, 25, -65, 145} /* GT,NN,C,U/T,A */
04929 , { 25, -240, -95, -185, 25} /* GT,NN,C,U/T,C */
04930 , { 145, -120, 25, -65, 145} /* GT,NN,C,U/T,G */
04931 , { -325, -590, -445, -535, -325} /* GT,NN,C,U/T,U/T */
04932 }
04933 }
04934 , { { { 880, 35, 460, 670, 580} /* GT,NN,G,E,E */
04935 , { 880, -20, 135, 670, 255} /* GT,NN,G,E,A */
04936 , { 815, 35, 70, 605, 190} /* GT,NN,G,E,C */
04937 , { 815, -85, 460, 605, 580} /* GT,NN,G,E,G */
04938 , { 750, -30, 5, 540, 125} /* GT,NN,G,E,U/T */
04939 }
04940 , { { 820, -80, 75, 610, 195} /* GT,NN,G,A,E */
04941 , { 820, -80, 75, 610, 195} /* GT,NN,G,A,A */
04942 , { 680, -220, -65, 470, 55} /* GT,NN,G,A,C */
04943 , { -395, -670, -515, -605, -395} /* GT,NN,G,A,G */
04944 , { 680, -220, -65, 470, 55} /* GT,NN,G,A,U/T */
04945 }
04946 , { { 815, 35, 70, 605, 190} /* GT,NN,G,C,E */
04947 , { 815, -85, 70, 605, 190} /* GT,NN,G,C,A */
04948 , { 815, 35, 70, 605, 190} /* GT,NN,G,C,C */
04949 , { 815, -85, 70, 605, 190} /* GT,NN,G,C,G */
04950 , { 750, -30, 5, 540, 125} /* GT,NN,G,C,U/T */
04951 }
04952 , { { 715, -185, 435, 505, 555} /* GT,NN,G,G,E */
04953 , { -410, -680, -530, -620, -410} /* GT,NN,G,G,A */
04954 , { 715, -185, -30, 505, 90} /* GT,NN,G,G,C */
04955 , { 555, -345, 435, -280, 555} /* GT,NN,G,G,G */
04956 , { 715, -185, -30, 505, 90} /* GT,NN,G,G,U/T */
04957 }
04958 , { { 770, -125, 25, 560, 145} /* GT,NN,G,U/T,E */
04959 , { 770, -130, 25, 560, 145} /* GT,NN,G,U/T,A */
04960 , { 650, -125, -95, 440, 25} /* GT,NN,G,U/T,C */
04961 , { 770, -130, 25, 560, 145} /* GT,NN,G,U/T,G */
04962 , { -325, -600, -445, -535, -325} /* GT,NN,G,U/T,U/T */
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04963      }
04964      }
04965      ,{{{      580,      315,      460,      370,      375} /* GT,NN,U/T,E,E */
04966      ,{      375,      -10,      135,      45,      375} /* GT,NN,U/T,E,A */
04967      ,{      190,      -75,      70,      -20,      190} /* GT,NN,U/T,E,C */
04968      ,{      580,      315,      460,      370,      190} /* GT,NN,U/T,E,G */
04969      ,{      125,      -140,      5,      -85,      125} /* GT,NN,U/T,E,U/T */
04970      }
04971      ,{{{      315,      -70,      75,      -15,      315} /* GT,NN,U/T,A,E */
04972      ,{      315,      -70,      75,      -15,      315} /* GT,NN,U/T,A,A */
04973      ,{      55,      -210,      -65,      -155,      55} /* GT,NN,U/T,A,C */
04974      ,{      -275,      -660,      -395,      -605,      -395} /* GT,NN,U/T,A,G */
04975      ,{      55,      -210,      -65,      -155,      55} /* GT,NN,U/T,A,U/T */
04976      }
04977      ,{{{      190,      -75,      70,      -20,      190} /* GT,NN,U/T,C,E */
04978      ,{      190,      -75,      70,      -20,      190} /* GT,NN,U/T,C,A */
04979      ,{      190,      -75,      70,      -20,      190} /* GT,NN,U/T,C,C */
04980      ,{      190,      -75,      70,      -20,      190} /* GT,NN,U/T,C,G */
04981      ,{      125,      -140,      5,      -85,      125} /* GT,NN,U/T,C,U/T */
04982      }
04983      ,{{{      555,      290,      435,      345,      90} /* GT,NN,U/T,G,E */
04984      ,{      -290,      -675,      -410,      -620,      -410} /* GT,NN,U/T,G,A */
04985      ,{      90,      -175,      -30,      -120,      90} /* GT,NN,U/T,G,C */
04986      ,{      555,      290,      435,      345,      -70} /* GT,NN,U/T,G,G */
04987      ,{      90,      -175,      -30,      -120,      90} /* GT,NN,U/T,G,U/T */
04988      }
04989      ,{{{      145,      -120,      25,      -65,      145} /* GT,NN,U/T,U/T,E */
04990      ,{      145,      -120,      25,      -65,      145} /* GT,NN,U/T,U/T,A */
04991      ,{      25,      -240,      -95,      -185,      25} /* GT,NN,U/T,U/T,C */
04992      ,{      145,      -120,      25,      -65,      145} /* GT,NN,U/T,U/T,G */
04993      ,{      -325,      -590,      -445,      -535,      -325} /* GT,NN,U/T,U/T,U/T */
04994      }
04995      }
04996      }
04997      }
04998      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,E,E */
04999      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,E,A */
05000      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,E,C */
05001      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,E,G */
05002      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,E,U/T */
05003      }
05004      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,A,E */
05005      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,A,A */
05006      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,A,C */
05007      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,A,G */
05008      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,A,U/T */
05009      }
05010      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,C,E */
05011      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,C,A */
05012      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,C,C */
05013      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,C,G */
05014      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,C,U/T */
05015      }
05016      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,G,E */
05017      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,G,A */
05018      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,G,C */
05019      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,G,G */
05020      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,G,U/T */
05021      }
05022      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,U/T,E */
05023      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,U/T,A */
05024      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,U/T,C */
05025      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,U/T,G */
05026      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,E,U/T,U/T */
05027      }
05028      }
05029      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,E,E */
05030      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,E,A */
05031      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,E,C */
05032      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,E,G */
05033      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,E,U/T */
05034      }
05035      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,A,E */
05036      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,A,A */
05037      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,A,C */
05038      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,A,G */
05039      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,A,U/T */
05040      }
05041      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,C,E */
05042      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,C,A */
05043      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,C,C */
05044      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,C,G */
05045      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,C,U/T */
05046      }
05047      ,{{{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,G,E */
05048      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,G,A */
05049      ,{      INF,      INF,      INF,      INF,      INF} /* UG,NP,A,G,C */

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05050 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,G */
05051 , { INF, INF, INF, INF, INF} /* UG,NP,A,G,U/T */
05052 }
05053 , { { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,E */
05054 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,A */
05055 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,C */
05056 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,G */
05057 , { INF, INF, INF, INF, INF} /* UG,NP,A,U/T,U/T */
05058 }
05059 }
05060 , { { { INF, INF, INF, INF, INF} /* UG,NP,C,E,E */
05061 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,A */
05062 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,C */
05063 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,G */
05064 , { INF, INF, INF, INF, INF} /* UG,NP,C,E,U/T */
05065 }
05066 , { { INF, INF, INF, INF, INF} /* UG,NP,C,A,E */
05067 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,A */
05068 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,C */
05069 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,G */
05070 , { INF, INF, INF, INF, INF} /* UG,NP,C,A,U/T */
05071 }
05072 , { { INF, INF, INF, INF, INF} /* UG,NP,C,C,E */
05073 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,A */
05074 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,C */
05075 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,G */
05076 , { INF, INF, INF, INF, INF} /* UG,NP,C,C,U/T */
05077 }
05078 , { { INF, INF, INF, INF, INF} /* UG,NP,C,G,E */
05079 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,A */
05080 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,C */
05081 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,G */
05082 , { INF, INF, INF, INF, INF} /* UG,NP,C,G,U/T */
05083 }
05084 , { { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,E */
05085 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,A */
05086 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,C */
05087 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,G */
05088 , { INF, INF, INF, INF, INF} /* UG,NP,C,U/T,U/T */
05089 }
05090 }
05091 , { { { INF, INF, INF, INF, INF} /* UG,NP,G,E,E */
05092 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,A */
05093 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,C */
05094 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,G */
05095 , { INF, INF, INF, INF, INF} /* UG,NP,G,E,U/T */
05096 }
05097 , { { INF, INF, INF, INF, INF} /* UG,NP,G,A,E */
05098 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,A */
05099 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,C */
05100 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,G */
05101 , { INF, INF, INF, INF, INF} /* UG,NP,G,A,U/T */
05102 }
05103 , { { INF, INF, INF, INF, INF} /* UG,NP,G,C,E */
05104 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,A */
05105 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,C */
05106 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,G */
05107 , { INF, INF, INF, INF, INF} /* UG,NP,G,C,U/T */
05108 }
05109 , { { INF, INF, INF, INF, INF} /* UG,NP,G,G,E */
05110 , { INF, INF, INF, INF, INF} /* UG,NP,G,G,A */
05111 , { INF, INF, INF, INF, INF} /* UG,NP,G,G,C */
05112 , { INF, INF, INF, INF, INF} /* UG,NP,G,G,G */
05113 , { INF, INF, INF, INF, INF} /* UG,NP,G,G,U/T */
05114 }
05115 , { { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,E */
05116 , { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,A */
05117 , { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,C */
05118 , { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,G */
05119 , { INF, INF, INF, INF, INF} /* UG,NP,G,U/T,U/T */
05120 }
05121 }
05122 , { { { INF, INF, INF, INF, INF} /* UG,NP,U/T,E,E */
05123 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,E,A */
05124 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,E,C */
05125 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,E,G */
05126 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,E,U/T */
05127 }
05128 , { { INF, INF, INF, INF, INF} /* UG,NP,U/T,A,E */
05129 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,A,A */
05130 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,A,C */
05131 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,A,G */
05132 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,A,U/T */
05133 }
05134 , { { INF, INF, INF, INF, INF} /* UG,NP,U/T,C,E */
05135 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,C,A */
05136 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,C,C */
```

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05137 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,C,G */
05138 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,C,U/T */
05139 }
05140 , {{ INF, INF, INF, INF, INF} /* UG,NP,U/T,G,E */
05141 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,G,A */
05142 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,G,C */
05143 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,G,G */
05144 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,G,U/T */
05145 }
05146 , {{ INF, INF, INF, INF, INF} /* UG,NP,U/T,U/T,E */
05147 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,U/T,A */
05148 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,U/T,C */
05149 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,U/T,G */
05150 , { INF, INF, INF, INF, INF} /* UG,NP,U/T,U/T,U/T */
05151 }
05152 }
05153 }
05154 , {{{ 320, 5, -235, 225, -655} /* UG,CG,E,E,E */
05155 , { 290, -95, -335, 195, -705} /* UG,CG,E,E,A */
05156 , { 320, -70, -305, 225, -725} /* UG,CG,E,E,C */
05157 , { 290, 5, -235, 195, -655} /* UG,CG,E,E,G */
05158 , { 265, -120, -360, 170, -780} /* UG,CG,E,E,U/T */
05159 }
05160 , {{ 200, -185, -415, 105, -725} /* UG,CG,E,A,E */
05161 , { 200, -185, -425, 105, -725} /* UG,CG,E,A,A */
05162 , { 45, -340, -580, -50, -1000} /* UG,CG,E,A,C */
05163 , { -280, -295, -415, -630, -835} /* UG,CG,E,A,G */
05164 , { 45, -340, -580, -50, -1000} /* UG,CG,E,A,U/T */
05165 }
05166 , {{ 290, -95, -335, 195, -755} /* UG,CG,E,C,E */
05167 , { 290, -95, -335, 195, -755} /* UG,CG,E,C,A */
05168 , { 290, -95, -335, 195, -755} /* UG,CG,E,C,C */
05169 , { 290, -95, -335, 195, -755} /* UG,CG,E,C,G */
05170 , { 265, -120, -360, 170, -780} /* UG,CG,E,C,U/T */
05171 }
05172 , {{ 40, -20, -260, -55, -680} /* UG,CG,E,G,E */
05173 , { -425, -440, -560, -775, -980} /* UG,CG,E,G,A */
05174 , { 40, -345, -585, -55, -1005} /* UG,CG,E,G,C */
05175 , { -5, -20, -260, -355, -680} /* UG,CG,E,G,G */
05176 , { 40, -345, -585, -55, -1005} /* UG,CG,E,G,U/T */
05177 }
05178 , {{ 280, -110, -345, 185, -765} /* UG,CG,E,U/T,E */
05179 , { 250, -135, -375, 155, -795} /* UG,CG,E,U/T,A */
05180 , { 280, -110, -345, 185, -765} /* UG,CG,E,U/T,C */
05181 , { 250, -135, -375, 155, -795} /* UG,CG,E,U/T,G */
05182 , { -395, -410, -770, -865, -1190} /* UG,CG,E,U/T,U/T */
05183 }
05184 }
05185 , {{{ 20, 5, -235, -535, -655} /* UG,CG,A,E,E */
05186 , { -80, -95, -335, -685, -755} /* UG,CG,A,E,A */
05187 , { -55, -70, -305, -535, -725} /* UG,CG,A,E,C */
05188 , { 20, 5, -235, -685, -655} /* UG,CG,A,E,G */
05189 , { -105, -120, -360, -590, -780} /* UG,CG,A,E,U/T */
05190 }
05191 , {{ -170, -185, -425, -775, -845} /* UG,CG,A,A,E */
05192 , { -170, -185, -425, -775, -845} /* UG,CG,A,A,A */
05193 , { -325, -340, -580, -930, -1000} /* UG,CG,A,A,C */
05194 , { -280, -295, -535, -885, -955} /* UG,CG,A,A,G */
05195 , { -325, -340, -580, -930, -1000} /* UG,CG,A,A,U/T */
05196 }
05197 , {{ -80, -95, -335, -565, -755} /* UG,CG,A,C,E */
05198 , { -80, -95, -335, -685, -755} /* UG,CG,A,C,A */
05199 , { -80, -95, -335, -565, -755} /* UG,CG,A,C,C */
05200 , { -80, -95, -335, -685, -755} /* UG,CG,A,C,G */
05201 , { -105, -120, -360, -590, -780} /* UG,CG,A,C,U/T */
05202 }
05203 , {{ -5, -20, -260, -935, -680} /* UG,CG,A,G,E */
05204 , { -425, -440, -680, -1030, -1100} /* UG,CG,A,G,A */
05205 , { -330, -345, -585, -935, -1005} /* UG,CG,A,G,C */
05206 , { -5, -20, -260, -1235, -680} /* UG,CG,A,G,G */
05207 , { -330, -345, -585, -935, -1005} /* UG,CG,A,G,U/T */
05208 }
05209 , {{ -95, -110, -345, -575, -765} /* UG,CG,A,U/T,E */
05210 , { -120, -135, -375, -725, -795} /* UG,CG,A,U/T,A */
05211 , { -95, -110, -345, -575, -765} /* UG,CG,A,U/T,C */
05212 , { -120, -135, -375, -725, -795} /* UG,CG,A,U/T,G */
05213 , { -395, -410, -770, -1120, -1190} /* UG,CG,A,U/T,U/T */
05214 }
05215 }
05216 , {{{ -235, -250, -235, -330, -655} /* UG,CG,C,E,E */
05217 , { -335, -350, -335, -430, -755} /* UG,CG,C,E,A */
05218 , { -305, -320, -305, -400, -725} /* UG,CG,C,E,C */
05219 , { -235, -250, -235, -330, -655} /* UG,CG,C,E,G */
05220 , { -360, -375, -360, -455, -780} /* UG,CG,C,E,U/T */
05221 }
05222 , {{ -415, -440, -415, -520, -835} /* UG,CG,C,A,E */
05223 , { -425, -440, -425, -520, -845} /* UG,CG,C,A,A */

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05224 , { -580, -595, -580, -675, -1000} /* UG,CG,C,A,C */
05225 , { -415, -550, -415, -630, -835} /* UG,CG,C,A,G */
05226 , { -580, -595, -580, -675, -1000} /* UG,CG,C,A,U/T */
05227 }
05228 , { { -335, -350, -335, -430, -755} /* UG,CG,C,C,E */
05229 , { -335, -350, -335, -430, -755} /* UG,CG,C,C,A */
05230 , { -335, -350, -335, -430, -755} /* UG,CG,C,C,C */
05231 , { -335, -350, -335, -430, -755} /* UG,CG,C,C,G */
05232 , { -360, -375, -360, -455, -780} /* UG,CG,C,C,U/T */
05233 }
05234 , { { -260, -275, -260, -355, -680} /* UG,CG,C,G,E */
05235 , { -560, -695, -560, -775, -980} /* UG,CG,C,G,A */
05236 , { -585, -600, -585, -680, -1005} /* UG,CG,C,G,C */
05237 , { -260, -275, -260, -355, -680} /* UG,CG,C,G,G */
05238 , { -585, -600, -585, -680, -1005} /* UG,CG,C,G,U/T */
05239 }
05240 , { { -345, -360, -345, -440, -765} /* UG,CG,C,U/T,E */
05241 , { -375, -390, -375, -470, -795} /* UG,CG,C,U/T,A */
05242 , { -345, -360, -345, -440, -765} /* UG,CG,C,U/T,C */
05243 , { -375, -390, -375, -470, -795} /* UG,CG,C,U/T,G */
05244 , { -770, -785, -770, -865, -1190} /* UG,CG,C,U/T,U/T */
05245 }
05246 }
05247 , { { { 320, -370, -235, 225, -655} /* UG,CG,G,E,E */
05248 , { 290, -520, -335, 195, -755} /* UG,CG,G,E,A */
05249 , { 320, -370, -305, 225, -725} /* UG,CG,G,E,C */
05250 , { 290, -520, -235, 195, -655} /* UG,CG,G,E,G */
05251 , { 265, -425, -360, 170, -780} /* UG,CG,G,E,U/T */
05252 }
05253 , { { 200, -610, -425, 105, -845} /* UG,CG,G,A,E */
05254 , { 200, -610, -425, 105, -845} /* UG,CG,G,A,A */
05255 , { 45, -765, -580, -50, -1000} /* UG,CG,G,A,C */
05256 , { -535, -720, -535, -630, -955} /* UG,CG,G,A,G */
05257 , { 45, -765, -580, -50, -1000} /* UG,CG,G,A,U/T */
05258 }
05259 , { { 290, -400, -335, 195, -755} /* UG,CG,G,C,E */
05260 , { 290, -520, -335, 195, -755} /* UG,CG,G,C,A */
05261 , { 290, -400, -335, 195, -755} /* UG,CG,G,C,C */
05262 , { 290, -520, -335, 195, -755} /* UG,CG,G,C,G */
05263 , { 265, -425, -360, 170, -780} /* UG,CG,G,C,U/T */
05264 }
05265 , { { 40, -770, -260, -55, -680} /* UG,CG,G,G,E */
05266 , { -680, -865, -680, -775, -1100} /* UG,CG,G,G,A */
05267 , { 40, -770, -585, -55, -1005} /* UG,CG,G,G,C */
05268 , { -260, -1070, -260, -980, -680} /* UG,CG,G,G,G */
05269 , { 40, -770, -585, -55, -1005} /* UG,CG,G,G,U/T */
05270 }
05271 , { { 280, -410, -345, 185, -765} /* UG,CG,G,U/T,E */
05272 , { 250, -560, -375, 155, -795} /* UG,CG,G,U/T,A */
05273 , { 280, -410, -345, 185, -765} /* UG,CG,G,U/T,C */
05274 , { 250, -560, -375, 155, -795} /* UG,CG,G,U/T,G */
05275 , { -770, -955, -770, -865, -1190} /* UG,CG,G,U/T,U/T */
05276 }
05277 }
05278 , { { { -235, -250, -235, -330, -705} /* UG,CG,U/T,E,E */
05279 , { -285, -350, -335, -430, -705} /* UG,CG,U/T,E,A */
05280 , { -305, -320, -305, -400, -725} /* UG,CG,U/T,E,C */
05281 , { -235, -250, -235, -330, -755} /* UG,CG,U/T,E,G */
05282 , { -360, -375, -360, -455, -780} /* UG,CG,U/T,E,U/T */
05283 }
05284 , { { -305, -440, -415, -520, -725} /* UG,CG,U/T,A,E */
05285 , { -305, -440, -425, -520, -725} /* UG,CG,U/T,A,A */
05286 , { -580, -595, -580, -675, -1000} /* UG,CG,U/T,A,C */
05287 , { -415, -550, -415, -630, -955} /* UG,CG,U/T,A,G */
05288 , { -580, -595, -580, -675, -1000} /* UG,CG,U/T,A,U/T */
05289 }
05290 , { { -335, -350, -335, -430, -755} /* UG,CG,U/T,C,E */
05291 , { -335, -350, -335, -430, -755} /* UG,CG,U/T,C,A */
05292 , { -335, -350, -335, -430, -755} /* UG,CG,U/T,C,C */
05293 , { -335, -350, -335, -430, -755} /* UG,CG,U/T,C,G */
05294 , { -360, -375, -360, -455, -780} /* UG,CG,U/T,C,U/T */
05295 }
05296 , { { -260, -275, -260, -355, -1005} /* UG,CG,U/T,G,E */
05297 , { -560, -695, -560, -775, -1100} /* UG,CG,U/T,G,A */
05298 , { -585, -600, -585, -680, -1005} /* UG,CG,U/T,G,C */
05299 , { -260, -275, -260, -355, -1305} /* UG,CG,U/T,G,G */
05300 , { -585, -600, -585, -680, -1005} /* UG,CG,U/T,G,U/T */
05301 }
05302 , { { -345, -360, -345, -440, -765} /* UG,CG,U/T,U/T,E */
05303 , { -375, -390, -375, -470, -795} /* UG,CG,U/T,U/T,A */
05304 , { -345, -360, -345, -440, -765} /* UG,CG,U/T,U/T,C */
05305 , { -375, -390, -375, -470, -795} /* UG,CG,U/T,U/T,G */
05306 , { -770, -785, -770, -865, -1190} /* UG,CG,U/T,U/T,U/T */
05307 }
05308 }
05309 }
05310 , { { { { 465, 170, -70, 370, -460} /* UG,CG,E,E,E */
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05311 , { 465, -100, -160, 370, -460} /* UG,GC,E,E,A */
05312 , { 240, -145, -385, 145, -805} /* UG,GC,E,E,C */
05313 , { 285, 170, -70, 190, -490} /* UG,GC,E,E,G */
05314 , { 240, -125, -385, 145, -805} /* UG,GC,E,E,U/T */
05315 }
05316 , { { 200, -410, -425, 105, -725} /* UG,GC,E,A,E */
05317 , { 200, -440, -425, 105, -725} /* UG,GC,E,A,A */
05318 , { -25, -410, -650, -120, -1070} /* UG,GC,E,A,C */
05319 , { -765, -780, -900, -1115, -1320} /* UG,GC,E,A,G */
05320 , { -25, -410, -650, -120, -1070} /* UG,GC,E,A,U/T */
05321 }
05322 , { { 165, -220, -460, 70, -880} /* UG,GC,E,C,E */
05323 , { 165, -220, -460, 70, -880} /* UG,GC,E,C,A */
05324 , { 10, -375, -615, -85, -1035} /* UG,GC,E,C,C */
05325 , { 165, -220, -460, 70, -880} /* UG,GC,E,C,G */
05326 , { 10, -375, -615, -85, -1035} /* UG,GC,E,C,U/T */
05327 }
05328 , { { 30, -40, -280, -65, -700} /* UG,GC,E,G,E */
05329 , { -470, -485, -605, -820, -1025} /* UG,GC,E,G,A */
05330 , { 30, -355, -595, -65, -1015} /* UG,GC,E,G,C */
05331 , { -25, -40, -280, -375, -700} /* UG,GC,E,G,G */
05332 , { 30, -355, -595, -65, -1015} /* UG,GC,E,G,U/T */
05333 }
05334 , { { 285, -100, -340, 190, -760} /* UG,GC,E,U/T,E */
05335 , { 285, -100, -340, 190, -760} /* UG,GC,E,U/T,A */
05336 , { -25, -410, -650, -120, -1070} /* UG,GC,E,U/T,C */
05337 , { 285, -100, -340, 190, -760} /* UG,GC,E,U/T,G */
05338 , { -110, -125, -485, -580, -905} /* UG,GC,E,U/T,U/T */
05339 }
05340 }
05341 , { { { 185, 170, -70, -510, -490} /* UG,GC,A,E,E */
05342 , { -85, -100, -160, -510, -580} /* UG,GC,A,E,A */
05343 , { -130, -145, -385, -725, -805} /* UG,GC,A,E,C */
05344 , { 185, 170, -70, -690, -490} /* UG,GC,A,E,G */
05345 , { -110, -125, -385, -725, -805} /* UG,GC,A,E,U/T */
05346 }
05347 , { { -395, -410, -425, -775, -845} /* UG,GC,A,A,E */
05348 , { -425, -1215, -425, -775, -845} /* UG,GC,A,A,A */
05349 , { -395, -410, -650, -1000, -1070} /* UG,GC,A,A,C */
05350 , { -765, -780, -1020, -1370, -1440} /* UG,GC,A,A,G */
05351 , { -395, -410, -650, -1000, -1070} /* UG,GC,A,A,U/T */
05352 }
05353 , { { -205, -220, -460, -810, -880} /* UG,GC,A,C,E */
05354 , { -205, -220, -460, -810, -880} /* UG,GC,A,C,A */
05355 , { -360, -375, -615, -845, -1035} /* UG,GC,A,C,C */
05356 , { -205, -220, -460, -810, -880} /* UG,GC,A,C,G */
05357 , { -360, -375, -615, -845, -1035} /* UG,GC,A,C,U/T */
05358 }
05359 , { { -25, -40, -280, -945, -700} /* UG,GC,A,G,E */
05360 , { -470, -485, -725, -1075, -1145} /* UG,GC,A,G,A */
05361 , { -340, -355, -595, -945, -1015} /* UG,GC,A,G,C */
05362 , { -25, -40, -280, -1255, -700} /* UG,GC,A,G,G */
05363 , { -340, -355, -595, -945, -1015} /* UG,GC,A,G,U/T */
05364 }
05365 , { { -85, -100, -340, -690, -760} /* UG,GC,A,U/T,E */
05366 , { -85, -100, -340, -690, -760} /* UG,GC,A,U/T,A */
05367 , { -395, -410, -650, -880, -1070} /* UG,GC,A,U/T,C */
05368 , { -85, -100, -340, -690, -760} /* UG,GC,A,U/T,G */
05369 , { -110, -125, -485, -835, -905} /* UG,GC,A,U/T,U/T */
05370 }
05371 }
05372 , { { { -70, -85, -70, -165, -490} /* UG,GC,C,E,E */
05373 , { -160, -175, -160, -255, -580} /* UG,GC,C,E,A */
05374 , { -385, -400, -385, -480, -805} /* UG,GC,C,E,C */
05375 , { -70, -85, -70, -165, -490} /* UG,GC,C,E,G */
05376 , { -385, -400, -385, -480, -805} /* UG,GC,C,E,U/T */
05377 }
05378 , { { -425, -440, -425, -520, -845} /* UG,GC,C,A,E */
05379 , { -425, -440, -425, -520, -845} /* UG,GC,C,A,A */
05380 , { -650, -665, -650, -745, -1070} /* UG,GC,C,A,C */
05381 , { -900, -1035, -900, -1115, -1320} /* UG,GC,C,A,G */
05382 , { -650, -665, -650, -745, -1070} /* UG,GC,C,A,U/T */
05383 }
05384 , { { -460, -475, -460, -555, -880} /* UG,GC,C,C,E */
05385 , { -460, -475, -460, -555, -880} /* UG,GC,C,C,A */
05386 , { -615, -630, -615, -710, -1035} /* UG,GC,C,C,C */
05387 , { -460, -475, -460, -555, -880} /* UG,GC,C,C,G */
05388 , { -615, -630, -615, -710, -1035} /* UG,GC,C,C,U/T */
05389 }
05390 , { { -280, -295, -280, -375, -700} /* UG,GC,C,G,E */
05391 , { -605, -740, -605, -820, -1025} /* UG,GC,C,G,A */
05392 , { -595, -610, -595, -690, -1015} /* UG,GC,C,G,C */
05393 , { -280, -295, -280, -375, -700} /* UG,GC,C,G,G */
05394 , { -595, -610, -595, -690, -1015} /* UG,GC,C,G,U/T */
05395 }
05396 , { { -340, -355, -340, -435, -760} /* UG,GC,C,U/T,E */
05397 , { -340, -355, -340, -435, -760} /* UG,GC,C,U/T,A */

```

```
05398 , { -650, -665, -650, -745, -1070} /* UG,GC,C,U/T,C */
05399 , { -340, -355, -340, -435, -760} /* UG,GC,C,U/T,G */
05400 , { -485, -500, -485, -580, -905} /* UG,GC,C,U/T,U/T */
05401 }
05402 }
05403 , {{ { 465, -345, -70, 370, -490} /* UG,GC,G,E,E */
05404 , { 465, -345, -160, 370, -580} /* UG,GC,G,E,A */
05405 , { 240, -560, -385, 145, -805} /* UG,GC,G,E,C */
05406 , { 285, -525, -70, 190, -490} /* UG,GC,G,E,G */
05407 , { 240, -560, -385, 145, -805} /* UG,GC,G,E,U/T */
05408 }
05409 , {{ { 200, -610, -425, 105, -845} /* UG,GC,G,A,E */
05410 , { 200, -610, -425, 105, -845} /* UG,GC,G,A,A */
05411 , { -25, -835, -650, -120, -1070} /* UG,GC,G,A,C */
05412 , { -1020, -1205, -1020, -1115, -1440} /* UG,GC,G,A,G */
05413 , { -25, -835, -650, -120, -1070} /* UG,GC,G,A,U/T */
05414 }
05415 , {{ { 165, -645, -460, 70, -880} /* UG,GC,G,C,E */
05416 , { 165, -645, -460, 70, -880} /* UG,GC,G,C,A */
05417 , { 10, -680, -615, -85, -1035} /* UG,GC,G,C,C */
05418 , { 165, -645, -460, 70, -880} /* UG,GC,G,C,G */
05419 , { 10, -680, -615, -85, -1035} /* UG,GC,G,C,U/T */
05420 }
05421 , {{ { 30, -780, -280, -65, -700} /* UG,GC,G,G,E */
05422 , { -725, -910, -725, -820, -1145} /* UG,GC,G,G,A */
05423 , { 30, -780, -595, -65, -1015} /* UG,GC,G,G,C */
05424 , { -280, -1090, -280, -1000, -700} /* UG,GC,G,G,G */
05425 , { 30, -780, -595, -65, -1015} /* UG,GC,G,G,U/T */
05426 }
05427 , {{ { 285, -525, -340, 190, -760} /* UG,GC,G,U/T,E */
05428 , { 285, -525, -340, 190, -760} /* UG,GC,G,U/T,A */
05429 , { -25, -715, -650, -120, -1070} /* UG,GC,G,U/T,C */
05430 , { 285, -525, -340, 190, -760} /* UG,GC,G,U/T,G */
05431 , { -485, -670, -485, -580, -905} /* UG,GC,G,U/T,U/T */
05432 }
05433 }
05434 , {{ { -40, -85, -70, -165, -460} /* UG,GC,U/T,E,E */
05435 , { -40, -175, -160, -255, -460} /* UG,GC,U/T,E,A */
05436 , { -385, -400, -385, -480, -805} /* UG,GC,U/T,E,C */
05437 , { -70, -85, -70, -165, -760} /* UG,GC,U/T,E,G */
05438 , { -385, -400, -385, -480, -805} /* UG,GC,U/T,E,U/T */
05439 }
05440 , {{ { -305, -440, -425, -520, -725} /* UG,GC,U/T,A,E */
05441 , { -305, -440, -425, -520, -725} /* UG,GC,U/T,A,A */
05442 , { -650, -665, -650, -745, -1070} /* UG,GC,U/T,A,C */
05443 , { -900, -1035, -900, -1115, -1440} /* UG,GC,U/T,A,G */
05444 , { -650, -665, -650, -745, -1070} /* UG,GC,U/T,A,U/T */
05445 }
05446 , {{ { -460, -475, -460, -555, -880} /* UG,GC,U/T,C,E */
05447 , { -460, -475, -460, -555, -880} /* UG,GC,U/T,C,A */
05448 , { -615, -630, -615, -710, -1035} /* UG,GC,U/T,C,C */
05449 , { -460, -475, -460, -555, -880} /* UG,GC,U/T,C,G */
05450 , { -615, -630, -615, -710, -1035} /* UG,GC,U/T,C,U/T */
05451 }
05452 , {{ { -280, -295, -280, -375, -1015} /* UG,GC,U/T,G,E */
05453 , { -605, -740, -605, -820, -1145} /* UG,GC,U/T,G,A */
05454 , { -595, -610, -595, -690, -1015} /* UG,GC,U/T,G,C */
05455 , { -280, -295, -280, -375, -1325} /* UG,GC,U/T,G,G */
05456 , { -595, -610, -595, -690, -1015} /* UG,GC,U/T,G,U/T */
05457 }
05458 , {{ { -340, -355, -340, -435, -760} /* UG,GC,U/T,U/T,E */
05459 , { -340, -355, -340, -435, -760} /* UG,GC,U/T,U/T,A */
05460 , { -650, -665, -650, -745, -1070} /* UG,GC,U/T,U/T,C */
05461 , { -340, -355, -340, -435, -760} /* UG,GC,U/T,U/T,G */
05462 , { -485, -500, -485, -580, -905} /* UG,GC,U/T,U/T,U/T */
05463 }
05464 }
05465 }
05466 , {{{ { 425, 410, 170, 75, -250} /* UG,GT,E,E,E */
05467 , { 230, 215, -250, 75, -670} /* UG,GT,E,E,A */
05468 , { 170, -215, -455, 75, -875} /* UG,GT,E,E,C */
05469 , { 425, 410, 170, 75, -250} /* UG,GT,E,E,G */
05470 , { 170, -95, -455, 75, -875} /* UG,GT,E,E,U/T */
05471 }
05472 , {{ { -55, -70, -610, -190, -1030} /* UG,GT,E,A,E */
05473 , { -55, -70, -810, -280, -1110} /* UG,GT,E,A,A */
05474 , { -95, -480, -720, -190, -1140} /* UG,GT,E,A,C */
05475 , { -475, -490, -610, -825, -1030} /* UG,GT,E,A,G */
05476 , { -95, -480, -720, -190, -1140} /* UG,GT,E,A,U/T */
05477 }
05478 , {{ { 50, -335, -575, -45, -995} /* UG,GT,E,C,E */
05479 , { 50, -335, -575, -45, -995} /* UG,GT,E,C,A */
05480 , { 50, -335, -575, -45, -995} /* UG,GT,E,C,C */
05481 , { 50, -335, -575, -45, -995} /* UG,GT,E,C,G */
05482 , { 50, -335, -575, -45, -995} /* UG,GT,E,C,U/T */
05483 }
05484 , {{ { 215, 200, -40, -135, -460} /* UG,GT,E,G,E */
```



```

05485 , { 20, 5, -460, -675, -880} /* UG,GT,E,G,A */
05486 , { -40, -425, -665, -135, -1085} /* UG,GT,E,G,C */
05487 , { 215, 200, -40, -135, -460} /* UG,GT,E,G,G */
05488 , { -40, -425, -665, -135, -1085} /* UG,GT,E,G,U/T */
05489 }
05490 , { { 170, -95, -455, 75, -875} /* UG,GT,E,U/T,E */
05491 , { 170, -215, -455, 75, -875} /* UG,GT,E,U/T,A */
05492 , { 170, -215, -455, 75, -875} /* UG,GT,E,U/T,C */
05493 , { 170, -215, -455, 75, -875} /* UG,GT,E,U/T,G */
05494 , { -80, -95, -455, -550, -875} /* UG,GT,E,U/T,U/T */
05495 }
05496 }
05497 , { { { 425, 410, 170, -685, -250} /* UG,GT,A,E,E */
05498 , { 230, 215, -370, -720, -790} /* UG,GT,A,E,A */
05499 , { -200, -215, -455, -685, -875} /* UG,GT,A,E,C */
05500 , { 425, 410, 170, -805, -250} /* UG,GT,A,E,G */
05501 , { -80, -95, -455, -685, -875} /* UG,GT,A,E,U/T */
05502 }
05503 , { { -55, -70, -720, -1070, -1140} /* UG,GT,A,A,E */
05504 , { -55, -70, -810, -1160, -1230} /* UG,GT,A,A,A */
05505 , { -465, -480, -720, -1070, -1140} /* UG,GT,A,A,C */
05506 , { -475, -490, -730, -1080, -1150} /* UG,GT,A,A,G */
05507 , { -465, -480, -720, -1070, -1140} /* UG,GT,A,A,U/T */
05508 }
05509 , { { -320, -335, -575, -805, -995} /* UG,GT,A,C,E */
05510 , { -320, -335, -575, -925, -995} /* UG,GT,A,C,A */
05511 , { -320, -335, -575, -805, -995} /* UG,GT,A,C,C */
05512 , { -320, -335, -575, -925, -995} /* UG,GT,A,C,G */
05513 , { -320, -335, -575, -805, -995} /* UG,GT,A,C,U/T */
05514 }
05515 , { { 215, 200, -40, -930, -460} /* UG,GT,A,G,E */
05516 , { 20, 5, -580, -930, -1000} /* UG,GT,A,G,A */
05517 , { -410, -425, -665, -1015, -1085} /* UG,GT,A,G,C */
05518 , { 215, 200, -40, -1015, -460} /* UG,GT,A,G,G */
05519 , { -410, -425, -665, -1015, -1085} /* UG,GT,A,G,U/T */
05520 }
05521 , { { -80, -95, -455, -685, -875} /* UG,GT,A,U/T,E */
05522 , { -200, -215, -455, -805, -875} /* UG,GT,A,U/T,A */
05523 , { -200, -215, -455, -685, -875} /* UG,GT,A,U/T,C */
05524 , { -200, -215, -455, -805, -875} /* UG,GT,A,U/T,G */
05525 , { -80, -95, -455, -805, -875} /* UG,GT,A,U/T,U/T */
05526 }
05527 }
05528 , { { { 170, 155, 170, 75, -250} /* UG,GT,C,E,E */
05529 , { -250, -385, -250, -465, -670} /* UG,GT,C,E,A */
05530 , { -455, -470, -455, -550, -875} /* UG,GT,C,E,C */
05531 , { 170, 155, 170, 75, -250} /* UG,GT,C,E,G */
05532 , { -455, -470, -455, -550, -875} /* UG,GT,C,E,U/T */
05533 }
05534 , { { -610, -735, -610, -815, -1030} /* UG,GT,C,A,E */
05535 , { -810, -825, -810, -905, -1230} /* UG,GT,C,A,A */
05536 , { -720, -735, -720, -815, -1140} /* UG,GT,C,A,C */
05537 , { -610, -745, -610, -825, -1030} /* UG,GT,C,A,G */
05538 , { -720, -735, -720, -815, -1140} /* UG,GT,C,A,U/T */
05539 }
05540 , { { -575, -590, -575, -670, -995} /* UG,GT,C,C,E */
05541 , { -575, -590, -575, -670, -995} /* UG,GT,C,C,A */
05542 , { -575, -590, -575, -670, -995} /* UG,GT,C,C,C */
05543 , { -575, -590, -575, -670, -995} /* UG,GT,C,C,G */
05544 , { -575, -590, -575, -670, -995} /* UG,GT,C,C,U/T */
05545 }
05546 , { { -40, -55, -40, -135, -460} /* UG,GT,C,G,E */
05547 , { -460, -595, -460, -675, -880} /* UG,GT,C,G,A */
05548 , { -665, -680, -665, -760, -1085} /* UG,GT,C,G,C */
05549 , { -40, -55, -40, -135, -460} /* UG,GT,C,G,G */
05550 , { -665, -680, -665, -760, -1085} /* UG,GT,C,G,U/T */
05551 }
05552 , { { -455, -470, -455, -550, -875} /* UG,GT,C,U/T,E */
05553 , { -455, -470, -455, -550, -875} /* UG,GT,C,U/T,A */
05554 , { -455, -470, -455, -550, -875} /* UG,GT,C,U/T,C */
05555 , { -455, -470, -455, -550, -875} /* UG,GT,C,U/T,G */
05556 , { -455, -470, -455, -550, -875} /* UG,GT,C,U/T,U/T */
05557 }
05558 }
05559 , { { { 170, -520, 170, 75, -250} /* UG,GT,G,E,E */
05560 , { 170, -555, -370, 75, -790} /* UG,GT,G,E,A */
05561 , { 170, -520, -455, 75, -875} /* UG,GT,G,E,C */
05562 , { 170, -640, 170, 75, -250} /* UG,GT,G,E,G */
05563 , { 170, -520, -455, 75, -875} /* UG,GT,G,E,U/T */
05564 }
05565 , { { -95, -835, -720, -190, -1140} /* UG,GT,G,A,E */
05566 , { -185, -835, -810, -280, -1230} /* UG,GT,G,A,A */
05567 , { -95, -905, -720, -190, -1140} /* UG,GT,G,A,C */
05568 , { -730, -1555, -730, -825, -1150} /* UG,GT,G,A,G */
05569 , { -95, -905, -720, -190, -1140} /* UG,GT,G,A,U/T */
05570 }
05571 , { { 50, -640, -575, -45, -995} /* UG,GT,G,C,E */

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05572 , { 50, -760, -575, -45, -995} /* UG,GT,G,C,A */
05573 , { 50, -640, -575, -45, -995} /* UG,GT,G,C,C */
05574 , { 50, -760, -575, -45, -995} /* UG,GT,G,C,G */
05575 , { 50, -640, -575, -45, -995} /* UG,GT,G,C,U/T */
05576 }
05577 , { { -40, -765, -40, -135, -460} /* UG,GT,G,G,E */
05578 , { -580, -765, -580, -675, -1000} /* UG,GT,G,G,A */
05579 , { -40, -850, -665, -135, -1085} /* UG,GT,G,G,C */
05580 , { -40, -850, -40, -760, -460} /* UG,GT,G,G,G */
05581 , { -40, -850, -665, -135, -1085} /* UG,GT,G,G,U/T */
05582 }
05583 , { { 170, -520, -455, 75, -875} /* UG,GT,G,U/T,E */
05584 , { 170, -640, -455, 75, -875} /* UG,GT,G,U/T,A */
05585 , { 170, -520, -455, 75, -875} /* UG,GT,G,U/T,C */
05586 , { 170, -640, -455, 75, -875} /* UG,GT,G,U/T,G */
05587 , { -455, -640, -455, -550, -875} /* UG,GT,G,U/T,U/T */
05588 }
05589 }
05590 , { { { 170, 155, 170, 75, -790} /* UG,GT,U/T,E,E */
05591 , { -250, -385, -250, -465, -790} /* UG,GT,U/T,E,A */
05592 , { -455, -470, -455, -550, -875} /* UG,GT,U/T,E,C */
05593 , { 170, 155, 170, 75, -875} /* UG,GT,U/T,E,G */
05594 , { -455, -470, -455, -550, -875} /* UG,GT,U/T,E,U/T */
05595 }
05596 , { { -610, -735, -610, -815, -1110} /* UG,GT,U/T,A,E */
05597 , { -690, -825, -810, -905, -1110} /* UG,GT,U/T,A,A */
05598 , { -720, -735, -720, -815, -1140} /* UG,GT,U/T,A,C */
05599 , { -610, -745, -610, -825, -1150} /* UG,GT,U/T,A,G */
05600 , { -720, -735, -720, -815, -1140} /* UG,GT,U/T,A,U/T */
05601 }
05602 , { { -575, -590, -575, -670, -995} /* UG,GT,U/T,C,E */
05603 , { -575, -590, -575, -670, -995} /* UG,GT,U/T,C,A */
05604 , { -575, -590, -575, -670, -995} /* UG,GT,U/T,C,C */
05605 , { -575, -590, -575, -670, -995} /* UG,GT,U/T,C,G */
05606 , { -575, -590, -575, -670, -995} /* UG,GT,U/T,C,U/T */
05607 }
05608 , { { -40, -55, -40, -135, -1000} /* UG,GT,U/T,G,E */
05609 , { -460, -595, -460, -675, -1000} /* UG,GT,U/T,G,A */
05610 , { -665, -680, -665, -760, -1085} /* UG,GT,U/T,G,C */
05611 , { -40, -55, -40, -135, -1085} /* UG,GT,U/T,G,G */
05612 , { -665, -680, -665, -760, -1085} /* UG,GT,U/T,G,U/T */
05613 }
05614 , { { -455, -470, -455, -550, -875} /* UG,GT,U/T,U/T,E */
05615 , { -455, -470, -455, -550, -875} /* UG,GT,U/T,U/T,A */
05616 , { -455, -470, -455, -550, -875} /* UG,GT,U/T,U/T,C */
05617 , { -455, -470, -455, -550, -875} /* UG,GT,U/T,U/T,G */
05618 , { -455, -470, -455, -550, -875} /* UG,GT,U/T,U/T,U/T */
05619 }
05620 }
05621 }
05622 , { { { { 715, 700, 460, 620, 40} /* UG,UG,E,E,E */
05623 , { 715, 330, 90, 620, -210} /* UG,UG,E,E,A */
05624 , { 460, 75, -165, 365, -585} /* UG,UG,E,E,C */
05625 , { 715, 700, 460, 365, 40} /* UG,UG,E,E,G */
05626 , { 460, 195, -165, 365, -585} /* UG,UG,E,E,U/T */
05627 }
05628 , { { 700, 315, 75, 605, -225} /* UG,UG,E,A,E */
05629 , { 700, 315, 75, 605, -225} /* UG,UG,E,A,A */
05630 , { 445, 60, -180, 350, -600} /* UG,UG,E,A,C */
05631 , { -95, -110, -230, -445, -650} /* UG,UG,E,A,G */
05632 , { 445, 60, -180, 350, -600} /* UG,UG,E,A,U/T */
05633 }
05634 , { { 460, 75, -165, 365, -585} /* UG,UG,E,C,E */
05635 , { 460, 75, -165, 365, -585} /* UG,UG,E,C,A */
05636 , { 460, 75, -165, 365, -585} /* UG,UG,E,C,C */
05637 , { 460, 75, -165, 365, -585} /* UG,UG,E,C,G */
05638 , { 460, 75, -165, 365, -585} /* UG,UG,E,C,U/T */
05639 }
05640 , { { 620, 605, 365, 270, -55} /* UG,UG,E,G,E */
05641 , { -260, -275, -395, -610, -815} /* UG,UG,E,G,A */
05642 , { 365, -20, -260, 270, -680} /* UG,UG,E,G,C */
05643 , { 620, 605, 365, 270, -55} /* UG,UG,E,G,G */
05644 , { 365, -20, -260, 270, -680} /* UG,UG,E,G,U/T */
05645 }
05646 , { { 40, -225, -585, -55, -1005} /* UG,UG,E,U/T,E */
05647 , { 40, -345, -585, -55, -1005} /* UG,UG,E,U/T,A */
05648 , { 40, -345, -585, -55, -1005} /* UG,UG,E,U/T,C */
05649 , { 40, -345, -585, -55, -1005} /* UG,UG,E,U/T,G */
05650 , { -210, -225, -585, -680, -1005} /* UG,UG,E,U/T,U/T */
05651 }
05652 }
05653 , { { { 715, 700, 460, -260, 40} /* UG,UG,A,E,E */
05654 , { 345, 330, 90, -260, -330} /* UG,UG,A,E,A */
05655 , { 90, 75, -165, -395, -585} /* UG,UG,A,E,C */
05656 , { 715, 700, 460, -515, 40} /* UG,UG,A,E,G */
05657 , { 210, 195, -165, -395, -585} /* UG,UG,A,E,U/T */
05658 }
```

```

05659 ,{{ 330, 315, 75, -275, -345} /* UG,UG,A,A,E */
05660 ,{ 330, 315, 75, -275, -345} /* UG,UG,A,A,A */
05661 ,{ 75, 60, -180, -530, -600} /* UG,UG,A,A,C */
05662 ,{ -95, -110, -350, -700, -770} /* UG,UG,A,A,G */
05663 ,{ 75, 60, -180, -530, -600} /* UG,UG,A,A,U/T */
05664 }
05665 ,{{ 90, 75, -165, -395, -585} /* UG,UG,A,C,E */
05666 ,{ 90, 75, -165, -515, -585} /* UG,UG,A,C,A */
05667 ,{ 90, 75, -165, -395, -585} /* UG,UG,A,C,C */
05668 ,{ 90, 75, -165, -515, -585} /* UG,UG,A,C,G */
05669 ,{ 90, 75, -165, -395, -585} /* UG,UG,A,C,U/T */
05670 }
05671 ,{{ 620, 605, 365, -610, -55} /* UG,UG,A,G,E */
05672 ,{ -260, -275, -515, -865, -935} /* UG,UG,A,G,A */
05673 ,{ -5, -20, -260, -610, -680} /* UG,UG,A,G,C */
05674 ,{ 620, 605, 365, -610, -55} /* UG,UG,A,G,G */
05675 ,{ -5, -20, -260, -610, -680} /* UG,UG,A,G,U/T */
05676 }
05677 ,{{ -210, -225, -585, -815, -1005} /* UG,UG,A,U/T,E */
05678 ,{ -330, -345, -585, -935, -1005} /* UG,UG,A,U/T,A */
05679 ,{ -330, -345, -585, -815, -1005} /* UG,UG,A,U/T,C */
05680 ,{ -330, -345, -585, -935, -1005} /* UG,UG,A,U/T,G */
05681 ,{ -210, -225, -585, -935, -1005} /* UG,UG,A,U/T,U/T */
05682 }
05683 }
05684 ,{{{ 460, 445, 460, 365, 40} /* UG,UG,C,E,E */
05685 ,{ 90, 75, 90, -5, -330} /* UG,UG,C,E,A */
05686 ,{ -165, -180, -165, -260, -585} /* UG,UG,C,E,C */
05687 ,{ 460, 445, 460, 365, 40} /* UG,UG,C,E,G */
05688 ,{ -165, -180, -165, -260, -585} /* UG,UG,C,E,U/T */
05689 }
05690 ,{{ 75, 60, 75, -20, -345} /* UG,UG,C,A,E */
05691 ,{ 75, 60, 75, -20, -345} /* UG,UG,C,A,A */
05692 ,{ -180, -195, -180, -275, -600} /* UG,UG,C,A,C */
05693 ,{ -230, -365, -230, -445, -650} /* UG,UG,C,A,G */
05694 ,{ -180, -195, -180, -275, -600} /* UG,UG,C,A,U/T */
05695 }
05696 ,{{{ -165, -180, -165, -260, -585} /* UG,UG,C,C,E */
05697 ,{ -165, -180, -165, -260, -585} /* UG,UG,C,C,A */
05698 ,{ -165, -180, -165, -260, -585} /* UG,UG,C,C,C */
05699 ,{ -165, -180, -165, -260, -585} /* UG,UG,C,C,G */
05700 ,{ -165, -180, -165, -260, -585} /* UG,UG,C,C,U/T */
05701 }
05702 ,{{{ 365, 350, 365, 270, -55} /* UG,UG,C,G,E */
05703 ,{ -395, -530, -395, -610, -815} /* UG,UG,C,G,A */
05704 ,{ -260, -275, -260, -355, -680} /* UG,UG,C,G,C */
05705 ,{ 365, 350, 365, 270, -55} /* UG,UG,C,G,G */
05706 ,{ -260, -275, -260, -355, -680} /* UG,UG,C,G,U/T */
05707 }
05708 ,{{{ -585, -600, -585, -680, -1005} /* UG,UG,C,U/T,E */
05709 ,{ -585, -600, -585, -680, -1005} /* UG,UG,C,U/T,A */
05710 ,{ -585, -600, -585, -680, -1005} /* UG,UG,C,U/T,C */
05711 ,{ -585, -600, -585, -680, -1005} /* UG,UG,C,U/T,G */
05712 ,{ -585, -600, -585, -680, -1005} /* UG,UG,C,U/T,U/T */
05713 }
05714 }
05715 ,{{{ 715, -95, 460, 620, 40} /* UG,UG,G,E,E */
05716 ,{ 715, -95, 90, 620, -330} /* UG,UG,G,E,A */
05717 ,{ 460, -230, -165, 365, -585} /* UG,UG,G,E,C */
05718 ,{ 460, -350, 460, 365, 40} /* UG,UG,G,E,G */
05719 ,{ 460, -230, -165, 365, -585} /* UG,UG,G,E,U/T */
05720 }
05721 ,{{{ 700, -110, 75, 605, -345} /* UG,UG,G,A,E */
05722 ,{ 700, -110, 75, 605, -345} /* UG,UG,G,A,A */
05723 ,{ 445, -365, -180, 350, -600} /* UG,UG,G,A,C */
05724 ,{ -350, -535, -350, -445, -770} /* UG,UG,G,A,G */
05725 ,{ 445, -365, -180, 350, -600} /* UG,UG,G,A,U/T */
05726 }
05727 ,{{{ 460, -230, -165, 365, -585} /* UG,UG,G,C,E */
05728 ,{ 460, -350, -165, 365, -585} /* UG,UG,G,C,A */
05729 ,{ 460, -230, -165, 365, -585} /* UG,UG,G,C,C */
05730 ,{ 460, -350, -165, 365, -585} /* UG,UG,G,C,G */
05731 ,{ 460, -230, -165, 365, -585} /* UG,UG,G,C,U/T */
05732 }
05733 ,{{{ 365, -445, 365, 270, -55} /* UG,UG,G,G,E */
05734 ,{ -515, -700, -515, -610, -935} /* UG,UG,G,G,A */
05735 ,{ 365, -445, -260, 270, -680} /* UG,UG,G,G,C */
05736 ,{ 365, -445, 365, -355, -55} /* UG,UG,G,G,G */
05737 ,{ 365, -445, -260, 270, -680} /* UG,UG,G,G,U/T */
05738 }
05739 ,{{{ 40, -650, -585, -55, -1005} /* UG,UG,G,U/T,E */
05740 ,{ 40, -770, -585, -55, -1005} /* UG,UG,G,U/T,A */
05741 ,{ 40, -650, -585, -55, -1005} /* UG,UG,G,U/T,C */
05742 ,{ 40, -770, -585, -55, -1005} /* UG,UG,G,U/T,G */
05743 ,{ -585, -770, -585, -680, -1005} /* UG,UG,G,U/T,U/T */
05744 }
05745 }

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05746 ,{{{ 460, 445, 460, 365, -210} /* UG,UG,U/T,E,E */
05747 ,{ 210, 75, 90, -5, -210} /* UG,UG,U/T,E,A */
05748 ,{ -165, -180, -165, -260, -585} /* UG,UG,U/T,E,C */
05749 ,{ 460, 445, 460, 365, -585} /* UG,UG,U/T,E,G */
05750 ,{ -165, -180, -165, -260, -585} /* UG,UG,U/T,E,U/T */
05751 }
05752 ,{{{ 195, 60, 75, -20, -225} /* UG,UG,U/T,A,E */
05753 ,{ 195, 60, 75, -20, -225} /* UG,UG,U/T,A,A */
05754 ,{ -180, -195, -180, -275, -600} /* UG,UG,U/T,A,C */
05755 ,{ -230, -365, -230, -445, -770} /* UG,UG,U/T,A,G */
05756 ,{ -180, -195, -180, -275, -600} /* UG,UG,U/T,A,U/T */
05757 }
05758 ,{{{ -165, -180, -165, -260, -585} /* UG,UG,U/T,C,E */
05759 ,{ -165, -180, -165, -260, -585} /* UG,UG,U/T,C,A */
05760 ,{ -165, -180, -165, -260, -585} /* UG,UG,U/T,C,C */
05761 ,{ -165, -180, -165, -260, -585} /* UG,UG,U/T,C,G */
05762 ,{ -165, -180, -165, -260, -585} /* UG,UG,U/T,C,U/T */
05763 }
05764 ,{{{ 365, 350, 365, 270, -680} /* UG,UG,U/T,G,E */
05765 ,{ -395, -530, -395, -610, -935} /* UG,UG,U/T,G,A */
05766 ,{ -260, -275, -260, -355, -680} /* UG,UG,U/T,G,C */
05767 ,{ 365, 350, 365, 270, -680} /* UG,UG,U/T,G,G */
05768 ,{ -260, -275, -260, -355, -680} /* UG,UG,U/T,G,U/T */
05769 }
05770 ,{{{ -585, -600, -585, -680, -1005} /* UG,UG,U/T,U/T,E */
05771 ,{ -585, -600, -585, -680, -1005} /* UG,UG,U/T,U/T,A */
05772 ,{ -585, -600, -585, -680, -1005} /* UG,UG,U/T,U/T,C */
05773 ,{ -585, -600, -585, -680, -1005} /* UG,UG,U/T,U/T,G */
05774 ,{ -585, -600, -585, -680, -1005} /* UG,UG,U/T,U/T,U/T */
05775 }
05776 }
05777 ,{{{ 1135, 1015, 780, 1040, 360} /* UG,AT,E,E,E */
05778 ,{ 1135, 750, 510, 1040, 210} /* UG,AT,E,E,A */
05779 ,{ 990, 600, 365, 895, -55} /* UG,AT,E,E,C */
05780 ,{ 1030, 1015, 780, 895, 360} /* UG,AT,E,E,G */
05781 ,{ 990, 600, 365, 895, -55} /* UG,AT,E,E,U/T */
05782 }
05783 ,{{{ 1075, 690, 450, 980, 150} /* UG,AT,E,A,E */
05784 ,{ 1075, 690, 450, 980, 150} /* UG,AT,E,A,A */
05785 ,{ 925, 535, 300, 830, -120} /* UG,AT,E,A,C */
05786 ,{ 15, 0, -120, -335, -540} /* UG,AT,E,A,G */
05787 ,{ 925, 535, 300, 830, -120} /* UG,AT,E,A,U/T */
05788 }
05789 ,{{{ 990, 605, 365, 895, -55} /* UG,AT,E,C,E */
05790 ,{ 990, 605, 365, 895, -55} /* UG,AT,E,C,A */
05791 ,{ 990, 600, 365, 895, -55} /* UG,AT,E,C,C */
05792 ,{ 990, 605, 365, 895, -55} /* UG,AT,E,C,G */
05793 ,{ 990, 600, 365, 895, -55} /* UG,AT,E,C,U/T */
05794 }
05795 ,{{{ 1005, 990, 755, 865, 335} /* UG,AT,E,G,E */
05796 ,{ 140, 125, 5, -210, -415} /* UG,AT,E,G,A */
05797 ,{ 960, 570, 335, 865, -85} /* UG,AT,E,G,C */
05798 ,{ 1005, 990, 755, 865, 335} /* UG,AT,E,G,G */
05799 ,{ 960, 570, 335, 865, -85} /* UG,AT,E,G,U/T */
05800 }
05801 ,{{{ 945, 560, 320, 850, -100} /* UG,AT,E,U/T,E */
05802 ,{ 945, 560, 320, 850, -100} /* UG,AT,E,U/T,A */
05803 ,{ 945, 555, 320, 850, -100} /* UG,AT,E,U/T,C */
05804 ,{ 945, 560, 320, 850, -100} /* UG,AT,E,U/T,G */
05805 ,{ 205, 190, -170, -265, -590} /* UG,AT,E,U/T,U/T */
05806 }
05807 }
05808 ,{{{ 1030, 1015, 780, 165, 360} /* UG,AT,A,E,E */
05809 ,{ 765, 700, 510, 165, 90} /* UG,AT,A,E,A */
05810 ,{ 615, 600, 365, 135, -55} /* UG,AT,A,E,C */
05811 ,{ 1030, 1015, 780, 15, 360} /* UG,AT,A,E,G */
05812 ,{ 615, 600, 365, 135, -55} /* UG,AT,A,E,U/T */
05813 }
05814 ,{{{ 705, 690, 450, 105, 30} /* UG,AT,A,A,E */
05815 ,{ 705, 690, 450, 105, 30} /* UG,AT,A,A,A */
05816 ,{ 550, 535, 300, -50, -120} /* UG,AT,A,A,C */
05817 ,{ 15, 0, -240, -590, -660} /* UG,AT,A,A,G */
05818 ,{ 550, 535, 300, -50, -120} /* UG,AT,A,A,U/T */
05819 }
05820 ,{{{ 620, 605, 365, 135, -55} /* UG,AT,A,C,E */
05821 ,{ 620, 605, 365, 15, -55} /* UG,AT,A,C,A */
05822 ,{ 615, 600, 365, 135, -55} /* UG,AT,A,C,C */
05823 ,{ 620, 605, 365, 15, -55} /* UG,AT,A,C,G */
05824 ,{ 615, 600, 365, 135, -55} /* UG,AT,A,C,U/T */
05825 }
05826 ,{{{ 1005, 990, 755, -15, 335} /* UG,AT,A,G,E */
05827 ,{ 140, 125, -115, -465, -535} /* UG,AT,A,G,A */
05828 ,{ 585, 570, 335, -15, -85} /* UG,AT,A,G,C */
05829 ,{ 1005, 990, 755, -220, 335} /* UG,AT,A,G,G */
05830 ,{ 585, 570, 335, -15, -85} /* UG,AT,A,G,U/T */
05831 }
05832 }
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05833 ,{{ 575, 560, 320, 90, -100} /* UG,AT,A,U/T,E */
05834 ,{ 575, 560, 320, -30, -100} /* UG,AT,A,U/T,A */
05835 ,{ 570, 555, 320, 90, -100} /* UG,AT,A,U/T,C */
05836 ,{ 575, 560, 320, -30, -100} /* UG,AT,A,U/T,G */
05837 ,{ 205, 190, -170, -520, -590} /* UG,AT,A,U/T,U/T */
05838 }
05839 }
05840 ,{{{ 780, 765, 780, 685, 360} /* UG,AT,C,E,E */
05841 ,{ 510, 495, 510, 415, 90} /* UG,AT,C,E,A */
05842 ,{ 365, 350, 365, 270, -55} /* UG,AT,C,E,C */
05843 ,{ 780, 765, 780, 685, 360} /* UG,AT,C,E,G */
05844 ,{ 365, 350, 365, 270, -55} /* UG,AT,C,E,U/T */
05845 }
05846 ,{{ 450, 435, 450, 355, 30} /* UG,AT,C,A,E */
05847 ,{ 450, 435, 450, 355, 30} /* UG,AT,C,A,A */
05848 ,{ 300, 285, 300, 205, -120} /* UG,AT,C,A,C */
05849 ,{ -120, -255, -120, -335, -540} /* UG,AT,C,A,G */
05850 ,{ 300, 285, 300, 205, -120} /* UG,AT,C,A,U/T */
05851 }
05852 ,{{ 365, 350, 365, 270, -55} /* UG,AT,C,C,E */
05853 ,{ 365, 350, 365, 270, -55} /* UG,AT,C,C,A */
05854 ,{ 365, 350, 365, 270, -55} /* UG,AT,C,C,C */
05855 ,{ 365, 350, 365, 270, -55} /* UG,AT,C,C,G */
05856 ,{ 365, 350, 365, 270, -55} /* UG,AT,C,C,U/T */
05857 }
05858 ,{{ 755, 740, 755, 660, 335} /* UG,AT,C,G,E */
05859 ,{ 5, -130, 5, -210, -415} /* UG,AT,C,G,A */
05860 ,{ 335, 320, 335, 240, -85} /* UG,AT,C,G,C */
05861 ,{ 755, 740, 755, 660, 335} /* UG,AT,C,G,G */
05862 ,{ 335, 320, 335, 240, -85} /* UG,AT,C,G,U/T */
05863 }
05864 ,{{ 320, 305, 320, 225, -100} /* UG,AT,C,U/T,E */
05865 ,{ 320, 305, 320, 225, -100} /* UG,AT,C,U/T,A */
05866 ,{ 320, 305, 320, 225, -100} /* UG,AT,C,U/T,C */
05867 ,{ 320, 305, 320, 225, -100} /* UG,AT,C,U/T,G */
05868 ,{ -170, -185, -170, -265, -590} /* UG,AT,C,U/T,U/T */
05869 }
05870 }
05871 ,{{{ 1135, 330, 780, 1040, 360} /* UG,AT,G,E,E */
05872 ,{ 1135, 330, 510, 1040, 90} /* UG,AT,G,E,A */
05873 ,{ 990, 300, 365, 895, -55} /* UG,AT,G,E,C */
05874 ,{ 990, 180, 780, 895, 360} /* UG,AT,G,E,G */
05875 ,{ 990, 300, 365, 895, -55} /* UG,AT,G,E,U/T */
05876 }
05877 ,{{ 1075, 270, 450, 980, 30} /* UG,AT,G,A,E */
05878 ,{ 1075, 270, 450, 980, 30} /* UG,AT,G,A,A */
05879 ,{ 925, 115, 300, 830, -120} /* UG,AT,G,A,C */
05880 ,{ -240, -425, -240, -335, -660} /* UG,AT,G,A,G */
05881 ,{ 925, 115, 300, 830, -120} /* UG,AT,G,A,U/T */
05882 }
05883 ,{{ 990, 300, 365, 895, -55} /* UG,AT,G,C,E */
05884 ,{ 990, 180, 365, 895, -55} /* UG,AT,G,C,A */
05885 ,{ 990, 300, 365, 895, -55} /* UG,AT,G,C,C */
05886 ,{ 990, 180, 365, 895, -55} /* UG,AT,G,C,G */
05887 ,{ 990, 300, 365, 895, -55} /* UG,AT,G,C,U/T */
05888 }
05889 ,{{ 960, 150, 755, 865, 335} /* UG,AT,G,G,E */
05890 ,{ -115, -300, -115, -210, -535} /* UG,AT,G,G,A */
05891 ,{ 960, 150, 335, 865, -85} /* UG,AT,G,G,C */
05892 ,{ 755, -55, 755, 35, 335} /* UG,AT,G,G,G */
05893 ,{ 960, 150, 335, 865, -85} /* UG,AT,G,G,U/T */
05894 }
05895 ,{{ 945, 255, 320, 850, -100} /* UG,AT,G,U/T,E */
05896 ,{ 945, 135, 320, 850, -100} /* UG,AT,G,U/T,A */
05897 ,{ 945, 255, 320, 850, -100} /* UG,AT,G,U/T,C */
05898 ,{ 945, 135, 320, 850, -100} /* UG,AT,G,U/T,G */
05899 ,{ -170, -355, -170, -265, -590} /* UG,AT,G,U/T,U/T */
05900 }
05901 }
05902 ,{{{ 780, 765, 780, 685, 210} /* UG,AT,U/T,E,E */
05903 ,{ 630, 495, 510, 415, 210} /* UG,AT,U/T,E,A */
05904 ,{ 365, 350, 365, 270, -55} /* UG,AT,U/T,E,C */
05905 ,{ 780, 765, 780, 685, -55} /* UG,AT,U/T,E,G */
05906 ,{ 365, 350, 365, 270, -55} /* UG,AT,U/T,E,U/T */
05907 }
05908 ,{{ 570, 435, 450, 355, 150} /* UG,AT,U/T,A,E */
05909 ,{ 570, 435, 450, 355, 150} /* UG,AT,U/T,A,A */
05910 ,{ 300, 285, 300, 205, -120} /* UG,AT,U/T,A,C */
05911 ,{ -120, -255, -120, -335, -660} /* UG,AT,U/T,A,G */
05912 ,{ 300, 285, 300, 205, -120} /* UG,AT,U/T,A,U/T */
05913 }
05914 ,{{ 365, 350, 365, 270, -55} /* UG,AT,U/T,C,E */
05915 ,{ 365, 350, 365, 270, -55} /* UG,AT,U/T,C,A */
05916 ,{ 365, 350, 365, 270, -55} /* UG,AT,U/T,C,C */
05917 ,{ 365, 350, 365, 270, -55} /* UG,AT,U/T,C,G */
05918 ,{ 365, 350, 365, 270, -55} /* UG,AT,U/T,C,U/T */
05919 }

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05920 ,{{ 755, 740, 755, 660, -85} /* UG,AT,U/T,G,E */
05921 ,{ 5, -130, 5, -210, -535} /* UG,AT,U/T,G,A */
05922 ,{ 335, 320, 335, 240, -85} /* UG,AT,U/T,G,C */
05923 ,{ 755, 740, 755, 660, -290} /* UG,AT,U/T,G,G */
05924 ,{ 335, 320, 335, 240, -85} /* UG,AT,U/T,G,U/T */
05925 }
05926 ,{{ 320, 305, 320, 225, -100} /* UG,AT,U/T,U/T,E */
05927 ,{ 320, 305, 320, 225, -100} /* UG,AT,U/T,U/T,A */
05928 ,{ 320, 305, 320, 225, -100} /* UG,AT,U/T,U/T,C */
05929 ,{ 320, 305, 320, 225, -100} /* UG,AT,U/T,U/T,G */
05930 ,{ -170, -185, -170, -265, -590} /* UG,AT,U/T,U/T,U/T */
05931 }
05932 }
05933 }
05934 ,{{{ 1040, 980, 740, 945, 320} /* UG,UA,E,E,E */
05935 ,{ 1040, 655, 415, 945, 115} /* UG,UA,E,E,A */
05936 ,{ 975, 590, 350, 880, -70} /* UG,UA,E,E,C */
05937 ,{ 995, 980, 740, 880, 320} /* UG,UA,E,E,G */
05938 ,{ 910, 525, 285, 815, -135} /* UG,UA,E,E,U/T */
05939 }
05940 ,{{ 1025, 640, 400, 930, 100} /* UG,UA,E,A,E */
05941 ,{ 1025, 640, 400, 930, 100} /* UG,UA,E,A,A */
05942 ,{ 885, 500, 260, 790, -160} /* UG,UA,E,A,C */
05943 ,{ -45, -60, -180, -395, -600} /* UG,UA,E,A,G */
05944 ,{ 885, 500, 260, 790, -160} /* UG,UA,E,A,U/T */
05945 }
05946 ,{{ 975, 590, 350, 880, -70} /* UG,UA,E,C,E */
05947 ,{ 975, 590, 350, 880, -70} /* UG,UA,E,C,A */
05948 ,{ 975, 590, 350, 880, -70} /* UG,UA,E,C,C */
05949 ,{ 975, 590, 350, 880, -70} /* UG,UA,E,C,G */
05950 ,{ 910, 525, 285, 815, -135} /* UG,UA,E,C,U/T */
05951 }
05952 ,{{ 900, 885, 645, 710, 225} /* UG,UA,E,G,E */
05953 ,{ -275, -290, -410, -625, -830} /* UG,UA,E,G,A */
05954 ,{ 805, 420, 180, 710, -240} /* UG,UA,E,G,C */
05955 ,{ 900, 885, 645, 550, 225} /* UG,UA,E,G,G */
05956 ,{ 805, 420, 180, 710, -240} /* UG,UA,E,G,U/T */
05957 }
05958 ,{{ 555, 170, -70, 460, -490} /* UG,UA,E,U/T,E */
05959 ,{ 555, 170, -70, 460, -490} /* UG,UA,E,U/T,A */
05960 ,{ 335, -50, -290, 240, -710} /* UG,UA,E,U/T,C */
05961 ,{ 555, 170, -70, 460, -490} /* UG,UA,E,U/T,G */
05962 ,{ -165, -180, -540, -635, -960} /* UG,UA,E,U/T,U/T */
05963 }
05964 }
05965 ,{{{ 995, 980, 740, 120, 320} /* UG,UA,A,E,E */
05966 ,{ 670, 655, 415, 65, -5} /* UG,UA,A,E,A */
05967 ,{ 605, 590, 350, 120, -70} /* UG,UA,A,E,C */
05968 ,{ 995, 980, 740, 0, 320} /* UG,UA,A,E,G */
05969 ,{ 540, 525, 285, 55, -135} /* UG,UA,A,E,U/T */
05970 }
05971 ,{{ 655, 640, 400, 50, -20} /* UG,UA,A,A,E */
05972 ,{ 655, 640, 400, 50, -20} /* UG,UA,A,A,A */
05973 ,{ 515, 500, 260, -90, -160} /* UG,UA,A,A,C */
05974 ,{ -45, -60, -300, -650, -720} /* UG,UA,A,A,G */
05975 ,{ 515, 500, 260, -90, -160} /* UG,UA,A,A,U/T */
05976 }
05977 ,{{ 605, 590, 350, 120, -70} /* UG,UA,A,C,E */
05978 ,{ 605, 590, 350, 0, -70} /* UG,UA,A,C,A */
05979 ,{ 605, 590, 350, 120, -70} /* UG,UA,A,C,C */
05980 ,{ 605, 590, 350, 0, -70} /* UG,UA,A,C,G */
05981 ,{ 540, 525, 285, 55, -135} /* UG,UA,A,C,U/T */
05982 }
05983 ,{{ 900, 885, 645, -170, 225} /* UG,UA,A,G,E */
05984 ,{ -275, -290, -530, -880, -950} /* UG,UA,A,G,A */
05985 ,{ 435, 420, 180, -170, -240} /* UG,UA,A,G,C */
05986 ,{ 900, 885, 645, -330, 225} /* UG,UA,A,G,G */
05987 ,{ 435, 420, 180, -170, -240} /* UG,UA,A,G,U/T */
05988 }
05989 ,{{ 185, 170, -70, -420, -490} /* UG,UA,A,U/T,E */
05990 ,{ 185, 170, -70, -420, -490} /* UG,UA,A,U/T,A */
05991 ,{ -35, -50, -290, -520, -710} /* UG,UA,A,U/T,C */
05992 ,{ 185, 170, -70, -420, -490} /* UG,UA,A,U/T,G */
05993 ,{ -165, -180, -540, -890, -960} /* UG,UA,A,U/T,U/T */
05994 }
05995 }
05996 ,{{{ 740, 725, 740, 645, 320} /* UG,UA,C,E,E */
05997 ,{ 415, 400, 415, 320, -5} /* UG,UA,C,E,A */
05998 ,{ 350, 335, 350, 255, -70} /* UG,UA,C,E,C */
05999 ,{ 740, 725, 740, 645, 320} /* UG,UA,C,E,G */
06000 ,{ 285, 270, 285, 190, -135} /* UG,UA,C,E,U/T */
06001 }
06002 ,{{ 400, 385, 400, 305, -20} /* UG,UA,C,A,E */
06003 ,{ 400, 385, 400, 305, -20} /* UG,UA,C,A,A */
06004 ,{ 260, 245, 260, 165, -160} /* UG,UA,C,A,C */
06005 ,{ -180, -315, -180, -395, -600} /* UG,UA,C,A,G */
06006 ,{ 260, 245, 260, 165, -160} /* UG,UA,C,A,U/T */
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06007      }
06008      ,{{      350,      335,      350,      255,      -70} /* UG,UA,C,C,E */
06009      ,{      350,      335,      350,      255,      -70} /* UG,UA,C,C,A */
06010      ,{      350,      335,      350,      255,      -70} /* UG,UA,C,C,C */
06011      ,{      350,      335,      350,      255,      -70} /* UG,UA,C,C,G */
06012      ,{      285,      270,      285,      190,     -135} /* UG,UA,C,C,U/T */
06013      }
06014      ,{{      645,      630,      645,      550,      225} /* UG,UA,C,G,E */
06015      ,{     -410,     -545,     -410,     -625,     -830} /* UG,UA,C,G,A */
06016      ,{      180,      165,      180,       85,     -240} /* UG,UA,C,G,C */
06017      ,{      645,      630,      645,      550,      225} /* UG,UA,C,G,G */
06018      ,{      180,      165,      180,       85,     -240} /* UG,UA,C,G,U/T */
06019      }
06020      ,{{      -70,      -85,      -70,     -165,     -490} /* UG,UA,C,U/T,E */
06021      ,{      -70,      -85,      -70,     -165,     -490} /* UG,UA,C,U/T,A */
06022      ,{     -290,     -305,     -290,     -385,     -710} /* UG,UA,C,U/T,C */
06023      ,{      -70,      -85,      -70,     -165,     -490} /* UG,UA,C,U/T,G */
06024      ,{     -540,     -555,     -540,     -635,     -960} /* UG,UA,C,U/T,U/T */
06025      }
06026      }
06027      ,{{{      1040,      285,      740,      945,      320} /* UG,UA,G,E,E */
06028      ,{      1040,      230,      415,      945,       -5} /* UG,UA,G,E,A */
06029      ,{      975,      285,      350,      880,     -70} /* UG,UA,G,E,C */
06030      ,{      975,      165,      740,      880,      320} /* UG,UA,G,E,G */
06031      ,{      910,      220,      285,      815,     -135} /* UG,UA,G,E,U/T */
06032      }
06033      ,{{{      1025,      215,      400,      930,     -20} /* UG,UA,G,A,E */
06034      ,{      1025,      215,      400,      930,     -20} /* UG,UA,G,A,A */
06035      ,{      885,       75,      260,      790,     -160} /* UG,UA,G,A,C */
06036      ,{     -300,     -485,     -300,     -395,     -720} /* UG,UA,G,A,G */
06037      ,{      885,       75,      260,      790,     -160} /* UG,UA,G,A,U/T */
06038      }
06039      ,{{{      975,      285,      350,      880,     -70} /* UG,UA,G,C,E */
06040      ,{      975,      165,      350,      880,     -70} /* UG,UA,G,C,A */
06041      ,{      975,      285,      350,      880,     -70} /* UG,UA,G,C,C */
06042      ,{      975,      165,      350,      880,     -70} /* UG,UA,G,C,G */
06043      ,{      910,      220,      285,      815,     -135} /* UG,UA,G,C,U/T */
06044      }
06045      ,{{{      805,       -5,      645,      710,      225} /* UG,UA,G,G,E */
06046      ,{     -530,     -715,     -530,     -625,     -950} /* UG,UA,G,G,A */
06047      ,{      805,       -5,      180,      710,     -240} /* UG,UA,G,G,C */
06048      ,{      645,     -165,      645,     -75,      225} /* UG,UA,G,G,G */
06049      ,{      805,       -5,      180,      710,     -240} /* UG,UA,G,G,U/T */
06050      }
06051      ,{{{      555,     -255,     -70,      460,     -490} /* UG,UA,G,U/T,E */
06052      ,{      555,     -255,     -70,      460,     -490} /* UG,UA,G,U/T,A */
06053      ,{      335,     -355,     -290,      240,     -710} /* UG,UA,G,U/T,C */
06054      ,{      555,     -255,     -70,      460,     -490} /* UG,UA,G,U/T,G */
06055      ,{     -540,     -725,     -540,     -635,     -960} /* UG,UA,G,U/T,U/T */
06056      }
06057      }
06058      ,{{{      740,      725,      740,      645,      115} /* UG,UA,U/T,E,E */
06059      ,{      535,      400,      415,      320,      115} /* UG,UA,U/T,E,A */
06060      ,{      350,      335,      350,      255,     -70} /* UG,UA,U/T,E,C */
06061      ,{      740,      725,      740,      645,     -70} /* UG,UA,U/T,E,G */
06062      ,{      285,      270,      285,      190,     -135} /* UG,UA,U/T,E,U/T */
06063      }
06064      ,{{{      520,      385,      400,      305,      100} /* UG,UA,U/T,A,E */
06065      ,{      520,      385,      400,      305,      100} /* UG,UA,U/T,A,A */
06066      ,{      260,      245,      260,      165,     -160} /* UG,UA,U/T,A,C */
06067      ,{     -180,     -315,     -180,     -395,     -720} /* UG,UA,U/T,A,G */
06068      ,{      260,      245,      260,      165,     -160} /* UG,UA,U/T,A,U/T */
06069      }
06070      ,{{{      350,      335,      350,      255,     -70} /* UG,UA,U/T,C,E */
06071      ,{      350,      335,      350,      255,     -70} /* UG,UA,U/T,C,A */
06072      ,{      350,      335,      350,      255,     -70} /* UG,UA,U/T,C,C */
06073      ,{      350,      335,      350,      255,     -70} /* UG,UA,U/T,C,G */
06074      ,{      285,      270,      285,      190,     -135} /* UG,UA,U/T,C,U/T */
06075      }
06076      ,{{{      645,      630,      645,      550,     -240} /* UG,UA,U/T,G,E */
06077      ,{     -410,     -545,     -410,     -625,     -950} /* UG,UA,U/T,G,A */
06078      ,{      180,      165,      180,       85,     -240} /* UG,UA,U/T,G,C */
06079      ,{      645,      630,      645,      550,     -400} /* UG,UA,U/T,G,G */
06080      ,{      180,      165,      180,       85,     -240} /* UG,UA,U/T,G,U/T */
06081      }
06082      ,{{{      -70,      -85,      -70,     -165,     -490} /* UG,UA,U/T,U/T,E */
06083      ,{      -70,      -85,      -70,     -165,     -490} /* UG,UA,U/T,U/T,A */
06084      ,{     -290,     -305,     -290,     -385,     -710} /* UG,UA,U/T,U/T,C */
06085      ,{      -70,      -85,      -70,     -165,     -490} /* UG,UA,U/T,U/T,G */
06086      ,{     -540,     -555,     -540,     -635,     -960} /* UG,UA,U/T,U/T,U/T */
06087      }
06088      }
06089      }
06090      ,{{{      1170,      1110,      870,      1075,      450} /* UG,NN,E,E,E */
06091      ,{      1170,       785,       545,      1075,      245} /* UG,NN,E,E,A */
06092      ,{      1105,       720,       480,      1010,       60} /* UG,NN,E,E,C */
06093      ,{      1125,      1110,      870,      1010,      450} /* UG,NN,E,E,G */

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06094 , { 1040, 655, 415, 945, -5} /* UG,NN,E,E,U/T */
06095 }
06096 , { { 1110, 725, 485, 1015, 185} /* UG,NN,E,A,E */
06097 , { 1110, 725, 485, 1015, 185} /* UG,NN,E,A,A */
06098 , { 970, 585, 345, 875, -75} /* UG,NN,E,A,C */
06099 , { 150, 135, 15, -200, -405} /* UG,NN,E,A,G */
06100 , { 970, 585, 345, 875, -75} /* UG,NN,E,A,U/T */
06101 }
06102 , { { 1105, 720, 480, 1010, 60} /* UG,NN,E,C,E */
06103 , { 1105, 720, 480, 1010, 60} /* UG,NN,E,C,A */
06104 , { 1105, 720, 480, 1010, 60} /* UG,NN,E,C,C */
06105 , { 1105, 720, 480, 1010, 60} /* UG,NN,E,C,G */
06106 , { 1040, 655, 415, 945, -5} /* UG,NN,E,C,U/T */
06107 }
06108 , { { 1100, 1085, 845, 910, 425} /* UG,NN,E,G,E */
06109 , { 350, 335, 5, -210, -415} /* UG,NN,E,G,A */
06110 , { 1005, 620, 380, 910, -40} /* UG,NN,E,G,C */
06111 , { 1100, 1085, 845, 910, 425} /* UG,NN,E,G,G */
06112 , { 1005, 620, 380, 910, -40} /* UG,NN,E,G,U/T */
06113 }
06114 , { { 1060, 675, 435, 965, 15} /* UG,NN,E,U/T,E */
06115 , { 1060, 675, 435, 965, 15} /* UG,NN,E,U/T,A */
06116 , { 945, 555, 320, 850, -100} /* UG,NN,E,U/T,C */
06117 , { 1060, 675, 435, 965, 15} /* UG,NN,E,U/T,G */
06118 , { 340, 325, -35, -130, -455} /* UG,NN,E,U/T,U/T */
06119 }
06120 }
06121 , { { { 1125, 1110, 870, 250, 450} /* UG,NN,A,E,E */
06122 , { 800, 785, 545, 195, 125} /* UG,NN,A,E,A */
06123 , { 735, 720, 480, 250, 60} /* UG,NN,A,E,C */
06124 , { 1125, 1110, 870, 130, 450} /* UG,NN,A,E,G */
06125 , { 670, 655, 415, 185, -5} /* UG,NN,A,E,U/T */
06126 }
06127 , { { 740, 725, 485, 135, 65} /* UG,NN,A,A,E */
06128 , { 740, 725, 485, 135, 65} /* UG,NN,A,A,A */
06129 , { 600, 585, 345, -5, -75} /* UG,NN,A,A,C */
06130 , { 150, 135, -105, -455, -525} /* UG,NN,A,A,G */
06131 , { 600, 585, 345, -5, -75} /* UG,NN,A,A,U/T */
06132 }
06133 , { { 735, 720, 480, 250, 60} /* UG,NN,A,C,E */
06134 , { 735, 720, 480, 130, 60} /* UG,NN,A,C,A */
06135 , { 735, 720, 480, 250, 60} /* UG,NN,A,C,C */
06136 , { 735, 720, 480, 130, 60} /* UG,NN,A,C,G */
06137 , { 670, 655, 415, 185, -5} /* UG,NN,A,C,U/T */
06138 }
06139 , { { 1100, 1085, 845, 30, 425} /* UG,NN,A,G,E */
06140 , { 350, 335, -115, -465, -535} /* UG,NN,A,G,A */
06141 , { 635, 620, 380, 30, -40} /* UG,NN,A,G,C */
06142 , { 1100, 1085, 845, -130, 425} /* UG,NN,A,G,G */
06143 , { 635, 620, 380, 30, -40} /* UG,NN,A,G,U/T */
06144 }
06145 , { { 690, 675, 435, 90, 15} /* UG,NN,A,U/T,E */
06146 , { 690, 675, 435, 85, 15} /* UG,NN,A,U/T,A */
06147 , { 570, 555, 320, 90, -100} /* UG,NN,A,U/T,C */
06148 , { 690, 675, 435, 85, 15} /* UG,NN,A,U/T,G */
06149 , { 340, 325, -35, -385, -455} /* UG,NN,A,U/T,U/T */
06150 }
06151 }
06152 , { { { 870, 855, 870, 775, 450} /* UG,NN,C,E,E */
06153 , { 545, 530, 545, 450, 125} /* UG,NN,C,E,A */
06154 , { 480, 465, 480, 385, 60} /* UG,NN,C,E,C */
06155 , { 870, 855, 870, 775, 450} /* UG,NN,C,E,G */
06156 , { 415, 400, 415, 320, -5} /* UG,NN,C,E,U/T */
06157 }
06158 , { { 485, 470, 485, 390, 65} /* UG,NN,C,A,E */
06159 , { 485, 470, 485, 390, 65} /* UG,NN,C,A,A */
06160 , { 345, 330, 345, 250, -75} /* UG,NN,C,A,C */
06161 , { 15, -120, 15, -200, -405} /* UG,NN,C,A,G */
06162 , { 345, 330, 345, 250, -75} /* UG,NN,C,A,U/T */
06163 }
06164 , { { 480, 465, 480, 385, 60} /* UG,NN,C,C,E */
06165 , { 480, 465, 480, 385, 60} /* UG,NN,C,C,A */
06166 , { 480, 465, 480, 385, 60} /* UG,NN,C,C,C */
06167 , { 480, 465, 480, 385, 60} /* UG,NN,C,C,G */
06168 , { 415, 400, 415, 320, -5} /* UG,NN,C,C,U/T */
06169 }
06170 , { { 845, 830, 845, 750, 425} /* UG,NN,C,G,E */
06171 , { 5, -130, 5, -210, -415} /* UG,NN,C,G,A */
06172 , { 380, 365, 380, 285, -40} /* UG,NN,C,G,C */
06173 , { 845, 830, 845, 750, 425} /* UG,NN,C,G,G */
06174 , { 380, 365, 380, 285, -40} /* UG,NN,C,G,U/T */
06175 }
06176 , { { 435, 420, 435, 340, 15} /* UG,NN,C,U/T,E */
06177 , { 435, 420, 435, 340, 15} /* UG,NN,C,U/T,A */
06178 , { 320, 305, 320, 225, -100} /* UG,NN,C,U/T,C */
06179 , { 435, 420, 435, 340, 15} /* UG,NN,C,U/T,G */
06180 , { -35, -50, -35, -130, -455} /* UG,NN,C,U/T,U/T */

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06181     }
06182     }
06183     ,{{{ 1170,    415,    870,    1075,    450} /* UG,NN,G,E,E */
06184     ,{ 1170,    360,    545,    1075,    125} /* UG,NN,G,E,A */
06185     ,{ 1105,    415,    480,    1010,    60} /* UG,NN,G,E,C */
06186     ,{ 1105,    295,    870,    1010,    450} /* UG,NN,G,E,G */
06187     ,{ 1040,    350,    415,    945,    -5} /* UG,NN,G,E,U/T */
06188     }
06189     ,{{{ 1110,    300,    485,    1015,    65} /* UG,NN,G,A,E */
06190     ,{ 1110,    300,    485,    1015,    65} /* UG,NN,G,A,A */
06191     ,{ 970,    160,    345,    875,    -75} /* UG,NN,G,A,C */
06192     ,{ -105,    -290,    -105,    -200,    -525} /* UG,NN,G,A,G */
06193     ,{ 970,    160,    345,    875,    -75} /* UG,NN,G,A,U/T */
06194     }
06195     ,{{{ 1105,    415,    480,    1010,    60} /* UG,NN,G,C,E */
06196     ,{ 1105,    295,    480,    1010,    60} /* UG,NN,G,C,A */
06197     ,{ 1105,    415,    480,    1010,    60} /* UG,NN,G,C,C */
06198     ,{ 1105,    295,    480,    1010,    60} /* UG,NN,G,C,G */
06199     ,{ 1040,    350,    415,    945,    -5} /* UG,NN,G,C,U/T */
06200     }
06201     ,{{{ 1005,    195,    845,    910,    425} /* UG,NN,G,G,E */
06202     ,{ -115,    -300,    -115,    -210,    -535} /* UG,NN,G,G,A */
06203     ,{ 1005,    195,    380,    910,    -40} /* UG,NN,G,G,C */
06204     ,{ 845,    35,    845,    125,    425} /* UG,NN,G,G,G */
06205     ,{ 1005,    195,    380,    910,    -40} /* UG,NN,G,G,U/T */
06206     }
06207     ,{{{ 1060,    255,    435,    965,    15} /* UG,NN,G,U/T,E */
06208     ,{ 1060,    250,    435,    965,    15} /* UG,NN,G,U/T,A */
06209     ,{ 945,    255,    320,    850,    -100} /* UG,NN,G,U/T,C */
06210     ,{ 1060,    250,    435,    965,    15} /* UG,NN,G,U/T,G */
06211     ,{ -35,    -220,    -35,    -130,    -455} /* UG,NN,G,U/T,U/T */
06212     }
06213     }
06214     ,{{{ 870,    855,    870,    775,    245} /* UG,NN,U/T,E,E */
06215     ,{ 665,    530,    545,    450,    245} /* UG,NN,U/T,E,A */
06216     ,{ 480,    465,    480,    385,    60} /* UG,NN,U/T,E,C */
06217     ,{ 870,    855,    870,    775,    60} /* UG,NN,U/T,E,G */
06218     ,{ 415,    400,    415,    320,    -5} /* UG,NN,U/T,E,U/T */
06219     }
06220     ,{{{ 605,    470,    485,    390,    185} /* UG,NN,U/T,A,E */
06221     ,{ 605,    470,    485,    390,    185} /* UG,NN,U/T,A,A */
06222     ,{ 345,    330,    345,    250,    -75} /* UG,NN,U/T,A,C */
06223     ,{ 15,    -120,    15,    -200,    -525} /* UG,NN,U/T,A,G */
06224     ,{ 345,    330,    345,    250,    -75} /* UG,NN,U/T,A,U/T */
06225     }
06226     ,{{{ 480,    465,    480,    385,    60} /* UG,NN,U/T,C,E */
06227     ,{ 480,    465,    480,    385,    60} /* UG,NN,U/T,C,A */
06228     ,{ 480,    465,    480,    385,    60} /* UG,NN,U/T,C,C */
06229     ,{ 480,    465,    480,    385,    60} /* UG,NN,U/T,C,G */
06230     ,{ 415,    400,    415,    320,    -5} /* UG,NN,U/T,C,U/T */
06231     }
06232     ,{{{ 845,    830,    845,    750,    -40} /* UG,NN,U/T,G,E */
06233     ,{ 5,    -130,    5,    -210,    -535} /* UG,NN,U/T,G,A */
06234     ,{ 380,    365,    380,    285,    -40} /* UG,NN,U/T,G,C */
06235     ,{ 845,    830,    845,    750,    -200} /* UG,NN,U/T,G,G */
06236     ,{ 380,    365,    380,    285,    -40} /* UG,NN,U/T,G,U/T */
06237     }
06238     ,{{{ 435,    420,    435,    340,    15} /* UG,NN,U/T,U/T,E */
06239     ,{ 435,    420,    435,    340,    15} /* UG,NN,U/T,U/T,A */
06240     ,{ 320,    305,    320,    225,    -100} /* UG,NN,U/T,U/T,C */
06241     ,{ 435,    420,    435,    340,    15} /* UG,NN,U/T,U/T,G */
06242     ,{ -35,    -50,    -35,    -130,    -455} /* UG,NN,U/T,U/T,U/T */
06243     }
06244     }
06245     }
06246     }
06247     ,{{{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,E,E */
06248     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,E,A */
06249     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,E,C */
06250     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,E,G */
06251     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,E,U/T */
06252     }
06253     ,{{{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,A,E */
06254     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,A,A */
06255     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,A,C */
06256     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,A,G */
06257     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,A,U/T */
06258     }
06259     ,{{{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,C,E */
06260     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,C,A */
06261     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,C,C */
06262     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,C,G */
06263     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,C,U/T */
06264     }
06265     ,{{{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,G,E */
06266     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,G,A */
06267     ,{ INF,    INF,    INF,    INF,    INF} /* AT,NP,E,G,C */

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06268 , { INF, INF, INF, INF, INF} /* AT,NP,E,G,G */
06269 , { INF, INF, INF, INF, INF} /* AT,NP,E,G,U/T */
06270 }
06271 , { { INF, INF, INF, INF, INF} /* AT,NP,E,U/T,E */
06272 , { INF, INF, INF, INF, INF} /* AT,NP,E,U/T,A */
06273 , { INF, INF, INF, INF, INF} /* AT,NP,E,U/T,C */
06274 , { INF, INF, INF, INF, INF} /* AT,NP,E,U/T,G */
06275 , { INF, INF, INF, INF, INF} /* AT,NP,E,U/T,U/T */
06276 }
06277 }
06278 , { { { INF, INF, INF, INF, INF} /* AT,NP,A,E,E */
06279 , { INF, INF, INF, INF, INF} /* AT,NP,A,E,A */
06280 , { INF, INF, INF, INF, INF} /* AT,NP,A,E,C */
06281 , { INF, INF, INF, INF, INF} /* AT,NP,A,E,G */
06282 , { INF, INF, INF, INF, INF} /* AT,NP,A,E,U/T */
06283 }
06284 , { { INF, INF, INF, INF, INF} /* AT,NP,A,A,E */
06285 , { INF, INF, INF, INF, INF} /* AT,NP,A,A,A */
06286 , { INF, INF, INF, INF, INF} /* AT,NP,A,A,C */
06287 , { INF, INF, INF, INF, INF} /* AT,NP,A,A,G */
06288 , { INF, INF, INF, INF, INF} /* AT,NP,A,A,U/T */
06289 }
06290 , { { INF, INF, INF, INF, INF} /* AT,NP,A,C,E */
06291 , { INF, INF, INF, INF, INF} /* AT,NP,A,C,A */
06292 , { INF, INF, INF, INF, INF} /* AT,NP,A,C,C */
06293 , { INF, INF, INF, INF, INF} /* AT,NP,A,C,G */
06294 , { INF, INF, INF, INF, INF} /* AT,NP,A,C,U/T */
06295 }
06296 , { { INF, INF, INF, INF, INF} /* AT,NP,A,G,E */
06297 , { INF, INF, INF, INF, INF} /* AT,NP,A,G,A */
06298 , { INF, INF, INF, INF, INF} /* AT,NP,A,G,C */
06299 , { INF, INF, INF, INF, INF} /* AT,NP,A,G,G */
06300 , { INF, INF, INF, INF, INF} /* AT,NP,A,G,U/T */
06301 }
06302 , { { INF, INF, INF, INF, INF} /* AT,NP,A,U/T,E */
06303 , { INF, INF, INF, INF, INF} /* AT,NP,A,U/T,A */
06304 , { INF, INF, INF, INF, INF} /* AT,NP,A,U/T,C */
06305 , { INF, INF, INF, INF, INF} /* AT,NP,A,U/T,G */
06306 , { INF, INF, INF, INF, INF} /* AT,NP,A,U/T,U/T */
06307 }
06308 }
06309 , { { { INF, INF, INF, INF, INF} /* AT,NP,C,E,E */
06310 , { INF, INF, INF, INF, INF} /* AT,NP,C,E,A */
06311 , { INF, INF, INF, INF, INF} /* AT,NP,C,E,C */
06312 , { INF, INF, INF, INF, INF} /* AT,NP,C,E,G */
06313 , { INF, INF, INF, INF, INF} /* AT,NP,C,E,U/T */
06314 }
06315 , { { INF, INF, INF, INF, INF} /* AT,NP,C,A,E */
06316 , { INF, INF, INF, INF, INF} /* AT,NP,C,A,A */
06317 , { INF, INF, INF, INF, INF} /* AT,NP,C,A,C */
06318 , { INF, INF, INF, INF, INF} /* AT,NP,C,A,G */
06319 , { INF, INF, INF, INF, INF} /* AT,NP,C,A,U/T */
06320 }
06321 , { { INF, INF, INF, INF, INF} /* AT,NP,C,C,E */
06322 , { INF, INF, INF, INF, INF} /* AT,NP,C,C,A */
06323 , { INF, INF, INF, INF, INF} /* AT,NP,C,C,C */
06324 , { INF, INF, INF, INF, INF} /* AT,NP,C,C,G */
06325 , { INF, INF, INF, INF, INF} /* AT,NP,C,C,U/T */
06326 }
06327 , { { INF, INF, INF, INF, INF} /* AT,NP,C,G,E */
06328 , { INF, INF, INF, INF, INF} /* AT,NP,C,G,A */
06329 , { INF, INF, INF, INF, INF} /* AT,NP,C,G,C */
06330 , { INF, INF, INF, INF, INF} /* AT,NP,C,G,G */
06331 , { INF, INF, INF, INF, INF} /* AT,NP,C,G,U/T */
06332 }
06333 , { { INF, INF, INF, INF, INF} /* AT,NP,C,U/T,E */
06334 , { INF, INF, INF, INF, INF} /* AT,NP,C,U/T,A */
06335 , { INF, INF, INF, INF, INF} /* AT,NP,C,U/T,C */
06336 , { INF, INF, INF, INF, INF} /* AT,NP,C,U/T,G */
06337 , { INF, INF, INF, INF, INF} /* AT,NP,C,U/T,U/T */
06338 }
06339 }
06340 , { { { INF, INF, INF, INF, INF} /* AT,NP,G,E,E */
06341 , { INF, INF, INF, INF, INF} /* AT,NP,G,E,A */
06342 , { INF, INF, INF, INF, INF} /* AT,NP,G,E,C */
06343 , { INF, INF, INF, INF, INF} /* AT,NP,G,E,G */
06344 , { INF, INF, INF, INF, INF} /* AT,NP,G,E,U/T */
06345 }
06346 , { { INF, INF, INF, INF, INF} /* AT,NP,G,A,E */
06347 , { INF, INF, INF, INF, INF} /* AT,NP,G,A,A */
06348 , { INF, INF, INF, INF, INF} /* AT,NP,G,A,C */
06349 , { INF, INF, INF, INF, INF} /* AT,NP,G,A,G */
06350 , { INF, INF, INF, INF, INF} /* AT,NP,G,A,U/T */
06351 }
06352 , { { INF, INF, INF, INF, INF} /* AT,NP,G,C,E */
06353 , { INF, INF, INF, INF, INF} /* AT,NP,G,C,A */
06354 , { INF, INF, INF, INF, INF} /* AT,NP,G,C,C */
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06355 , { INF, INF, INF, INF, INF} /* AT,NP,G,C,G */
06356 , { INF, INF, INF, INF, INF} /* AT,NP,G,C,U/T */
06357 }
06358 , {{ INF, INF, INF, INF, INF} /* AT,NP,G,G,E */
06359 , { INF, INF, INF, INF, INF} /* AT,NP,G,G,A */
06360 , { INF, INF, INF, INF, INF} /* AT,NP,G,G,C */
06361 , { INF, INF, INF, INF, INF} /* AT,NP,G,G,G */
06362 , { INF, INF, INF, INF, INF} /* AT,NP,G,G,U/T */
06363 }
06364 , {{ INF, INF, INF, INF, INF} /* AT,NP,G,U/T,E */
06365 , { INF, INF, INF, INF, INF} /* AT,NP,G,U/T,A */
06366 , { INF, INF, INF, INF, INF} /* AT,NP,G,U/T,C */
06367 , { INF, INF, INF, INF, INF} /* AT,NP,G,U/T,G */
06368 , { INF, INF, INF, INF, INF} /* AT,NP,G,U/T,U/T */
06369 }
06370 }
06371 , {{{ INF, INF, INF, INF, INF} /* AT,NP,U/T,E,E */
06372 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,E,A */
06373 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,E,C */
06374 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,E,G */
06375 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,E,U/T */
06376 }
06377 , {{ INF, INF, INF, INF, INF} /* AT,NP,U/T,A,E */
06378 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,A,A */
06379 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,A,C */
06380 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,A,G */
06381 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,A,U/T */
06382 }
06383 , {{{ INF, INF, INF, INF, INF} /* AT,NP,U/T,C,E */
06384 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,C,A */
06385 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,C,C */
06386 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,C,G */
06387 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,C,U/T */
06388 }
06389 , {{{ INF, INF, INF, INF, INF} /* AT,NP,U/T,G,E */
06390 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,G,A */
06391 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,G,C */
06392 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,G,G */
06393 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,G,U/T */
06394 }
06395 , {{{ INF, INF, INF, INF, INF} /* AT,NP,U/T,U/T,E */
06396 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,U/T,A */
06397 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,U/T,C */
06398 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,U/T,G */
06399 , { INF, INF, INF, INF, INF} /* AT,NP,U/T,U/T,U/T */
06400 }
06401 }
06402 }
06403 , {{{ 635, 380, 295, 610, 250} /* AT,CG,E,E,E */
06404 , { 610, 280, 195, 585, 150} /* AT,CG,E,E,A */
06405 , { 635, 310, 220, 610, 175} /* AT,CG,E,E,C */
06406 , { 610, 380, 295, 585, 250} /* AT,CG,E,E,G */
06407 , { 580, 255, 165, 555, 120} /* AT,CG,E,E,U/T */
06408 }
06409 , {{ 515, 190, 115, 490, 70} /* AT,CG,E,A,E */
06410 , { 515, 190, 100, 490, 55} /* AT,CG,E,A,A */
06411 , { 360, 35, -50, 335, -95} /* AT,CG,E,A,C */
06412 , { 140, 80, 115, -35, 70} /* AT,CG,E,A,G */
06413 , { 360, 35, -50, 335, -95} /* AT,CG,E,A,U/T */
06414 }
06415 , {{ 610, 280, 195, 585, 150} /* AT,CG,E,C,E */
06416 , { 610, 280, 195, 585, 150} /* AT,CG,E,C,A */
06417 , { 605, 280, 190, 580, 145} /* AT,CG,E,C,C */
06418 , { 610, 280, 195, 585, 150} /* AT,CG,E,C,G */
06419 , { 580, 255, 165, 555, 120} /* AT,CG,E,C,U/T */
06420 }
06421 , {{ 415, 355, 270, 330, 225} /* AT,CG,E,G,E */
06422 , { -5, -65, -35, -185, -80} /* AT,CG,E,G,A */
06423 , { 355, 30, -55, 330, -100} /* AT,CG,E,G,C */
06424 , { 415, 355, 270, 235, 225} /* AT,CG,E,G,G */
06425 , { 355, 30, -55, 330, -100} /* AT,CG,E,G,U/T */
06426 }
06427 , {{ 595, 270, 180, 570, 135} /* AT,CG,E,U/T,E */
06428 , { 570, 240, 155, 545, 110} /* AT,CG,E,U/T,A */
06429 , { 595, 270, 180, 570, 135} /* AT,CG,E,U/T,C */
06430 , { 570, 240, 155, 545, 110} /* AT,CG,E,U/T,G */
06431 , { 30, -30, -240, -270, -285} /* AT,CG,E,U/T,U/T */
06432 }
06433 }
06434 , {{{ 440, 380, 295, -140, 250} /* AT,CG,A,E,E */
06435 , { 340, 280, 195, -285, 150} /* AT,CG,A,E,A */
06436 , { 370, 310, 220, -140, 175} /* AT,CG,A,E,C */
06437 , { 440, 380, 295, -285, 250} /* AT,CG,A,E,G */
06438 , { 315, 255, 165, -195, 120} /* AT,CG,A,E,U/T */
06439 }
06440 , {{ 250, 190, 100, -380, 55} /* AT,CG,A,A,E */
06441 , { 250, 190, 100, -380, 55} /* AT,CG,A,A,A */

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06442      , {      95,      35,     -50,     -535,     -95} /* AT,CG,A,A,C */
06443      , {     140,      80,      -5,     -485,     -50} /* AT,CG,A,A,G */
06444      , {      95,      35,     -50,     -535,     -95} /* AT,CG,A,A,U/T */
06445      }
06446      , {{      340,      280,      195,     -170,      150} /* AT,CG,A,C,E */
06447      , {      340,      280,      195,     -285,      150} /* AT,CG,A,C,A */
06448      , {      340,      280,      190,     -170,      145} /* AT,CG,A,C,C */
06449      , {      340,      280,      195,     -285,      150} /* AT,CG,A,C,G */
06450      , {      315,      255,      165,     -195,      120} /* AT,CG,A,C,U/T */
06451      }
06452      , {{      415,      355,      270,     -540,      225} /* AT,CG,A,G,E */
06453      , {       -5,     -65,     -150,     -635,     -195} /* AT,CG,A,G,A */
06454      , {       90,       30,     -55,     -540,    -100} /* AT,CG,A,G,C */
06455      , {      415,      355,      270,     -840,      225} /* AT,CG,A,G,G */
06456      , {       90,       30,     -55,     -540,    -100} /* AT,CG,A,G,U/T */
06457      }
06458      , {{      330,      270,      180,     -180,      135} /* AT,CG,A,U/T,E */
06459      , {      300,      240,      155,     -325,      110} /* AT,CG,A,U/T,A */
06460      , {      330,      270,      180,     -180,      135} /* AT,CG,A,U/T,C */
06461      , {      300,      240,      155,     -325,      110} /* AT,CG,A,U/T,G */
06462      , {       30,     -30,     -240,     -720,     -285} /* AT,CG,A,U/T,U/T */
06463      }
06464      }
06465      , {{{      290,      225,      290,      260,      245} /* AT,CG,C,E,E */
06466      , {      190,      125,      190,      160,      145} /* AT,CG,C,E,A */
06467      , {      220,      155,      220,      190,      175} /* AT,CG,C,E,C */
06468      , {      290,      225,      290,      260,      245} /* AT,CG,C,E,G */
06469      , {      165,      100,      165,      135,      120} /* AT,CG,C,E,U/T */
06470      }
06471      , {{{      115,       35,      115,       70,       70} /* AT,CG,C,A,E */
06472      , {      100,       35,      100,       70,       55} /* AT,CG,C,A,A */
06473      , {     -55,     -120,     -55,     -85,    -100} /* AT,CG,C,A,C */
06474      , {      115,     -70,      115,     -35,       70} /* AT,CG,C,A,G */
06475      , {     -55,     -120,     -55,     -85,    -100} /* AT,CG,C,A,U/T */
06476      }
06477      , {{{      190,      125,      190,      160,      145} /* AT,CG,C,C,E */
06478      , {      190,      125,      190,      160,      145} /* AT,CG,C,C,A */
06479      , {      190,      125,      190,      160,      145} /* AT,CG,C,C,C */
06480      , {      190,      125,      190,      160,      145} /* AT,CG,C,C,G */
06481      , {      165,      100,      165,      135,      120} /* AT,CG,C,C,U/T */
06482      }
06483      , {{{      265,      200,      265,      235,      220} /* AT,CG,C,G,E */
06484      , {     -35,     -220,     -35,     -185,     -80} /* AT,CG,C,G,A */
06485      , {     -60,     -125,     -60,     -90,    -105} /* AT,CG,C,G,C */
06486      , {      265,      200,      265,      235,      220} /* AT,CG,C,G,G */
06487      , {     -60,     -125,     -60,     -90,    -105} /* AT,CG,C,G,U/T */
06488      }
06489      , {{{      180,      115,      180,      150,      135} /* AT,CG,C,U/T,E */
06490      , {      150,       85,      150,      120,      105} /* AT,CG,C,U/T,A */
06491      , {      180,      115,      180,      150,      135} /* AT,CG,C,U/T,C */
06492      , {      150,       85,      150,      120,      105} /* AT,CG,C,U/T,G */
06493      , {     -240,     -305,     -240,     -270,     -285} /* AT,CG,C,U/T,U/T */
06494      }
06495      }
06496      , {{{      635,     -265,      295,      610,      250} /* AT,CG,G,E,E */
06497      , {      610,     -410,      195,      585,      150} /* AT,CG,G,E,A */
06498      , {      635,     -265,      220,      610,      175} /* AT,CG,G,E,C */
06499      , {      610,     -410,      295,      585,      250} /* AT,CG,G,E,G */
06500      , {      580,     -320,      165,      555,      120} /* AT,CG,G,E,U/T */
06501      }
06502      , {{{      515,     -505,      100,      490,       55} /* AT,CG,G,A,E */
06503      , {      515,     -505,      100,      490,       55} /* AT,CG,G,A,A */
06504      , {      360,     -660,     -50,      335,     -95} /* AT,CG,G,A,C */
06505      , {       -5,     -610,     -5,     -240,     -50} /* AT,CG,G,A,G */
06506      , {      360,     -660,     -50,      335,     -95} /* AT,CG,G,A,U/T */
06507      }
06508      , {{{      610,     -295,      195,      585,      150} /* AT,CG,G,C,E */
06509      , {      610,     -410,      195,      585,      150} /* AT,CG,G,C,A */
06510      , {      605,     -295,      190,      580,      145} /* AT,CG,G,C,C */
06511      , {      610,     -410,      195,      585,      150} /* AT,CG,G,C,G */
06512      , {      580,     -320,      165,      555,      120} /* AT,CG,G,C,U/T */
06513      }
06514      , {{{      355,     -665,      270,      330,      225} /* AT,CG,G,G,E */
06515      , {     -150,     -760,     -150,     -390,     -195} /* AT,CG,G,G,A */
06516      , {      355,     -665,     -55,      330,    -100} /* AT,CG,G,G,C */
06517      , {      270,     -965,      270,     -595,      225} /* AT,CG,G,G,G */
06518      , {      355,     -665,     -55,      330,    -100} /* AT,CG,G,G,U/T */
06519      }
06520      , {{{      595,     -305,      180,      570,      135} /* AT,CG,G,U/T,E */
06521      , {      570,     -450,      155,      545,      110} /* AT,CG,G,U/T,A */
06522      , {      595,     -305,      180,      570,      135} /* AT,CG,G,U/T,C */
06523      , {      570,     -450,      155,      545,      110} /* AT,CG,G,U/T,G */
06524      , {     -240,     -845,     -240,     -475,     -285} /* AT,CG,G,U/T,U/T */
06525      }
06526      }
06527      , {{{      290,      225,      290,      260,     -295} /* AT,CG,U/T,E,E */
06528      , {      190,      125,      190,      160,     -295} /* AT,CG,U/T,E,A */

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06529 , { 220, 155, 220, 190, -315} /* AT,CG,U/T,E,C */
06530 , { 290, 225, 290, 260, -340} /* AT,CG,U/T,E,G */
06531 , { 165, 100, 165, 135, -370} /* AT,CG,U/T,E,U/T */
06532 }
06533 , { { 115, 35, 115, 70, -315} /* AT,CG,U/T,A,E */
06534 , { 100, 35, 100, 70, -315} /* AT,CG,U/T,A,A */
06535 , { -55, -120, -55, -85, -590} /* AT,CG,U/T,A,C */
06536 , { 115, -70, 115, -35, -540} /* AT,CG,U/T,A,G */
06537 , { -55, -120, -55, -85, -590} /* AT,CG,U/T,A,U/T */
06538 }
06539 , { { 190, 125, 190, 160, -340} /* AT,CG,U/T,C,E */
06540 , { 190, 125, 190, 160, -340} /* AT,CG,U/T,C,A */
06541 , { 190, 125, 190, 160, -345} /* AT,CG,U/T,C,C */
06542 , { 190, 125, 190, 160, -340} /* AT,CG,U/T,C,G */
06543 , { 165, 100, 165, 135, -370} /* AT,CG,U/T,C,U/T */
06544 }
06545 , { { 265, 200, 265, 235, -595} /* AT,CG,U/T,G,E */
06546 , { -35, -220, -35, -185, -690} /* AT,CG,U/T,G,A */
06547 , { -60, -125, -60, -90, -595} /* AT,CG,U/T,G,C */
06548 , { 265, 200, 265, 235, -895} /* AT,CG,U/T,G,G */
06549 , { -60, -125, -60, -90, -595} /* AT,CG,U/T,G,U/T */
06550 }
06551 , { { 180, 115, 180, 150, -355} /* AT,CG,U/T,U/T,E */
06552 , { 150, 85, 150, 120, -380} /* AT,CG,U/T,U/T,A */
06553 , { 180, 115, 180, 150, -355} /* AT,CG,U/T,U/T,C */
06554 , { 150, 85, 150, 120, -380} /* AT,CG,U/T,U/T,G */
06555 , { -240, -305, -240, -270, -775} /* AT,CG,U/T,U/T,U/T */
06556 }
06557 }
06558 }
06559 , { { { 785, 545, 460, 760, 415} /* AT,GC,E,E,E */
06560 , { 785, 455, 370, 760, 325} /* AT,GC,E,E,A */
06561 , { 560, 230, 145, 535, 100} /* AT,GC,E,E,C */
06562 , { 605, 545, 460, 575, 415} /* AT,GC,E,E,G */
06563 , { 560, 250, 145, 535, 100} /* AT,GC,E,E,U/T */
06564 }
06565 , { { 520, 190, 105, 495, 60} /* AT,GC,E,A,E */
06566 , { 520, 190, 105, 495, 60} /* AT,GC,E,A,A */
06567 , { 295, -35, -120, 270, -165} /* AT,GC,E,A,C */
06568 , { -340, -400, -370, -520, -415} /* AT,GC,E,A,G */
06569 , { 295, -35, -120, 270, -165} /* AT,GC,E,A,U/T */
06570 }
06571 , { { 480, 155, 70, 455, 25} /* AT,GC,E,C,E */
06572 , { 480, 155, 70, 455, 25} /* AT,GC,E,C,A */
06573 , { 330, 5, -85, 305, -130} /* AT,GC,E,C,C */
06574 , { 480, 155, 70, 455, 25} /* AT,GC,E,C,G */
06575 , { 330, 5, -85, 305, -130} /* AT,GC,E,C,U/T */
06576 }
06577 , { { 395, 335, 250, 325, 205} /* AT,GC,E,G,E */
06578 , { -50, -110, -80, -230, -125} /* AT,GC,E,G,A */
06579 , { 350, 20, -65, 325, -110} /* AT,GC,E,G,C */
06580 , { 395, 335, 250, 215, 205} /* AT,GC,E,G,G */
06581 , { 350, 20, -65, 325, -110} /* AT,GC,E,G,U/T */
06582 }
06583 , { { 600, 275, 190, 575, 145} /* AT,GC,E,U/T,E */
06584 , { 600, 275, 190, 575, 145} /* AT,GC,E,U/T,A */
06585 , { 295, -30, -120, 270, -165} /* AT,GC,E,U/T,C */
06586 , { 600, 275, 190, 575, 145} /* AT,GC,E,U/T,G */
06587 , { 310, 250, 45, 10, 0} /* AT,GC,E,U/T,U/T */
06588 }
06589 }
06590 , { { { 605, 545, 460, -110, 415} /* AT,GC,A,E,E */
06591 , { 515, 455, 370, -110, 325} /* AT,GC,A,E,A */
06592 , { 290, 230, 145, -325, 100} /* AT,GC,A,E,C */
06593 , { 605, 545, 460, -295, 415} /* AT,GC,A,E,G */
06594 , { 310, 250, 145, -325, 100} /* AT,GC,A,E,U/T */
06595 }
06596 , { { 250, 190, 105, -375, 60} /* AT,GC,A,A,E */
06597 , { 250, 190, 105, -375, 60} /* AT,GC,A,A,A */
06598 , { 25, -35, -120, -600, -165} /* AT,GC,A,A,C */
06599 , { -340, -400, -490, -970, -535} /* AT,GC,A,A,G */
06600 , { 25, -35, -120, -600, -165} /* AT,GC,A,A,U/T */
06601 }
06602 , { { 215, 155, 70, -415, 25} /* AT,GC,A,C,E */
06603 , { 215, 155, 70, -415, 25} /* AT,GC,A,C,A */
06604 , { 65, 5, -85, -445, -130} /* AT,GC,A,C,C */
06605 , { 215, 155, 70, -415, 25} /* AT,GC,A,C,G */
06606 , { 65, 5, -85, -445, -130} /* AT,GC,A,C,U/T */
06607 }
06608 , { { 395, 335, 250, -545, 205} /* AT,GC,A,G,E */
06609 , { -50, -110, -195, -680, -240} /* AT,GC,A,G,A */
06610 , { 80, 20, -65, -545, -110} /* AT,GC,A,G,C */
06611 , { 395, 335, 250, -860, 205} /* AT,GC,A,G,G */
06612 , { 80, 20, -65, -545, -110} /* AT,GC,A,G,U/T */
06613 }
06614 , { { 335, 275, 190, -295, 145} /* AT,GC,A,U/T,E */
06615 , { 335, 275, 190, -295, 145} /* AT,GC,A,U/T,A */

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06616 , { 30, -30, -120, -480, -165} /* AT,GC,A,U/T,C */
06617 , { 335, 275, 190, -295, 145} /* AT,GC,A,U/T,G */
06618 , { 310, 250, 45, -440, 0} /* AT,GC,A,U/T,U/T */
06619 }
06620 }
06621 , {{ 455, 390, 455, 425, 410} /* AT,GC,C,E,E */
06622 , { 365, 300, 365, 335, 320} /* AT,GC,C,E,A */
06623 , { 145, 80, 145, 115, 100} /* AT,GC,C,E,C */
06624 , { 455, 390, 455, 425, 410} /* AT,GC,C,E,G */
06625 , { 145, 80, 145, 115, 100} /* AT,GC,C,E,U/T */
06626 }
06627 , {{ 100, 35, 100, 70, 55} /* AT,GC,C,A,E */
06628 , { 100, 35, 100, 70, 55} /* AT,GC,C,A,A */
06629 , { -120, -185, -120, -150, -165} /* AT,GC,C,A,C */
06630 , { -370, -555, -370, -520, -415} /* AT,GC,C,A,G */
06631 , { -120, -185, -120, -150, -165} /* AT,GC,C,A,U/T */
06632 }
06633 , {{ 65, 0, 65, 35, 20} /* AT,GC,C,C,E */
06634 , { 65, 0, 65, 35, 20} /* AT,GC,C,C,A */
06635 , { -85, -150, -85, -115, -130} /* AT,GC,C,C,C */
06636 , { 65, 0, 65, 35, 20} /* AT,GC,C,C,G */
06637 , { -85, -150, -85, -115, -130} /* AT,GC,C,C,U/T */
06638 }
06639 , {{ 245, 180, 245, 215, 200} /* AT,GC,C,G,E */
06640 , { -80, -265, -80, -230, -125} /* AT,GC,C,G,A */
06641 , { -65, -130, -65, -95, -110} /* AT,GC,C,G,C */
06642 , { 245, 180, 245, 215, 200} /* AT,GC,C,G,G */
06643 , { -65, -130, -65, -95, -110} /* AT,GC,C,G,U/T */
06644 }
06645 , {{ 185, 120, 185, 155, 140} /* AT,GC,C,U/T,E */
06646 , { 185, 120, 185, 155, 140} /* AT,GC,C,U/T,A */
06647 , { -120, -185, -120, -150, -165} /* AT,GC,C,U/T,C */
06648 , { 185, 120, 185, 155, 140} /* AT,GC,C,U/T,G */
06649 , { 40, -25, 40, 10, -5} /* AT,GC,C,U/T,U/T */
06650 }
06651 }
06652 , {{ 785, -235, 460, 760, 415} /* AT,GC,G,E,E */
06653 , { 785, -235, 370, 760, 325} /* AT,GC,G,E,A */
06654 , { 560, -450, 145, 535, 100} /* AT,GC,G,E,C */
06655 , { 600, -420, 460, 575, 415} /* AT,GC,G,E,G */
06656 , { 560, -450, 145, 535, 100} /* AT,GC,G,E,U/T */
06657 }
06658 , {{ 520, -500, 105, 495, 60} /* AT,GC,G,A,E */
06659 , { 520, -500, 105, 495, 60} /* AT,GC,G,A,A */
06660 , { 295, -725, -120, 270, -165} /* AT,GC,G,A,C */
06661 , { -490, -1095, -490, -725, -535} /* AT,GC,G,A,G */
06662 , { 295, -725, -120, 270, -165} /* AT,GC,G,A,U/T */
06663 }
06664 , {{ 480, -540, 70, 455, 25} /* AT,GC,G,C,E */
06665 , { 480, -540, 70, 455, 25} /* AT,GC,G,C,A */
06666 , { 330, -570, -85, 305, -130} /* AT,GC,G,C,C */
06667 , { 480, -540, 70, 455, 25} /* AT,GC,G,C,G */
06668 , { 330, -570, -85, 305, -130} /* AT,GC,G,C,U/T */
06669 }
06670 , {{ 350, -670, 250, 325, 205} /* AT,GC,G,G,E */
06671 , { -195, -805, -195, -435, -240} /* AT,GC,G,G,A */
06672 , { 350, -670, -65, 325, -110} /* AT,GC,G,G,C */
06673 , { 250, -985, 250, -615, 205} /* AT,GC,G,G,G */
06674 , { 350, -670, -65, 325, -110} /* AT,GC,G,G,U/T */
06675 }
06676 , {{ 600, -420, 190, 575, 145} /* AT,GC,G,U/T,E */
06677 , { 600, -420, 190, 575, 145} /* AT,GC,G,U/T,A */
06678 , { 295, -605, -120, 270, -165} /* AT,GC,G,U/T,C */
06679 , { 600, -420, 190, 575, 145} /* AT,GC,G,U/T,G */
06680 , { 45, -565, 45, -195, 0} /* AT,GC,G,U/T,U/T */
06681 }
06682 }
06683 , {{ 455, 390, 455, 425, -45} /* AT,GC,U/T,E,E */
06684 , { 365, 300, 365, 335, -45} /* AT,GC,U/T,E,A */
06685 , { 145, 80, 145, 115, -390} /* AT,GC,U/T,E,C */
06686 , { 455, 390, 455, 425, -350} /* AT,GC,U/T,E,G */
06687 , { 145, 80, 145, 115, -390} /* AT,GC,U/T,E,U/T */
06688 }
06689 , {{ 100, 35, 100, 70, -310} /* AT,GC,U/T,A,E */
06690 , { 100, 35, 100, 70, -310} /* AT,GC,U/T,A,A */
06691 , { -120, -185, -120, -150, -655} /* AT,GC,U/T,A,C */
06692 , { -370, -555, -370, -520, -1025} /* AT,GC,U/T,A,G */
06693 , { -120, -185, -120, -150, -655} /* AT,GC,U/T,A,U/T */
06694 }
06695 , {{ 65, 0, 65, 35, -470} /* AT,GC,U/T,C,E */
06696 , { 65, 0, 65, 35, -470} /* AT,GC,U/T,C,A */
06697 , { -85, -150, -85, -115, -620} /* AT,GC,U/T,C,C */
06698 , { 65, 0, 65, 35, -470} /* AT,GC,U/T,C,G */
06699 , { -85, -150, -85, -115, -620} /* AT,GC,U/T,C,U/T */
06700 }
06701 , {{ 245, 180, 245, 215, -600} /* AT,GC,U/T,G,E */
06702 , { -80, -265, -80, -230, -735} /* AT,GC,U/T,G,A */
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06703      , {      -65,      -130,      -65,      -95,      -600} /* AT,GC,U/T,G,C */
06704      , {      245,      180,      245,      215,      -915} /* AT,GC,U/T,G,G */
06705      , {      -65,      -130,      -65,      -95,      -600} /* AT,GC,U/T,G,U/T */
06706      }
06707      , {{      185,      120,      185,      155,      -350} /* AT,GC,U/T,U/T,E */
06708      , {      185,      120,      185,      155,      -350} /* AT,GC,U/T,U/T,A */
06709      , {     -120,     -185,     -120,     -150,     -655} /* AT,GC,U/T,U/T,C */
06710      , {      185,      120,      185,      155,      -350} /* AT,GC,U/T,U/T,G */
06711      , {       40,      -25,       40,       10,     -495} /* AT,GC,U/T,U/T,U/T */
06712      }
06713      }
06714      }
06715      , {{{      845,      785,      700,      665,      655} /* AT,GT,E,E,E */
06716      , {      485,      250,      280,      460,      235} /* AT,GT,E,E,A */
06717      , {      485,      160,       75,      460,       30} /* AT,GT,E,E,C */
06718      , {      845,      785,      700,      665,      655} /* AT,GT,E,E,G */
06719      , {      485,      280,       75,      460,       30} /* AT,GT,E,E,U/T */
06720      }
06721      , {{      220,     -105,      -80,      195,     -125} /* AT,GT,E,A,E */
06722      , {      130,     -195,     -280,      105,     -325} /* AT,GT,E,A,A */
06723      , {      220,     -105,     -190,      195,     -235} /* AT,GT,E,A,C */
06724      , {      -50,     -110,      -80,     -230,     -125} /* AT,GT,E,A,G */
06725      , {      220,     -105,     -190,      195,     -235} /* AT,GT,E,A,U/T */
06726      }
06727      , {{      365,       40,      -45,      340,      -90} /* AT,GT,E,C,E */
06728      , {      365,       40,      -45,      340,      -90} /* AT,GT,E,C,A */
06729      , {      365,       40,      -45,      340,      -90} /* AT,GT,E,C,C */
06730      , {      365,       40,      -45,      340,      -90} /* AT,GT,E,C,G */
06731      , {      365,       40,      -45,      340,      -90} /* AT,GT,E,C,U/T */
06732      }
06733      , {{      635,      575,      490,      455,      445} /* AT,GT,E,G,E */
06734      , {      100,       40,       70,      -80,       25} /* AT,GT,E,G,A */
06735      , {      275,      -50,     -135,      250,     -180} /* AT,GT,E,G,C */
06736      , {      635,      575,      490,      455,      445} /* AT,GT,E,G,G */
06737      , {      275,      -50,     -135,      250,     -180} /* AT,GT,E,G,U/T */
06738      }
06739      , {{      485,      280,       75,      460,       30} /* AT,GT,E,U/T,E */
06740      , {      485,      160,       75,      460,       30} /* AT,GT,E,U/T,A */
06741      , {      485,      160,       75,      460,       30} /* AT,GT,E,U/T,C */
06742      , {      485,      160,       75,      460,       30} /* AT,GT,E,U/T,G */
06743      , {      340,      280,       75,       40,       30} /* AT,GT,E,U/T,U/T */
06744      }
06745      }
06746      , {{{      845,      785,      700,     -290,      655} /* AT,GT,A,E,E */
06747      , {      310,      250,      160,     -320,      115} /* AT,GT,A,E,A */
06748      , {      220,      160,       75,     -290,       30} /* AT,GT,A,E,C */
06749      , {      845,      785,      700,     -410,      655} /* AT,GT,A,E,G */
06750      , {      340,      280,       75,     -290,       30} /* AT,GT,A,E,U/T */
06751      }
06752      , {{      -45,     -105,     -190,     -675,     -235} /* AT,GT,A,A,E */
06753      , {     -135,     -195,     -280,     -765,     -325} /* AT,GT,A,A,A */
06754      , {      -45,     -105,     -190,     -675,     -235} /* AT,GT,A,A,C */
06755      , {      -50,     -110,     -200,     -680,     -245} /* AT,GT,A,A,G */
06756      , {      -45,     -105,     -190,     -675,     -235} /* AT,GT,A,A,U/T */
06757      }
06758      , {{      100,       40,      -45,     -410,      -90} /* AT,GT,A,C,E */
06759      , {      100,       40,      -45,     -530,      -90} /* AT,GT,A,C,A */
06760      , {      100,       40,      -45,     -410,      -90} /* AT,GT,A,C,C */
06761      , {      100,       40,      -45,     -530,      -90} /* AT,GT,A,C,G */
06762      , {      100,       40,      -45,     -410,      -90} /* AT,GT,A,C,U/T */
06763      }
06764      , {{{      635,      575,      490,     -530,      445} /* AT,GT,A,G,E */
06765      , {      100,       40,      -50,     -530,     -95} /* AT,GT,A,G,A */
06766      , {       10,      -50,     -135,     -620,     -180} /* AT,GT,A,G,C */
06767      , {      635,      575,      490,     -620,      445} /* AT,GT,A,G,G */
06768      , {       10,      -50,     -135,     -620,     -180} /* AT,GT,A,G,U/T */
06769      }
06770      , {{      340,      280,       75,     -290,       30} /* AT,GT,A,U/T,E */
06771      , {      220,      160,       75,     -410,       30} /* AT,GT,A,U/T,A */
06772      , {      220,      160,       75,     -290,       30} /* AT,GT,A,U/T,C */
06773      , {      220,      160,       75,     -410,       30} /* AT,GT,A,U/T,G */
06774      , {      340,      280,       75,     -410,       30} /* AT,GT,A,U/T,U/T */
06775      }
06776      }
06777      , {{{      695,      630,      695,      665,      650} /* AT,GT,C,E,E */
06778      , {      280,       95,      280,      130,      235} /* AT,GT,C,E,A */
06779      , {       70,        5,       70,       40,       25} /* AT,GT,C,E,C */
06780      , {      695,      630,      695,      665,      650} /* AT,GT,C,E,G */
06781      , {       70,        5,       70,       40,       25} /* AT,GT,C,E,U/T */
06782      }
06783      , {{      -80,     -260,      -80,     -225,     -125} /* AT,GT,C,A,E */
06784      , {     -285,     -350,     -285,     -315,     -330} /* AT,GT,C,A,A */
06785      , {     -195,     -260,     -195,     -225,     -240} /* AT,GT,C,A,C */
06786      , {      -80,     -265,      -80,     -230,     -125} /* AT,GT,C,A,G */
06787      , {     -195,     -260,     -195,     -225,     -240} /* AT,GT,C,A,U/T */
06788      }
06789      , {{      -50,     -115,      -50,      -80,      -95} /* AT,GT,C,C,E */

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06790      , {      -50,      -115,      -50,      -80,      -95} /* AT,GT,C,C,A */
06791      , {      -50,      -115,      -50,      -80,      -95} /* AT,GT,C,C,C */
06792      , {      -50,      -115,      -50,      -80,      -95} /* AT,GT,C,C,G */
06793      , {      -50,      -115,      -50,      -80,      -95} /* AT,GT,C,C,U/T */
06794      }
06795      , { {      485,      420,      485,      455,      440} /* AT,GT,C,G,E */
06796      , {      70,      -115,      70,      -80,      25} /* AT,GT,C,G,A */
06797      , {     -140,     -205,     -140,     -170,     -185} /* AT,GT,C,G,C */
06798      , {      485,      420,      485,      455,      440} /* AT,GT,C,G,G */
06799      , {     -140,     -205,     -140,     -170,     -185} /* AT,GT,C,G,U/T */
06800      }
06801      , { {      70,       5,      70,      40,      25} /* AT,GT,C,U/T,E */
06802      , {      70,       5,      70,      40,      25} /* AT,GT,C,U/T,A */
06803      , {      70,       5,      70,      40,      25} /* AT,GT,C,U/T,C */
06804      , {      70,       5,      70,      40,      25} /* AT,GT,C,U/T,G */
06805      , {      70,       5,      70,      40,      25} /* AT,GT,C,U/T,U/T */
06806      }
06807      }
06808      , { { {      700,     -415,      700,      460,      655} /* AT,GT,G,E,E */
06809      , {      485,     -445,      160,      460,      115} /* AT,GT,G,E,A */
06810      , {      485,     -415,       75,      460,      30} /* AT,GT,G,E,C */
06811      , {      700,     -535,      700,      460,      655} /* AT,GT,G,E,G */
06812      , {      485,     -415,       75,      460,      30} /* AT,GT,G,E,U/T */
06813      }
06814      , { {      220,     -800,     -190,      195,     -235} /* AT,GT,G,A,E */
06815      , {      130,     -890,     -280,      105,     -325} /* AT,GT,G,A,A */
06816      , {      220,     -800,     -190,      195,     -235} /* AT,GT,G,A,C */
06817      , {     -200,     -805,     -200,     -435,     -245} /* AT,GT,G,A,G */
06818      , {      220,     -800,     -190,      195,     -235} /* AT,GT,G,A,U/T */
06819      }
06820      , { {      365,     -535,     -45,      340,     -90} /* AT,GT,G,C,E */
06821      , {      365,     -655,     -45,      340,     -90} /* AT,GT,G,C,A */
06822      , {      365,     -535,     -45,      340,     -90} /* AT,GT,G,C,C */
06823      , {      365,     -655,     -45,      340,     -90} /* AT,GT,G,C,G */
06824      , {      365,     -535,     -45,      340,     -90} /* AT,GT,G,C,U/T */
06825      }
06826      , { {      490,     -655,      490,      250,      445} /* AT,GT,G,G,E */
06827      , {     -50,     -655,     -50,     -285,     -95} /* AT,GT,G,G,A */
06828      , {      275,     -745,     -135,      250,     -180} /* AT,GT,G,G,C */
06829      , {      490,     -745,      490,     -375,      445} /* AT,GT,G,G,G */
06830      , {      275,     -745,     -135,      250,     -180} /* AT,GT,G,G,U/T */
06831      }
06832      , { {      485,     -415,       75,      460,      30} /* AT,GT,G,U/T,E */
06833      , {      485,     -535,       75,      460,      30} /* AT,GT,G,U/T,A */
06834      , {      485,     -415,       75,      460,      30} /* AT,GT,G,U/T,C */
06835      , {      485,     -535,       75,      460,      30} /* AT,GT,G,U/T,G */
06836      , {       75,     -535,       75,     -165,      30} /* AT,GT,G,U/T,U/T */
06837      }
06838      }
06839      , { { {      695,      630,      695,      665,     -375} /* AT,GT,U/T,E,E */
06840      , {      280,       95,      280,      130,     -375} /* AT,GT,U/T,E,A */
06841      , {       70,       5,      70,      40,     -465} /* AT,GT,U/T,E,C */
06842      , {      695,      630,      695,      665,     -465} /* AT,GT,U/T,E,G */
06843      , {       70,       5,      70,      40,     -465} /* AT,GT,U/T,E,U/T */
06844      }
06845      , { {     -80,     -260,     -80,     -225,     -700} /* AT,GT,U/T,A,E */
06846      , {     -285,     -350,     -285,     -315,     -700} /* AT,GT,U/T,A,A */
06847      , {     -195,     -260,     -195,     -225,     -730} /* AT,GT,U/T,A,C */
06848      , {     -80,     -265,     -80,     -230,     -735} /* AT,GT,U/T,A,G */
06849      , {     -195,     -260,     -195,     -225,     -730} /* AT,GT,U/T,A,U/T */
06850      }
06851      , { {     -50,     -115,     -50,     -80,     -585} /* AT,GT,U/T,C,E */
06852      , {     -50,     -115,     -50,     -80,     -585} /* AT,GT,U/T,C,A */
06853      , {     -50,     -115,     -50,     -80,     -585} /* AT,GT,U/T,C,C */
06854      , {     -50,     -115,     -50,     -80,     -585} /* AT,GT,U/T,C,G */
06855      , {     -50,     -115,     -50,     -80,     -585} /* AT,GT,U/T,C,U/T */
06856      }
06857      , { {      485,      420,      485,      455,     -585} /* AT,GT,U/T,G,E */
06858      , {       70,     -115,       70,     -80,     -585} /* AT,GT,U/T,G,A */
06859      , {     -140,     -205,     -140,     -170,     -675} /* AT,GT,U/T,G,C */
06860      , {      485,      420,      485,      455,     -675} /* AT,GT,U/T,G,G */
06861      , {     -140,     -205,     -140,     -170,     -675} /* AT,GT,U/T,G,U/T */
06862      }
06863      , { {       70,       5,      70,      40,     -465} /* AT,GT,U/T,U/T,E */
06864      , {       70,       5,      70,      40,     -465} /* AT,GT,U/T,U/T,A */
06865      , {       70,       5,      70,      40,     -465} /* AT,GT,U/T,U/T,C */
06866      , {       70,       5,      70,      40,     -465} /* AT,GT,U/T,U/T,G */
06867      , {       70,       5,      70,      40,     -465} /* AT,GT,U/T,U/T,U/T */
06868      }
06869      }
06870      }
06871      , { { { {      1135,     1075,      990,     1005,      945} /* AT,UG,E,E,E */
06872      , {      1030,      705,      620,     1005,      575} /* AT,UG,E,E,A */
06873      , {       780,      450,      365,      755,      320} /* AT,UG,E,E,C */
06874      , {      1135,     1075,      990,      960,      945} /* AT,UG,E,E,G */
06875      , {       780,      570,      365,      755,      320} /* AT,UG,E,E,U/T */
06876      }

```

```

06877 ,{{ 1015, 690, 605, 990, 560} /* AT,UG,E,A,E */
06878 ,{ 1015, 690, 605, 990, 560} /* AT,UG,E,A,A */
06879 ,{ 765, 435, 350, 740, 305} /* AT,UG,E,A,C */
06880 ,{ 330, 270, 300, 150, 255} /* AT,UG,E,A,G */
06881 ,{ 765, 435, 350, 740, 305} /* AT,UG,E,A,U/T */
06882 }
06883 ,{{ 780, 450, 365, 755, 320} /* AT,UG,E,C,E */
06884 ,{ 780, 450, 365, 755, 320} /* AT,UG,E,C,A */
06885 ,{ 780, 450, 365, 755, 320} /* AT,UG,E,C,C */
06886 ,{ 780, 450, 365, 755, 320} /* AT,UG,E,C,G */
06887 ,{ 780, 450, 365, 755, 320} /* AT,UG,E,C,U/T */
06888 }
06889 ,{{ 1040, 980, 895, 865, 850} /* AT,UG,E,G,E */
06890 ,{ 165, 105, 135, -15, 90} /* AT,UG,E,G,A */
06891 ,{ 685, 355, 270, 660, 225} /* AT,UG,E,G,C */
06892 ,{ 1040, 980, 895, 865, 850} /* AT,UG,E,G,G */
06893 ,{ 685, 355, 270, 660, 225} /* AT,UG,E,G,U/T */
06894 }
06895 ,{{ 360, 150, -55, 335, -100} /* AT,UG,E,U/T,E */
06896 ,{ 360, 30, -55, 335, -100} /* AT,UG,E,U/T,A */
06897 ,{ 360, 30, -55, 335, -100} /* AT,UG,E,U/T,C */
06898 ,{ 360, 30, -55, 335, -100} /* AT,UG,E,U/T,G */
06899 ,{ 210, 150, -55, -85, -100} /* AT,UG,E,U/T,U/T */
06900 }
06901 }
06902 ,{{{ 1135, 1075, 990, 140, 945} /* AT,UG,A,E,E */
06903 ,{ 765, 705, 620, 140, 575} /* AT,UG,A,E,A */
06904 ,{ 510, 450, 365, 5, 320} /* AT,UG,A,E,C */
06905 ,{ 1135, 1075, 990, -115, 945} /* AT,UG,A,E,G */
06906 ,{ 630, 570, 365, 5, 320} /* AT,UG,A,E,U/T */
06907 }
06908 ,{{ 750, 690, 605, 125, 560} /* AT,UG,A,A,E */
06909 ,{ 750, 690, 605, 125, 560} /* AT,UG,A,A,A */
06910 ,{ 495, 435, 350, -130, 305} /* AT,UG,A,A,C */
06911 ,{ 330, 270, 180, -300, 135} /* AT,UG,A,A,G */
06912 ,{ 495, 435, 350, -130, 305} /* AT,UG,A,A,U/T */
06913 }
06914 ,{{ 510, 450, 365, 5, 320} /* AT,UG,A,C,E */
06915 ,{ 510, 450, 365, -115, 320} /* AT,UG,A,C,A */
06916 ,{ 510, 450, 365, 5, 320} /* AT,UG,A,C,C */
06917 ,{ 510, 450, 365, -115, 320} /* AT,UG,A,C,G */
06918 ,{ 510, 450, 365, 5, 320} /* AT,UG,A,C,U/T */
06919 }
06920 ,{{ 1040, 980, 895, -210, 850} /* AT,UG,A,G,E */
06921 ,{ 165, 105, 15, -465, -30} /* AT,UG,A,G,A */
06922 ,{ 415, 355, 270, -210, 225} /* AT,UG,A,G,C */
06923 ,{ 1040, 980, 895, -210, 850} /* AT,UG,A,G,G */
06924 ,{ 415, 355, 270, -210, 225} /* AT,UG,A,G,U/T */
06925 }
06926 ,{{ 210, 150, -55, -415, -100} /* AT,UG,A,U/T,E */
06927 ,{ 90, 30, -55, -535, -100} /* AT,UG,A,U/T,A */
06928 ,{ 90, 30, -55, -415, -100} /* AT,UG,A,U/T,C */
06929 ,{ 90, 30, -55, -535, -100} /* AT,UG,A,U/T,G */
06930 ,{ 210, 150, -55, -535, -100} /* AT,UG,A,U/T,U/T */
06931 }
06932 }
06933 ,{{{ 990, 925, 990, 960, 945} /* AT,UG,C,E,E */
06934 ,{ 615, 550, 615, 585, 570} /* AT,UG,C,E,A */
06935 ,{ 365, 300, 365, 335, 320} /* AT,UG,C,E,C */
06936 ,{ 990, 925, 990, 960, 945} /* AT,UG,C,E,G */
06937 ,{ 365, 300, 365, 335, 320} /* AT,UG,C,E,U/T */
06938 }
06939 ,{{ 600, 535, 600, 570, 555} /* AT,UG,C,A,E */
06940 ,{ 600, 535, 600, 570, 555} /* AT,UG,C,A,A */
06941 ,{ 350, 285, 350, 320, 305} /* AT,UG,C,A,C */
06942 ,{ 300, 115, 300, 150, 255} /* AT,UG,C,A,G */
06943 ,{ 350, 285, 350, 320, 305} /* AT,UG,C,A,U/T */
06944 }
06945 ,{{ 365, 300, 365, 335, 320} /* AT,UG,C,C,E */
06946 ,{ 365, 300, 365, 335, 320} /* AT,UG,C,C,A */
06947 ,{ 365, 300, 365, 335, 320} /* AT,UG,C,C,C */
06948 ,{ 365, 300, 365, 335, 320} /* AT,UG,C,C,G */
06949 ,{ 365, 300, 365, 335, 320} /* AT,UG,C,C,U/T */
06950 }
06951 ,{{ 895, 830, 895, 865, 850} /* AT,UG,C,G,E */
06952 ,{ 135, -50, 135, -15, 90} /* AT,UG,C,G,A */
06953 ,{ 270, 205, 270, 240, 225} /* AT,UG,C,G,C */
06954 ,{ 895, 830, 895, 865, 850} /* AT,UG,C,G,G */
06955 ,{ 270, 205, 270, 240, 225} /* AT,UG,C,G,U/T */
06956 }
06957 ,{{ -55, -120, -55, -85, -100} /* AT,UG,C,U/T,E */
06958 ,{ -55, -120, -55, -85, -100} /* AT,UG,C,U/T,A */
06959 ,{ -55, -120, -55, -85, -100} /* AT,UG,C,U/T,C */
06960 ,{ -55, -120, -55, -85, -100} /* AT,UG,C,U/T,G */
06961 ,{ -55, -120, -55, -85, -100} /* AT,UG,C,U/T,U/T */
06962 }
06963 }

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06964 ,{{{ 1030, 15, 990, 1005, 945} /* AT,UG,G,E,E */
06965 ,{ 1030, 15, 620, 1005, 575} /* AT,UG,G,E,A */
06966 ,{ 780, -120, 365, 755, 320} /* AT,UG,G,E,C */
06967 ,{ 990, -240, 990, 755, 945} /* AT,UG,G,E,G */
06968 ,{ 780, -120, 365, 755, 320} /* AT,UG,G,E,U/T */
06969 }
06970 ,{{{ 1015, 0, 605, 990, 560} /* AT,UG,G,A,E */
06971 ,{ 1015, 0, 605, 990, 560} /* AT,UG,G,A,A */
06972 ,{ 765, -255, 350, 740, 305} /* AT,UG,G,A,C */
06973 ,{ 180, -425, 180, -55, 135} /* AT,UG,G,A,G */
06974 ,{ 765, -255, 350, 740, 305} /* AT,UG,G,A,U/T */
06975 }
06976 ,{{{ 780, -120, 365, 755, 320} /* AT,UG,G,C,E */
06977 ,{ 780, -240, 365, 755, 320} /* AT,UG,G,C,A */
06978 ,{ 780, -120, 365, 755, 320} /* AT,UG,G,C,C */
06979 ,{ 780, -240, 365, 755, 320} /* AT,UG,G,C,G */
06980 ,{ 780, -120, 365, 755, 320} /* AT,UG,G,C,U/T */
06981 }
06982 ,{{{ 895, -335, 895, 660, 850} /* AT,UG,G,G,E */
06983 ,{ 15, -590, 15, -220, -30} /* AT,UG,G,G,A */
06984 ,{ 685, -335, 270, 660, 225} /* AT,UG,G,G,C */
06985 ,{ 895, -335, 895, 35, 850} /* AT,UG,G,G,G */
06986 ,{ 685, -335, 270, 660, 225} /* AT,UG,G,G,U/T */
06987 }
06988 ,{{{ 360, -540, -55, 335, -100} /* AT,UG,G,U/T,E */
06989 ,{ 360, -660, -55, 335, -100} /* AT,UG,G,U/T,A */
06990 ,{ 360, -540, -55, 335, -100} /* AT,UG,G,U/T,C */
06991 ,{ 360, -660, -55, 335, -100} /* AT,UG,G,U/T,G */
06992 ,{ -55, -660, -55, -290, -100} /* AT,UG,G,U/T,U/T */
06993 }
06994 }
06995 ,{{{ 990, 925, 990, 960, 205} /* AT,UG,U/T,E,E */
06996 ,{ 615, 550, 615, 585, 205} /* AT,UG,U/T,E,A */
06997 ,{ 365, 300, 365, 335, -170} /* AT,UG,U/T,E,C */
06998 ,{ 990, 925, 990, 960, -170} /* AT,UG,U/T,E,G */
06999 ,{ 365, 300, 365, 335, -170} /* AT,UG,U/T,E,U/T */
07000 }
07001 ,{{{ 600, 535, 600, 570, 190} /* AT,UG,U/T,A,E */
07002 ,{ 600, 535, 600, 570, 190} /* AT,UG,U/T,A,A */
07003 ,{ 350, 285, 350, 320, -185} /* AT,UG,U/T,A,C */
07004 ,{ 300, 115, 300, 150, -355} /* AT,UG,U/T,A,G */
07005 ,{ 350, 285, 350, 320, -185} /* AT,UG,U/T,A,U/T */
07006 }
07007 ,{{{ 365, 300, 365, 335, -170} /* AT,UG,U/T,C,E */
07008 ,{ 365, 300, 365, 335, -170} /* AT,UG,U/T,C,A */
07009 ,{ 365, 300, 365, 335, -170} /* AT,UG,U/T,C,C */
07010 ,{ 365, 300, 365, 335, -170} /* AT,UG,U/T,C,G */
07011 ,{ 365, 300, 365, 335, -170} /* AT,UG,U/T,C,U/T */
07012 }
07013 ,{{{ 895, 830, 895, 865, -265} /* AT,UG,U/T,G,E */
07014 ,{ 135, -50, 135, -15, -520} /* AT,UG,U/T,G,A */
07015 ,{ 270, 205, 270, 240, -265} /* AT,UG,U/T,G,C */
07016 ,{ 895, 830, 895, 865, -265} /* AT,UG,U/T,G,G */
07017 ,{ 270, 205, 270, 240, -265} /* AT,UG,U/T,G,U/T */
07018 }
07019 ,{{{ -55, -120, -55, -85, -590} /* AT,UG,U/T,U/T,E */
07020 ,{ -55, -120, -55, -85, -590} /* AT,UG,U/T,U/T,A */
07021 ,{ -55, -120, -55, -85, -590} /* AT,UG,U/T,U/T,C */
07022 ,{ -55, -120, -55, -85, -590} /* AT,UG,U/T,U/T,G */
07023 ,{ -55, -120, -55, -85, -590} /* AT,UG,U/T,U/T,U/T */
07024 }
07025 }
07026 }
07027 ,{{{ 1455, 1395, 1305, 1430, 1260} /* AT,AT,E,E,E */
07028 ,{ 1455, 1130, 1040, 1430, 995} /* AT,AT,E,E,A */
07029 ,{ 1305, 980, 890, 1280, 845} /* AT,AT,E,E,C */
07030 ,{ 1455, 1395, 1305, 1280, 1260} /* AT,AT,E,E,G */
07031 ,{ 1305, 980, 890, 1280, 845} /* AT,AT,E,E,U/T */
07032 }
07033 ,{{{ 1395, 1070, 980, 1370, 935} /* AT,AT,E,A,E */
07034 ,{ 1395, 1070, 980, 1370, 935} /* AT,AT,E,A,A */
07035 ,{ 1240, 915, 825, 1215, 780} /* AT,AT,E,A,C */
07036 ,{ 435, 375, 405, 255, 360} /* AT,AT,E,A,G */
07037 ,{ 1240, 915, 825, 1215, 780} /* AT,AT,E,A,U/T */
07038 }
07039 ,{{{ 1305, 980, 895, 1280, 850} /* AT,AT,E,C,E */
07040 ,{ 1305, 980, 895, 1280, 850} /* AT,AT,E,C,A */
07041 ,{ 1305, 980, 890, 1280, 845} /* AT,AT,E,C,C */
07042 ,{ 1305, 980, 895, 1280, 850} /* AT,AT,E,C,G */
07043 ,{ 1305, 980, 890, 1280, 845} /* AT,AT,E,C,U/T */
07044 }
07045 ,{{{ 1430, 1370, 1280, 1250, 1235} /* AT,AT,E,G,E */
07046 ,{ 560, 500, 530, 380, 485} /* AT,AT,E,G,A */
07047 ,{ 1275, 950, 860, 1250, 815} /* AT,AT,E,G,C */
07048 ,{ 1430, 1370, 1280, 1250, 1235} /* AT,AT,E,G,G */
07049 ,{ 1275, 950, 860, 1250, 815} /* AT,AT,E,G,U/T */
07050 }
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07051 ,{{ 1260, 935, 850, 1235, 805} /* AT,AT,E,U/T,E */
07052 ,{ 1260, 935, 850, 1235, 805} /* AT,AT,E,U/T,A */
07053 ,{ 1260, 935, 845, 1235, 800} /* AT,AT,E,U/T,C */
07054 ,{ 1260, 935, 850, 1235, 805} /* AT,AT,E,U/T,G */
07055 ,{ 625, 565, 360, 325, 315} /* AT,AT,E,U/T,U/T */
07056 }
07057 }
07058 ,{{{ 1455, 1395, 1305, 560, 1260} /* AT,AT,A,E,E */
07059 ,{ 1190, 1130, 1040, 560, 995} /* AT,AT,A,E,A */
07060 ,{ 1040, 980, 890, 530, 845} /* AT,AT,A,E,C */
07061 ,{ 1455, 1395, 1305, 415, 1260} /* AT,AT,A,E,G */
07062 ,{ 1040, 980, 890, 530, 845} /* AT,AT,A,E,U/T */
07063 }
07064 ,{{ 1130, 1070, 980, 500, 935} /* AT,AT,A,A,E */
07065 ,{ 1130, 1070, 980, 500, 935} /* AT,AT,A,A,A */
07066 ,{ 975, 915, 825, 345, 780} /* AT,AT,A,A,C */
07067 ,{ 435, 375, 290, -195, 245} /* AT,AT,A,A,G */
07068 ,{ 975, 915, 825, 345, 780} /* AT,AT,A,A,U/T */
07069 }
07070 ,{{ 1040, 980, 895, 530, 850} /* AT,AT,A,C,E */
07071 ,{ 1040, 980, 895, 415, 850} /* AT,AT,A,C,A */
07072 ,{ 1040, 980, 890, 530, 845} /* AT,AT,A,C,C */
07073 ,{ 1040, 980, 895, 415, 850} /* AT,AT,A,C,G */
07074 ,{ 1040, 980, 890, 530, 845} /* AT,AT,A,C,U/T */
07075 }
07076 ,{{{ 1430, 1370, 1280, 380, 1235} /* AT,AT,A,G,E */
07077 ,{ 560, 500, 415, -70, 370} /* AT,AT,A,G,A */
07078 ,{ 1010, 950, 860, 380, 815} /* AT,AT,A,G,C */
07079 ,{ 1430, 1370, 1280, 175, 1235} /* AT,AT,A,G,G */
07080 ,{ 1010, 950, 860, 380, 815} /* AT,AT,A,G,U/T */
07081 }
07082 ,{{{ 995, 935, 850, 485, 805} /* AT,AT,A,U/T,E */
07083 ,{ 995, 935, 850, 370, 805} /* AT,AT,A,U/T,A */
07084 ,{ 995, 935, 845, 485, 800} /* AT,AT,A,U/T,C */
07085 ,{ 995, 935, 850, 370, 805} /* AT,AT,A,U/T,G */
07086 ,{ 625, 565, 360, -125, 315} /* AT,AT,A,U/T,U/T */
07087 }
07088 }
07089 ,{{{ 1305, 1240, 1305, 1275, 1260} /* AT,AT,C,E,E */
07090 ,{ 1040, 975, 1040, 1010, 995} /* AT,AT,C,E,A */
07091 ,{ 890, 825, 890, 860, 845} /* AT,AT,C,E,C */
07092 ,{ 1305, 1240, 1305, 1275, 1260} /* AT,AT,C,E,G */
07093 ,{ 890, 825, 890, 860, 845} /* AT,AT,C,E,U/T */
07094 }
07095 ,{{{ 980, 915, 980, 950, 935} /* AT,AT,C,A,E */
07096 ,{ 980, 915, 980, 950, 935} /* AT,AT,C,A,A */
07097 ,{ 825, 760, 825, 795, 780} /* AT,AT,C,A,C */
07098 ,{ 405, 220, 405, 255, 360} /* AT,AT,C,A,G */
07099 ,{ 825, 760, 825, 795, 780} /* AT,AT,C,A,U/T */
07100 }
07101 ,{{{ 890, 825, 890, 860, 845} /* AT,AT,C,C,E */
07102 ,{ 890, 825, 890, 860, 845} /* AT,AT,C,C,A */
07103 ,{ 890, 825, 890, 860, 845} /* AT,AT,C,C,C */
07104 ,{ 890, 825, 890, 860, 845} /* AT,AT,C,C,G */
07105 ,{ 890, 825, 890, 860, 845} /* AT,AT,C,C,U/T */
07106 }
07107 ,{{{ 1280, 1215, 1280, 1250, 1235} /* AT,AT,C,G,E */
07108 ,{ 530, 345, 530, 380, 485} /* AT,AT,C,G,A */
07109 ,{ 860, 795, 860, 830, 815} /* AT,AT,C,G,C */
07110 ,{ 1280, 1215, 1280, 1250, 1235} /* AT,AT,C,G,G */
07111 ,{ 860, 795, 860, 830, 815} /* AT,AT,C,G,U/T */
07112 }
07113 ,{{{ 845, 780, 845, 815, 800} /* AT,AT,C,U/T,E */
07114 ,{ 845, 780, 845, 815, 800} /* AT,AT,C,U/T,A */
07115 ,{ 845, 780, 845, 815, 800} /* AT,AT,C,U/T,C */
07116 ,{ 845, 780, 845, 815, 800} /* AT,AT,C,U/T,G */
07117 ,{ 355, 290, 355, 325, 310} /* AT,AT,C,U/T,U/T */
07118 }
07119 }
07120 ,{{{ 1455, 435, 1305, 1430, 1260} /* AT,AT,G,E,E */
07121 ,{ 1455, 435, 1040, 1430, 995} /* AT,AT,G,E,A */
07122 ,{ 1305, 405, 890, 1280, 845} /* AT,AT,G,E,C */
07123 ,{ 1305, 290, 1305, 1280, 1260} /* AT,AT,G,E,G */
07124 ,{ 1305, 405, 890, 1280, 845} /* AT,AT,G,E,U/T */
07125 }
07126 ,{{{ 1395, 375, 980, 1370, 935} /* AT,AT,G,A,E */
07127 ,{ 1395, 375, 980, 1370, 935} /* AT,AT,G,A,A */
07128 ,{ 1240, 220, 825, 1215, 780} /* AT,AT,G,A,C */
07129 ,{ 290, -320, 290, 50, 245} /* AT,AT,G,A,G */
07130 ,{ 1240, 220, 825, 1215, 780} /* AT,AT,G,A,U/T */
07131 }
07132 ,{{{ 1305, 405, 895, 1280, 850} /* AT,AT,G,C,E */
07133 ,{ 1305, 290, 895, 1280, 850} /* AT,AT,G,C,A */
07134 ,{ 1305, 405, 890, 1280, 845} /* AT,AT,G,C,C */
07135 ,{ 1305, 290, 895, 1280, 850} /* AT,AT,G,C,G */
07136 ,{ 1305, 405, 890, 1280, 845} /* AT,AT,G,C,U/T */
07137 }

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07138 ,{{ 1280, 255, 1280, 1250, 1235} /* AT,AT,G,G,E */
07139 ,{ 415, -195, 415, 175, 370} /* AT,AT,G,G,A */
07140 ,{ 1275, 255, 860, 1250, 815} /* AT,AT,G,G,C */
07141 ,{ 1280, 50, 1280, 420, 1235} /* AT,AT,G,G,G */
07142 ,{ 1275, 255, 860, 1250, 815} /* AT,AT,G,G,U/T */
07143 }
07144 ,{{ 1260, 360, 850, 1235, 805} /* AT,AT,G,U/T,E */
07145 ,{ 1260, 245, 850, 1235, 805} /* AT,AT,G,U/T,A */
07146 ,{ 1260, 360, 845, 1235, 800} /* AT,AT,G,U/T,C */
07147 ,{ 1260, 245, 850, 1235, 805} /* AT,AT,G,U/T,G */
07148 ,{ 360, -250, 360, 120, 315} /* AT,AT,G,U/T,U/T */
07149 }
07150 }
07151 ,{{{ 1305, 1240, 1305, 1275, 625} /* AT,AT,U/T,E,E */
07152 ,{ 1040, 975, 1040, 1010, 625} /* AT,AT,U/T,E,A */
07153 ,{ 890, 825, 890, 860, 355} /* AT,AT,U/T,E,C */
07154 ,{ 1305, 1240, 1305, 1275, 360} /* AT,AT,U/T,E,G */
07155 ,{ 890, 825, 890, 860, 355} /* AT,AT,U/T,E,U/T */
07156 }
07157 ,{{ 980, 915, 980, 950, 565} /* AT,AT,U/T,A,E */
07158 ,{ 980, 915, 980, 950, 565} /* AT,AT,U/T,A,A */
07159 ,{ 825, 760, 825, 795, 290} /* AT,AT,U/T,A,C */
07160 ,{ 405, 220, 405, 255, -250} /* AT,AT,U/T,A,G */
07161 ,{ 825, 760, 825, 795, 290} /* AT,AT,U/T,A,U/T */
07162 }
07163 ,{{ 890, 825, 890, 860, 360} /* AT,AT,U/T,C,E */
07164 ,{ 890, 825, 890, 860, 360} /* AT,AT,U/T,C,A */
07165 ,{ 890, 825, 890, 860, 355} /* AT,AT,U/T,C,C */
07166 ,{ 890, 825, 890, 860, 360} /* AT,AT,U/T,C,G */
07167 ,{ 890, 825, 890, 860, 355} /* AT,AT,U/T,C,U/T */
07168 }
07169 ,{{ 1280, 1215, 1280, 1250, 325} /* AT,AT,U/T,G,E */
07170 ,{ 530, 345, 530, 380, -125} /* AT,AT,U/T,G,A */
07171 ,{ 860, 795, 860, 830, 325} /* AT,AT,U/T,G,C */
07172 ,{ 1280, 1215, 1280, 1250, 120} /* AT,AT,U/T,G,G */
07173 ,{ 860, 795, 860, 830, 325} /* AT,AT,U/T,G,U/T */
07174 }
07175 ,{{ 845, 780, 845, 815, 315} /* AT,AT,U/T,U/T,E */
07176 ,{ 845, 780, 845, 815, 315} /* AT,AT,U/T,U/T,A */
07177 ,{ 845, 780, 845, 815, 310} /* AT,AT,U/T,U/T,C */
07178 ,{ 845, 780, 845, 815, 315} /* AT,AT,U/T,U/T,G */
07179 ,{ 355, 290, 355, 325, -180} /* AT,AT,U/T,U/T,U/T */
07180 }
07181 }
07182 }
07183 ,{{{ 1415, 1355, 1270, 1330, 1225} /* AT,UA,E,E,E */
07184 ,{ 1355, 1030, 945, 1330, 900} /* AT,UA,E,E,A */
07185 ,{ 1290, 965, 880, 1265, 835} /* AT,UA,E,E,C */
07186 ,{ 1415, 1355, 1270, 1265, 1225} /* AT,UA,E,E,G */
07187 ,{ 1225, 900, 815, 1200, 770} /* AT,UA,E,E,U/T */
07188 }
07189 ,{{ 1340, 1015, 930, 1315, 885} /* AT,UA,E,A,E */
07190 ,{ 1340, 1015, 930, 1315, 885} /* AT,UA,E,A,A */
07191 ,{ 1200, 875, 790, 1175, 745} /* AT,UA,E,A,C */
07192 ,{ 375, 315, 345, 195, 300} /* AT,UA,E,A,G */
07193 ,{ 1200, 875, 790, 1175, 745} /* AT,UA,E,A,U/T */
07194 }
07195 ,{{ 1290, 965, 880, 1265, 835} /* AT,UA,E,C,E */
07196 ,{ 1290, 965, 880, 1265, 835} /* AT,UA,E,C,A */
07197 ,{ 1290, 965, 880, 1265, 835} /* AT,UA,E,C,C */
07198 ,{ 1290, 965, 880, 1265, 835} /* AT,UA,E,C,G */
07199 ,{ 1225, 900, 815, 1200, 770} /* AT,UA,E,C,U/T */
07200 }
07201 ,{{ 1320, 1260, 1175, 1140, 1130} /* AT,UA,E,G,E */
07202 ,{ 145, 85, 115, -35, 70} /* AT,UA,E,G,A */
07203 ,{ 1120, 795, 710, 1095, 665} /* AT,UA,E,G,C */
07204 ,{ 1320, 1260, 1175, 1140, 1130} /* AT,UA,E,G,G */
07205 ,{ 1120, 795, 710, 1095, 665} /* AT,UA,E,G,U/T */
07206 }
07207 ,{{ 870, 545, 460, 845, 415} /* AT,UA,E,U/T,E */
07208 ,{ 870, 545, 460, 845, 415} /* AT,UA,E,U/T,A */
07209 ,{ 650, 325, 240, 625, 195} /* AT,UA,E,U/T,C */
07210 ,{ 870, 545, 460, 845, 415} /* AT,UA,E,U/T,G */
07211 ,{ 255, 195, -10, -45, -55} /* AT,UA,E,U/T,U/T */
07212 }
07213 }
07214 ,{{{ 1415, 1355, 1270, 515, 1225} /* AT,UA,A,E,E */
07215 ,{ 1090, 1030, 945, 460, 900} /* AT,UA,A,E,A */
07216 ,{ 1025, 965, 880, 515, 835} /* AT,UA,A,E,C */
07217 ,{ 1415, 1355, 1270, 395, 1225} /* AT,UA,A,E,G */
07218 ,{ 960, 900, 815, 455, 770} /* AT,UA,A,E,U/T */
07219 }
07220 ,{{ 1075, 1015, 930, 445, 885} /* AT,UA,A,A,E */
07221 ,{ 1075, 1015, 930, 445, 885} /* AT,UA,A,A,A */
07222 ,{ 935, 875, 790, 310, 745} /* AT,UA,A,A,C */
07223 ,{ 375, 315, 230, -255, 185} /* AT,UA,A,A,G */
07224 ,{ 935, 875, 790, 310, 745} /* AT,UA,A,A,U/T */
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07225      }
07226      ,{{ 1025, 965, 880, 515, 835} /* AT,UA,A,C,E */
07227      ,{ 1025, 965, 880, 395, 835} /* AT,UA,A,C,A */
07228      ,{ 1025, 965, 880, 515, 835} /* AT,UA,A,C,C */
07229      ,{ 1025, 965, 880, 395, 835} /* AT,UA,A,C,G */
07230      ,{ 960, 900, 815, 455, 770} /* AT,UA,A,C,U/T */
07231      }
07232      ,{{ 1320, 1260, 1175, 230, 1130} /* AT,UA,A,G,E */
07233      ,{ 145, 85, 0, -485, -45} /* AT,UA,A,G,A */
07234      ,{ 855, 795, 710, 230, 665} /* AT,UA,A,G,C */
07235      ,{ 1320, 1260, 1175, 70, 1130} /* AT,UA,A,G,G */
07236      ,{ 855, 795, 710, 230, 665} /* AT,UA,A,G,U/T */
07237      }
07238      ,{{ 605, 545, 460, -25, 415} /* AT,UA,A,U/T,E */
07239      ,{ 605, 545, 460, -25, 415} /* AT,UA,A,U/T,A */
07240      ,{ 385, 325, 240, -120, 195} /* AT,UA,A,U/T,C */
07241      ,{ 605, 545, 460, -25, 415} /* AT,UA,A,U/T,G */
07242      ,{ 255, 195, -10, -490, -55} /* AT,UA,A,U/T,U/T */
07243      }
07244      }
07245      ,{{{ 1265, 1200, 1265, 1235, 1220} /* AT,UA,C,E,E */
07246      ,{ 940, 875, 940, 910, 895} /* AT,UA,C,E,A */
07247      ,{ 875, 810, 875, 845, 830} /* AT,UA,C,E,C */
07248      ,{ 1265, 1200, 1265, 1235, 1220} /* AT,UA,C,E,G */
07249      ,{ 810, 745, 810, 780, 765} /* AT,UA,C,E,U/T */
07250      }
07251      ,{{ 925, 860, 925, 895, 880} /* AT,UA,C,A,E */
07252      ,{ 925, 860, 925, 895, 880} /* AT,UA,C,A,A */
07253      ,{ 785, 720, 785, 755, 740} /* AT,UA,C,A,C */
07254      ,{ 345, 160, 345, 195, 300} /* AT,UA,C,A,G */
07255      ,{ 785, 720, 785, 755, 740} /* AT,UA,C,A,U/T */
07256      }
07257      ,{{ 875, 810, 875, 845, 830} /* AT,UA,C,C,E */
07258      ,{ 875, 810, 875, 845, 830} /* AT,UA,C,C,A */
07259      ,{ 875, 810, 875, 845, 830} /* AT,UA,C,C,C */
07260      ,{ 875, 810, 875, 845, 830} /* AT,UA,C,C,G */
07261      ,{ 810, 745, 810, 780, 765} /* AT,UA,C,C,U/T */
07262      }
07263      ,{{{ 1170, 1105, 1170, 1140, 1125} /* AT,UA,C,G,E */
07264      ,{ 115, -70, 115, -35, 70} /* AT,UA,C,G,A */
07265      ,{ 705, 640, 705, 675, 660} /* AT,UA,C,G,C */
07266      ,{ 1170, 1105, 1170, 1140, 1125} /* AT,UA,C,G,G */
07267      ,{ 705, 640, 705, 675, 660} /* AT,UA,C,G,U/T */
07268      }
07269      ,{{{ 455, 390, 455, 425, 410} /* AT,UA,C,U/T,E */
07270      ,{ 455, 390, 455, 425, 410} /* AT,UA,C,U/T,A */
07271      ,{ 235, 170, 235, 205, 190} /* AT,UA,C,U/T,C */
07272      ,{ 455, 390, 455, 425, 410} /* AT,UA,C,U/T,G */
07273      ,{ -15, -80, -15, -45, -60} /* AT,UA,C,U/T,U/T */
07274      }
07275      }
07276      ,{{{ 1355, 395, 1270, 1330, 1225} /* AT,UA,G,E,E */
07277      ,{ 1355, 335, 945, 1330, 900} /* AT,UA,G,E,A */
07278      ,{ 1290, 395, 880, 1265, 835} /* AT,UA,G,E,C */
07279      ,{ 1290, 275, 1270, 1265, 1225} /* AT,UA,G,E,G */
07280      ,{ 1225, 330, 815, 1200, 770} /* AT,UA,G,E,U/T */
07281      }
07282      ,{{{ 1340, 320, 930, 1315, 885} /* AT,UA,G,A,E */
07283      ,{ 1340, 320, 930, 1315, 885} /* AT,UA,G,A,A */
07284      ,{ 1200, 185, 790, 1175, 745} /* AT,UA,G,A,C */
07285      ,{ 230, -380, 230, -10, 185} /* AT,UA,G,A,G */
07286      ,{ 1200, 185, 790, 1175, 745} /* AT,UA,G,A,U/T */
07287      }
07288      ,{{{ 1290, 395, 880, 1265, 835} /* AT,UA,G,C,E */
07289      ,{ 1290, 395, 880, 1265, 835} /* AT,UA,G,C,A */
07290      ,{ 1290, 375, 880, 1265, 835} /* AT,UA,G,C,C */
07291      ,{ 1290, 275, 880, 1265, 835} /* AT,UA,G,C,G */
07292      ,{ 1225, 330, 815, 1200, 770} /* AT,UA,G,C,U/T */
07293      }
07294      ,{{{ 1175, 105, 1175, 1095, 1130} /* AT,UA,G,G,E */
07295      ,{ 0, -610, 0, -240, -45} /* AT,UA,G,G,A */
07296      ,{ 1120, 105, 710, 1095, 665} /* AT,UA,G,G,C */
07297      ,{ 1175, -55, 1175, 310, 1130} /* AT,UA,G,G,G */
07298      ,{ 1120, 105, 710, 1095, 665} /* AT,UA,G,G,U/T */
07299      }
07300      ,{{{ 870, -145, 460, 845, 415} /* AT,UA,G,U/T,E */
07301      ,{ 870, -145, 460, 845, 415} /* AT,UA,G,U/T,A */
07302      ,{ 650, -245, 240, 625, 195} /* AT,UA,G,U/T,C */
07303      ,{ 870, -145, 460, 845, 415} /* AT,UA,G,U/T,G */
07304      ,{ -10, -615, -10, -245, -55} /* AT,UA,G,U/T,U/T */
07305      }
07306      }
07307      ,{{{ 1265, 1200, 1265, 1235, 525} /* AT,UA,U/T,E,E */
07308      ,{ 940, 875, 940, 910, 525} /* AT,UA,U/T,E,A */
07309      ,{ 875, 810, 875, 845, 345} /* AT,UA,U/T,E,C */
07310      ,{ 1265, 1200, 1265, 1235, 345} /* AT,UA,U/T,E,G */
07311      ,{ 810, 745, 810, 780, 280} /* AT,UA,U/T,E,U/T */

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07312     }
07313     ,{{      925,      860,      925,      895,      510} /* AT,UA,U/T,A,E */
07314     ,{{      925,      860,      925,      895,      510} /* AT,UA,U/T,A,A */
07315     ,{{      785,      720,      785,      755,      255} /* AT,UA,U/T,A,C */
07316     ,{{      345,      160,      345,      195,     -310} /* AT,UA,U/T,A,G */
07317     ,{{      785,      720,      785,      755,      255} /* AT,UA,U/T,A,U/T */
07318     }
07319     ,{{      875,      810,      875,      845,      345} /* AT,UA,U/T,C,E */
07320     ,{{      875,      810,      875,      845,      345} /* AT,UA,U/T,C,A */
07321     ,{{      875,      810,      875,      845,      345} /* AT,UA,U/T,C,C */
07322     ,{{      875,      810,      875,      845,      345} /* AT,UA,U/T,C,G */
07323     ,{{      810,      745,      810,      780,      280} /* AT,UA,U/T,C,U/T */
07324     }
07325     ,{{     1170,     1105,     1170,     1140,      175} /* AT,UA,U/T,G,E */
07326     ,{{      115,      -70,      115,      -35,     -540} /* AT,UA,U/T,G,A */
07327     ,{{      705,      640,      705,      675,      175} /* AT,UA,U/T,G,C */
07328     ,{{     1170,     1105,     1170,     1140,       15} /* AT,UA,U/T,G,G */
07329     ,{{      705,      640,      705,      675,      175} /* AT,UA,U/T,G,U/T */
07330     }
07331     ,{{      455,      390,      455,      425,      -75} /* AT,UA,U/T,U/T,E */
07332     ,{{      455,      390,      455,      425,      -75} /* AT,UA,U/T,U/T,A */
07333     ,{{      235,      170,      235,      205,     -295} /* AT,UA,U/T,U/T,C */
07334     ,{{      455,      390,      455,      425,      -75} /* AT,UA,U/T,U/T,G */
07335     ,{{      -15,      -80,      -15,      -45,     -545} /* AT,UA,U/T,U/T,U/T */
07336     }
07337     }
07338     }
07339     ,{{{     1545,     1485,     1400,     1460,     1355} /* AT,NN,E,E,E */
07340     ,{{      1485,     1160,     1075,     1460,     1030} /* AT,NN,E,E,A */
07341     ,{{      1420,     1095,     1010,     1395,      965} /* AT,NN,E,E,C */
07342     ,{{      1545,     1485,     1400,     1395,     1355} /* AT,NN,E,E,G */
07343     ,{{      1355,     1030,      945,     1330,      900} /* AT,NN,E,E,U/T */
07344     }
07345     ,{{      1425,     1100,     1015,     1400,      970} /* AT,NN,E,A,E */
07346     ,{{      1425,     1100,     1015,     1400,      970} /* AT,NN,E,A,A */
07347     ,{{      1285,      960,      875,     1260,      830} /* AT,NN,E,A,C */
07348     ,{{      570,      510,      545,      395,      500} /* AT,NN,E,A,G */
07349     ,{{      1285,      960,      875,     1260,      830} /* AT,NN,E,A,U/T */
07350     }
07351     ,{{      1420,     1095,     1010,     1395,      965} /* AT,NN,E,C,E */
07352     ,{{      1420,     1095,     1010,     1395,      965} /* AT,NN,E,C,A */
07353     ,{{      1420,     1095,     1010,     1395,      965} /* AT,NN,E,C,C */
07354     ,{{      1420,     1095,     1010,     1395,      965} /* AT,NN,E,C,G */
07355     ,{{      1355,     1030,      945,     1330,      900} /* AT,NN,E,C,U/T */
07356     }
07357     ,{{      1520,     1460,     1375,     1340,     1330} /* AT,NN,E,G,E */
07358     ,{{      560,      500,      530,      380,      485} /* AT,NN,E,G,A */
07359     ,{{      1320,      995,      910,     1295,      865} /* AT,NN,E,G,C */
07360     ,{{      1520,     1460,     1375,     1340,     1330} /* AT,NN,E,G,G */
07361     ,{{      1320,      995,      910,     1295,      865} /* AT,NN,E,G,U/T */
07362     }
07363     ,{{      1375,     1050,      965,     1350,      920} /* AT,NN,E,U/T,E */
07364     ,{{      1375,     1050,      965,     1350,      920} /* AT,NN,E,U/T,A */
07365     ,{{      1260,      935,      845,     1235,      800} /* AT,NN,E,U/T,C */
07366     ,{{      1375,     1050,      965,     1350,      920} /* AT,NN,E,U/T,G */
07367     ,{{      760,      700,      495,      460,      450} /* AT,NN,E,U/T,U/T */
07368     }
07369     }
07370     ,{{{     1545,     1485,     1400,      645,     1355} /* AT,NN,A,E,E */
07371     ,{{      1220,     1160,     1075,      590,     1030} /* AT,NN,A,E,A */
07372     ,{{      1155,     1095,     1010,      645,      965} /* AT,NN,A,E,C */
07373     ,{{      1545,     1485,     1400,      525,     1355} /* AT,NN,A,E,G */
07374     ,{{      1090,     1030,      945,      585,      900} /* AT,NN,A,E,U/T */
07375     }
07376     ,{{{     1160,     1100,     1015,      530,      970} /* AT,NN,A,A,E */
07377     ,{{      1160,     1100,     1015,      530,      970} /* AT,NN,A,A,A */
07378     ,{{      1020,      960,      875,      395,      830} /* AT,NN,A,A,C */
07379     ,{{      570,      510,      425,     -55,      380} /* AT,NN,A,A,G */
07380     ,{{      1020,      960,      875,      395,      830} /* AT,NN,A,A,U/T */
07381     }
07382     ,{{{     1155,     1095,     1010,      645,      965} /* AT,NN,A,C,E */
07383     ,{{      1155,     1095,     1010,      525,      965} /* AT,NN,A,C,A */
07384     ,{{      1155,     1095,     1010,      645,      965} /* AT,NN,A,C,C */
07385     ,{{      1155,     1095,     1010,      525,      965} /* AT,NN,A,C,G */
07386     ,{{      1090,     1030,      945,      585,      900} /* AT,NN,A,C,U/T */
07387     }
07388     ,{{{     1520,     1460,     1375,      430,     1330} /* AT,NN,A,G,E */
07389     ,{{      560,      500,      415,     -70,      370} /* AT,NN,A,G,A */
07390     ,{{      1055,      995,      910,      430,      865} /* AT,NN,A,G,C */
07391     ,{{      1520,     1460,     1375,      270,     1330} /* AT,NN,A,G,G */
07392     ,{{      1055,      995,      910,      430,      865} /* AT,NN,A,G,U/T */
07393     }
07394     ,{{{     1110,     1050,      965,      485,      920} /* AT,NN,A,U/T,E */
07395     ,{{      1110,     1050,      965,      480,      920} /* AT,NN,A,U/T,A */
07396     ,{{      995,      935,      845,      485,      800} /* AT,NN,A,U/T,C */
07397     ,{{      1110,     1050,      965,      480,      920} /* AT,NN,A,U/T,G */
07398     ,{{      760,      700,      495,       15,      450} /* AT,NN,A,U/T,U/T */

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07399      }
07400      }
07401      ,{{{ 1395, 1330, 1395, 1365, 1350} /* AT,NN,C,E,E */
07402      ,{ 1070, 1005, 1070, 1040, 1025} /* AT,NN,C,E,A */
07403      ,{ 1005, 940, 1005, 975, 960} /* AT,NN,C,E,C */
07404      ,{ 1395, 1330, 1395, 1365, 1350} /* AT,NN,C,E,G */
07405      ,{ 940, 875, 940, 910, 895} /* AT,NN,C,E,U/T */
07406      }
07407      ,{{{ 1010, 945, 1010, 980, 965} /* AT,NN,C,A,E */
07408      ,{ 1010, 945, 1010, 980, 965} /* AT,NN,C,A,A */
07409      ,{ 870, 805, 870, 840, 825} /* AT,NN,C,A,C */
07410      ,{ 545, 360, 545, 395, 500} /* AT,NN,C,A,G */
07411      ,{ 870, 805, 870, 840, 825} /* AT,NN,C,A,U/T */
07412      }
07413      ,{{{ 1005, 940, 1005, 975, 960} /* AT,NN,C,C,E */
07414      ,{ 1005, 940, 1005, 975, 960} /* AT,NN,C,C,A */
07415      ,{ 1005, 940, 1005, 975, 960} /* AT,NN,C,C,C */
07416      ,{ 1005, 940, 1005, 975, 960} /* AT,NN,C,C,G */
07417      ,{ 940, 875, 940, 910, 895} /* AT,NN,C,C,U/T */
07418      }
07419      ,{{{ 1370, 1305, 1370, 1340, 1325} /* AT,NN,C,G,E */
07420      ,{ 530, 345, 530, 380, 485} /* AT,NN,C,G,A */
07421      ,{ 905, 840, 905, 875, 860} /* AT,NN,C,G,C */
07422      ,{ 1370, 1305, 1370, 1340, 1325} /* AT,NN,C,G,G */
07423      ,{ 905, 840, 905, 875, 860} /* AT,NN,C,G,U/T */
07424      }
07425      ,{{{ 960, 895, 960, 930, 915} /* AT,NN,C,U/T,E */
07426      ,{ 960, 895, 960, 930, 915} /* AT,NN,C,U/T,A */
07427      ,{ 845, 780, 845, 815, 800} /* AT,NN,C,U/T,C */
07428      ,{ 960, 895, 960, 930, 915} /* AT,NN,C,U/T,G */
07429      ,{ 490, 425, 490, 460, 445} /* AT,NN,C,U/T,U/T */
07430      }
07431      }
07432      ,{{{ 1485, 525, 1400, 1460, 1355} /* AT,NN,G,E,E */
07433      ,{ 1485, 465, 1075, 1460, 1030} /* AT,NN,G,E,A */
07434      ,{ 1420, 525, 1010, 1395, 965} /* AT,NN,G,E,C */
07435      ,{ 1420, 405, 1400, 1395, 1355} /* AT,NN,G,E,G */
07436      ,{ 1355, 460, 945, 1330, 900} /* AT,NN,G,E,U/T */
07437      }
07438      ,{{{ 1425, 405, 1015, 1400, 970} /* AT,NN,G,A,E */
07439      ,{ 1425, 405, 1015, 1400, 970} /* AT,NN,G,A,A */
07440      ,{ 1285, 270, 875, 1260, 830} /* AT,NN,G,A,C */
07441      ,{ 425, -180, 425, 190, 380} /* AT,NN,G,A,G */
07442      ,{ 1285, 270, 875, 1260, 830} /* AT,NN,G,A,U/T */
07443      }
07444      ,{{{ 1420, 525, 1010, 1395, 965} /* AT,NN,G,C,E */
07445      ,{ 1420, 405, 1010, 1395, 965} /* AT,NN,G,C,A */
07446      ,{ 1420, 525, 1010, 1395, 965} /* AT,NN,G,C,C */
07447      ,{ 1420, 405, 1010, 1395, 965} /* AT,NN,G,C,G */
07448      ,{ 1355, 460, 945, 1330, 900} /* AT,NN,G,C,U/T */
07449      }
07450      ,{{{ 1375, 305, 1375, 1295, 1330} /* AT,NN,G,G,E */
07451      ,{ 415, -195, 415, 175, 370} /* AT,NN,G,G,A */
07452      ,{ 1320, 305, 910, 1295, 865} /* AT,NN,G,G,C */
07453      ,{ 1375, 145, 1375, 510, 1330} /* AT,NN,G,G,G */
07454      ,{ 1320, 305, 910, 1295, 865} /* AT,NN,G,G,U/T */
07455      }
07456      ,{{{ 1375, 360, 965, 1350, 920} /* AT,NN,G,U/T,E */
07457      ,{ 1375, 360, 965, 1350, 920} /* AT,NN,G,U/T,A */
07458      ,{ 1260, 360, 845, 1235, 800} /* AT,NN,G,U/T,C */
07459      ,{ 1375, 360, 965, 1350, 920} /* AT,NN,G,U/T,G */
07460      ,{ 495, -110, 495, 260, 450} /* AT,NN,G,U/T,U/T */
07461      }
07462      }
07463      ,{{{ 1395, 1330, 1395, 1365, 655} /* AT,NN,U/T,E,E */
07464      ,{ 1070, 1005, 1070, 1040, 655} /* AT,NN,U/T,E,A */
07465      ,{ 1005, 940, 1005, 975, 475} /* AT,NN,U/T,E,C */
07466      ,{ 1395, 1330, 1395, 1365, 475} /* AT,NN,U/T,E,G */
07467      ,{ 940, 875, 940, 910, 410} /* AT,NN,U/T,E,U/T */
07468      }
07469      ,{{{ 1010, 945, 1010, 980, 595} /* AT,NN,U/T,A,E */
07470      ,{ 1010, 945, 1010, 980, 595} /* AT,NN,U/T,A,A */
07471      ,{ 870, 805, 870, 840, 340} /* AT,NN,U/T,A,C */
07472      ,{ 545, 360, 545, 395, -110} /* AT,NN,U/T,A,G */
07473      ,{ 870, 805, 870, 840, 340} /* AT,NN,U/T,A,U/T */
07474      }
07475      ,{{{ 1005, 940, 1005, 975, 475} /* AT,NN,U/T,C,E */
07476      ,{ 1005, 940, 1005, 975, 475} /* AT,NN,U/T,C,A */
07477      ,{ 1005, 940, 1005, 975, 475} /* AT,NN,U/T,C,C */
07478      ,{ 1005, 940, 1005, 975, 475} /* AT,NN,U/T,C,G */
07479      ,{ 940, 875, 940, 910, 410} /* AT,NN,U/T,C,U/T */
07480      }
07481      ,{{{ 1370, 1305, 1370, 1340, 375} /* AT,NN,U/T,G,E */
07482      ,{ 530, 345, 530, 380, -125} /* AT,NN,U/T,G,A */
07483      ,{ 905, 840, 905, 875, 375} /* AT,NN,U/T,G,C */
07484      ,{ 1370, 1305, 1370, 1340, 215} /* AT,NN,U/T,G,G */
07485      ,{ 905, 840, 905, 875, 375} /* AT,NN,U/T,G,U/T */

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07486     }
07487     ,{{      960,      895,      960,      930,      430} /* AT,NN,U/T,U/T,E */
07488     ,{{      960,      895,      960,      930,      430} /* AT,NN,U/T,U/T,A */
07489     ,{{      845,      780,      845,      815,      310} /* AT,NN,U/T,U/T,C */
07490     ,{{      960,      895,      960,      930,      430} /* AT,NN,U/T,U/T,G */
07491     ,{{      490,      425,      490,      460,     -40} /* AT,NN,U/T,U/T,U/T */
07492     }
07493     }
07494     }
07495     }
07496     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,E,E */
07497     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,E,A */
07498     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,E,C */
07499     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,E,G */
07500     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,E,U/T */
07501     }
07502     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,A,E */
07503     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,A,A */
07504     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,A,C */
07505     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,A,G */
07506     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,A,U/T */
07507     }
07508     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,C,E */
07509     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,C,A */
07510     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,C,C */
07511     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,C,G */
07512     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,C,U/T */
07513     }
07514     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,G,E */
07515     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,G,A */
07516     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,G,C */
07517     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,G,G */
07518     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,G,U/T */
07519     }
07520     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,U/T,E */
07521     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,U/T,A */
07522     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,U/T,C */
07523     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,U/T,G */
07524     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,E,U/T,U/T */
07525     }
07526     }
07527     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,E,E */
07528     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,E,A */
07529     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,E,C */
07530     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,E,G */
07531     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,E,U/T */
07532     }
07533     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,A,E */
07534     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,A,A */
07535     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,A,C */
07536     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,A,G */
07537     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,A,U/T */
07538     }
07539     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,C,E */
07540     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,C,A */
07541     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,C,C */
07542     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,C,G */
07543     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,C,U/T */
07544     }
07545     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,G,E */
07546     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,G,A */
07547     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,G,C */
07548     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,G,G */
07549     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,G,U/T */
07550     }
07551     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,U/T,E */
07552     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,U/T,A */
07553     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,U/T,C */
07554     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,U/T,G */
07555     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,A,U/T,U/T */
07556     }
07557     }
07558     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,E,E */
07559     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,E,A */
07560     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,E,C */
07561     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,E,G */
07562     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,E,U/T */
07563     }
07564     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,E */
07565     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,A */
07566     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,C */
07567     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,G */
07568     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,A,U/T */
07569     }
07570     ,{{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,E */
07571     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,A */
07572     ,{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,C */
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07573      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,G */
07574      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,C,U/T */
07575      }
07576      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,E */
07577      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,A */
07578      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,C */
07579      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,G */
07580      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,G,U/T */
07581      }
07582      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U/T,E */
07583      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U/T,A */
07584      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U/T,C */
07585      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U/T,G */
07586      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,C,U/T,U/T */
07587      }
07588      }
07589      , {{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,E */
07590      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,A */
07591      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,C */
07592      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,G */
07593      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,E,U/T */
07594      }
07595      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,E */
07596      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,A */
07597      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,C */
07598      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,G */
07599      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,A,U/T */
07600      }
07601      , {{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,E */
07602      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,A */
07603      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,C */
07604      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,G */
07605      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,C,U/T */
07606      }
07607      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,E */
07608      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,A */
07609      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,C */
07610      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,G */
07611      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,G,U/T */
07612      }
07613      , {{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U/T,E */
07614      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U/T,A */
07615      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U/T,C */
07616      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U/T,G */
07617      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,G,U/T,U/T */
07618      }
07619      }
07620      , {{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,E,E */
07621      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,E,A */
07622      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,E,C */
07623      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,E,G */
07624      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,E,U/T */
07625      }
07626      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,A,E */
07627      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,A,A */
07628      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,A,C */
07629      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,A,G */
07630      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,A,U/T */
07631      }
07632      , {{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,C,E */
07633      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,C,A */
07634      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,C,C */
07635      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,C,G */
07636      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,C,U/T */
07637      }
07638      , {{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,G,E */
07639      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,G,A */
07640      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,G,C */
07641      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,G,G */
07642      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,G,U/T */
07643      }
07644      , {{{      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,E */
07645      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,A */
07646      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,C */
07647      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,G */
07648      , {      INF,      INF,      INF,      INF,      INF} /* UA,NP,U/T,U/T,U/T */
07649      }
07650      }
07651      }
07652      , {{{      595,      330,      280,      500,      -140} /* UA,CG,E,E,E */
07653      , {      570,      230,      180,      475,      -240} /* UA,CG,E,E,A */
07654      , {      595,      255,      205,      500,      -215} /* UA,CG,E,E,C */
07655      , {      570,      330,      280,      475,      -140} /* UA,CG,E,E,G */
07656      , {      545,      200,      150,      450,      -270} /* UA,CG,E,E,U/T */
07657      }
07658      , {{      480,      135,      100,      385,      -335} /* UA,CG,E,A,E */
07659      , {      480,      135,      85,      385,      -335} /* UA,CG,E,A,A */

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07660 , { 325, -20, -70, 230, -490} /* UA,CG,E,A,C */
07661 , { 100, 30, 100, -190, -440} /* UA,CG,E,A,G */
07662 , { 325, -20, -70, 230, -490} /* UA,CG,E,A,U/T */
07663 }
07664 , { { 570, 230, 180, 475, -240} /* UA,CG,E,C,E */
07665 , { 570, 230, 180, 475, -240} /* UA,CG,E,C,A */
07666 , { 565, 225, 175, 470, -245} /* UA,CG,E,C,C */
07667 , { 570, 230, 180, 475, -240} /* UA,CG,E,C,G */
07668 , { 545, 200, 150, 450, -270} /* UA,CG,E,C,U/T */
07669 }
07670 , { { 320, 305, 255, 225, -165} /* UA,CG,E,G,E */
07671 , { -45, -120, -45, -335, -585} /* UA,CG,E,G,A */
07672 , { 320, -25, -75, 225, -495} /* UA,CG,E,G,C */
07673 , { 320, 305, 255, 85, -165} /* UA,CG,E,G,G */
07674 , { 320, -25, -75, 225, -495} /* UA,CG,E,G,U/T */
07675 }
07676 , { { 555, 215, 165, 460, -255} /* UA,CG,E,U/T,E */
07677 , { 530, 190, 140, 435, -280} /* UA,CG,E,U/T,A */
07678 , { 555, 215, 165, 460, -255} /* UA,CG,E,U/T,C */
07679 , { 530, 190, 140, 435, -280} /* UA,CG,E,U/T,G */
07680 , { -70, -85, -255, -425, -675} /* UA,CG,E,U/T,U/T */
07681 }
07682 }
07683 , { { { 345, 330, 280, -555, -140} /* UA,CG,A,E,E */
07684 , { 245, 230, 180, -700, -240} /* UA,CG,A,E,A */
07685 , { 270, 255, 205, -555, -215} /* UA,CG,A,E,C */
07686 , { 345, 330, 280, -700, -140} /* UA,CG,A,E,G */
07687 , { 215, 200, 150, -610, -270} /* UA,CG,A,E,U/T */
07688 }
07689 , { { 150, 135, 85, -795, -335} /* UA,CG,A,A,E */
07690 , { 150, 135, 85, -795, -335} /* UA,CG,A,A,A */
07691 , { -5, -20, -70, -950, -490} /* UA,CG,A,A,C */
07692 , { 45, 30, -20, -900, -440} /* UA,CG,A,A,G */
07693 , { -5, -20, -70, -950, -490} /* UA,CG,A,A,U/T */
07694 }
07695 , { { 245, 230, 180, -585, -240} /* UA,CG,A,C,E */
07696 , { 245, 230, 180, -700, -240} /* UA,CG,A,C,A */
07697 , { 240, 225, 175, -585, -245} /* UA,CG,A,C,C */
07698 , { 245, 230, 180, -700, -240} /* UA,CG,A,C,G */
07699 , { 215, 200, 150, -610, -270} /* UA,CG,A,C,U/T */
07700 }
07701 , { { 320, 305, 255, -955, -165} /* UA,CG,A,G,E */
07702 , { -105, -120, -165, -1050, -585} /* UA,CG,A,G,A */
07703 , { -10, -25, -75, -955, -495} /* UA,CG,A,G,C */
07704 , { 320, 305, 255, -1255, -165} /* UA,CG,A,G,G */
07705 , { -10, -25, -75, -955, -495} /* UA,CG,A,G,U/T */
07706 }
07707 , { { 230, 215, 165, -595, -255} /* UA,CG,A,U/T,E */
07708 , { 205, 190, 140, -740, -280} /* UA,CG,A,U/T,A */
07709 , { 230, 215, 165, -595, -255} /* UA,CG,A,U/T,C */
07710 , { 205, 190, 140, -740, -280} /* UA,CG,A,U/T,G */
07711 , { -70, -85, -255, -1135, -675} /* UA,CG,A,U/T,U/T */
07712 }
07713 }
07714 , { { { 280, 190, 280, 110, -360} /* UA,CG,C,E,E */
07715 , { 180, 90, 180, 10, -460} /* UA,CG,C,E,A */
07716 , { 205, 115, 205, 35, -435} /* UA,CG,C,E,C */
07717 , { 280, 190, 280, 110, -360} /* UA,CG,C,E,G */
07718 , { 150, 60, 150, -20, -490} /* UA,CG,C,E,U/T */
07719 }
07720 , { { 100, -5, 100, -85, -540} /* UA,CG,C,A,E */
07721 , { 85, -5, 85, -85, -550} /* UA,CG,C,A,A */
07722 , { -70, -155, -70, -235, -705} /* UA,CG,C,A,C */
07723 , { 100, -110, 100, -190, -540} /* UA,CG,C,A,G */
07724 , { -70, -155, -70, -235, -705} /* UA,CG,C,A,U/T */
07725 }
07726 , { { 180, 90, 180, 10, -460} /* UA,CG,C,C,E */
07727 , { 180, 90, 180, 10, -460} /* UA,CG,C,C,A */
07728 , { 175, 85, 175, 5, -465} /* UA,CG,C,C,C */
07729 , { 180, 90, 180, 10, -460} /* UA,CG,C,C,G */
07730 , { 150, 60, 150, -20, -490} /* UA,CG,C,C,U/T */
07731 }
07732 , { { 255, 165, 255, 85, -385} /* UA,CG,C,G,E */
07733 , { -45, -255, -45, -335, -685} /* UA,CG,C,G,A */
07734 , { -75, -160, -75, -240, -710} /* UA,CG,C,G,C */
07735 , { 255, 165, 255, 85, -385} /* UA,CG,C,G,G */
07736 , { -75, -160, -75, -240, -710} /* UA,CG,C,G,U/T */
07737 }
07738 , { { 165, 75, 165, -5, -475} /* UA,CG,C,U/T,E */
07739 , { 140, 50, 140, -30, -500} /* UA,CG,C,U/T,A */
07740 , { 165, 75, 165, -5, -475} /* UA,CG,C,U/T,C */
07741 , { 140, 50, 140, -30, -500} /* UA,CG,C,U/T,G */
07742 , { -255, -345, -255, -425, -895} /* UA,CG,C,U/T,U/T */
07743 }
07744 }
07745 , { { { 595, -325, 280, 500, -140} /* UA,CG,G,E,E */
07746 , { 570, -470, 180, 475, -240} /* UA,CG,G,E,A */
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07747 , { 595, -325, 205, 500, -215} /* UA,CG,G,E,C */
07748 , { 570, -470, 280, 475, -140} /* UA,CG,G,E,G */
07749 , { 545, -380, 150, 450, -270} /* UA,CG,G,E,U/T */
07750 }
07751 , { { 480, -565, 85, 385, -335} /* UA,CG,G,A,E */
07752 , { 480, -565, 85, 385, -335} /* UA,CG,G,A,A */
07753 , { 325, -720, -70, 230, -490} /* UA,CG,G,A,C */
07754 , { -20, -670, -20, -350, -440} /* UA,CG,G,A,G */
07755 , { 325, -720, -70, 230, -490} /* UA,CG,G,A,U/T */
07756 }
07757 , { { 570, -355, 180, 475, -240} /* UA,CG,G,C,E */
07758 , { 570, -470, 180, 475, -240} /* UA,CG,G,C,A */
07759 , { 565, -355, 175, 470, -245} /* UA,CG,G,C,C */
07760 , { 570, -470, 180, 475, -240} /* UA,CG,G,C,G */
07761 , { 545, -380, 150, 450, -270} /* UA,CG,G,C,U/T */
07762 }
07763 , { { 320, -725, 255, 225, -165} /* UA,CG,G,G,E */
07764 , { -165, -820, -165, -495, -585} /* UA,CG,G,G,A */
07765 , { 320, -725, -75, 225, -495} /* UA,CG,G,G,C */
07766 , { 255, -1025, 255, -700, -165} /* UA,CG,G,G,G */
07767 , { 320, -725, -75, 225, -495} /* UA,CG,G,G,U/T */
07768 }
07769 , { { 555, -365, 165, 460, -255} /* UA,CG,G,U/T,E */
07770 , { 530, -510, 140, 435, -280} /* UA,CG,G,U/T,A */
07771 , { 555, -365, 165, 460, -255} /* UA,CG,G,U/T,C */
07772 , { 530, -510, 140, 435, -280} /* UA,CG,G,U/T,G */
07773 , { -255, -905, -255, -585, -675} /* UA,CG,G,U/T,U/T */
07774 }
07775 }
07776 , { { { 215, 190, 215, 110, -660} /* UA,CG,U/T,E,E */
07777 , { 115, 90, 115, 10, -660} /* UA,CG,U/T,E,A */
07778 , { 140, 115, 140, 35, -680} /* UA,CG,U/T,E,C */
07779 , { 215, 190, 215, 110, -710} /* UA,CG,U/T,E,G */
07780 , { 85, 60, 85, -20, -735} /* UA,CG,U/T,E,U/T */
07781 }
07782 , { { 35, -5, 35, -85, -680} /* UA,CG,U/T,A,E */
07783 , { 20, -5, 20, -85, -680} /* UA,CG,U/T,A,A */
07784 , { -130, -155, -130, -235, -955} /* UA,CG,U/T,A,C */
07785 , { 35, -110, 35, -190, -910} /* UA,CG,U/T,A,G */
07786 , { -130, -155, -130, -235, -955} /* UA,CG,U/T,A,U/T */
07787 }
07788 , { { 115, 90, 115, 10, -710} /* UA,CG,U/T,C,E */
07789 , { 115, 90, 115, 10, -710} /* UA,CG,U/T,C,A */
07790 , { 110, 85, 110, 5, -710} /* UA,CG,U/T,C,C */
07791 , { 115, 90, 115, 10, -710} /* UA,CG,U/T,C,G */
07792 , { 85, 60, 85, -20, -735} /* UA,CG,U/T,C,U/T */
07793 }
07794 , { { 190, 165, 190, 85, -960} /* UA,CG,U/T,G,E */
07795 , { -110, -255, -110, -335, -1055} /* UA,CG,U/T,G,A */
07796 , { -135, -160, -135, -240, -960} /* UA,CG,U/T,G,C */
07797 , { 190, 165, 190, 85, -1260} /* UA,CG,U/T,G,G */
07798 , { -135, -160, -135, -240, -960} /* UA,CG,U/T,G,U/T */
07799 }
07800 , { { 100, 75, 100, -5, -720} /* UA,CG,U/T,U/T,E */
07801 , { 75, 50, 75, -30, -750} /* UA,CG,U/T,U/T,A */
07802 , { 100, 75, 100, -5, -720} /* UA,CG,U/T,U/T,C */
07803 , { 75, 50, 75, -30, -750} /* UA,CG,U/T,U/T,G */
07804 , { -320, -345, -320, -425, -1145} /* UA,CG,U/T,U/T,U/T */
07805 }
07806 }
07807 }
07808 , { { { 745, 495, 445, 650, 25} /* UA,GC,E,E,E */
07809 , { 745, 405, 355, 650, -65} /* UA,GC,E,E,A */
07810 , { 520, 180, 130, 425, -290} /* UA,GC,E,E,C */
07811 , { 565, 495, 445, 470, 25} /* UA,GC,E,E,G */
07812 , { 520, 195, 130, 425, -290} /* UA,GC,E,E,U/T */
07813 }
07814 , { { 480, 140, 90, 385, -330} /* UA,GC,E,A,E */
07815 , { 480, 140, 90, 385, -330} /* UA,GC,E,A,A */
07816 , { 255, -85, -135, 160, -555} /* UA,GC,E,A,C */
07817 , { -385, -455, -385, -675, -925} /* UA,GC,E,A,G */
07818 , { 255, -85, -135, 160, -555} /* UA,GC,E,A,U/T */
07819 }
07820 , { { 445, 100, 50, 350, -370} /* UA,GC,E,C,E */
07821 , { 445, 100, 50, 350, -370} /* UA,GC,E,C,A */
07822 , { 290, -50, -100, 195, -520} /* UA,GC,E,C,C */
07823 , { 445, 100, 50, 350, -370} /* UA,GC,E,C,G */
07824 , { 290, -50, -100, 195, -520} /* UA,GC,E,C,U/T */
07825 }
07826 , { { 310, 285, 235, 215, -185} /* UA,GC,E,G,E */
07827 , { -90, -160, -90, -380, -630} /* UA,GC,E,G,A */
07828 , { 310, -30, -80, 215, -500} /* UA,GC,E,G,C */
07829 , { 300, 285, 235, 65, -185} /* UA,GC,E,G,G */
07830 , { 310, -30, -80, 215, -500} /* UA,GC,E,G,U/T */
07831 }
07832 , { { 565, 220, 170, 470, -250} /* UA,GC,E,U/T,E */
07833 , { 565, 220, 170, 470, -250} /* UA,GC,E,U/T,A */

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07834 , { 255, -85, -135, 160, -555} /* UA,GC,E,U/T,C */
07835 , { 565, 220, 170, 470, -250} /* UA,GC,E,U/T,G */
07836 , { 210, 195, 30, -140, -390} /* UA,GC,E,U/T,U/T */
07837 }
07838 }
07839 , {{ { 510, 495, 445, -525, 25} /* UA,GC,A,E,E */
07840 , { 420, 405, 355, -525, -65} /* UA,GC,A,E,A */
07841 , { 195, 180, 130, -740, -290} /* UA,GC,A,E,C */
07842 , { 510, 495, 445, -710, 25} /* UA,GC,A,E,G */
07843 , { 210, 195, 130, -740, -290} /* UA,GC,A,E,U/T */
07844 }
07845 , {{ { 155, 140, 90, -790, -330} /* UA,GC,A,A,E */
07846 , { 155, 140, 90, -790, -330} /* UA,GC,A,A,A */
07847 , { -70, -85, -135, -1015, -555} /* UA,GC,A,A,C */
07848 , { -440, -455, -505, -1385, -925} /* UA,GC,A,A,G */
07849 , { -70, -85, -135, -1015, -555} /* UA,GC,A,A,U/T */
07850 }
07851 , {{ { 115, 100, 50, -830, -370} /* UA,GC,A,C,E */
07852 , { 115, 100, 50, -830, -370} /* UA,GC,A,C,A */
07853 , { -35, -50, -100, -860, -520} /* UA,GC,A,C,C */
07854 , { 115, 100, 50, -830, -370} /* UA,GC,A,C,G */
07855 , { -35, -50, -100, -860, -520} /* UA,GC,A,C,U/T */
07856 }
07857 , {{ { 300, 285, 235, -960, -185} /* UA,GC,A,G,E */
07858 , { -145, -160, -210, -1095, -630} /* UA,GC,A,G,A */
07859 , { -15, -30, -80, -960, -500} /* UA,GC,A,G,C */
07860 , { 300, 285, 235, -1275, -185} /* UA,GC,A,G,G */
07861 , { -15, -30, -80, -960, -500} /* UA,GC,A,G,U/T */
07862 }
07863 , {{ { 235, 220, 170, -710, -250} /* UA,GC,A,U/T,E */
07864 , { 235, 220, 170, -710, -250} /* UA,GC,A,U/T,A */
07865 , { -70, -85, -135, -895, -555} /* UA,GC,A,U/T,C */
07866 , { 235, 220, 170, -710, -250} /* UA,GC,A,U/T,G */
07867 , { 210, 195, 30, -855, -390} /* UA,GC,A,U/T,U/T */
07868 }
07869 }
07870 , {{ { 445, 355, 445, 275, -195} /* UA,GC,C,E,E */
07871 , { 355, 265, 355, 185, -285} /* UA,GC,C,E,A */
07872 , { 130, 40, 130, -40, -510} /* UA,GC,C,E,C */
07873 , { 445, 355, 445, 275, -195} /* UA,GC,C,E,G */
07874 , { 130, 40, 130, -40, -510} /* UA,GC,C,E,U/T */
07875 }
07876 , {{ { 90, 0, 90, -80, -550} /* UA,GC,C,A,E */
07877 , { 90, 0, 90, -80, -550} /* UA,GC,C,A,A */
07878 , { -135, -225, -135, -305, -775} /* UA,GC,C,A,C */
07879 , { -385, -595, -385, -675, -1025} /* UA,GC,C,A,G */
07880 , { -135, -225, -135, -305, -775} /* UA,GC,C,A,U/T */
07881 }
07882 , {{ { 50, -40, 50, -120, -585} /* UA,GC,C,C,E */
07883 , { 50, -40, 50, -120, -585} /* UA,GC,C,C,A */
07884 , { -100, -190, -100, -270, -740} /* UA,GC,C,C,C */
07885 , { 50, -40, 50, -120, -585} /* UA,GC,C,C,G */
07886 , { -100, -190, -100, -270, -740} /* UA,GC,C,C,U/T */
07887 }
07888 , {{ { 235, 145, 235, 65, -405} /* UA,GC,C,G,E */
07889 , { -90, -300, -90, -380, -730} /* UA,GC,C,G,A */
07890 , { -80, -170, -80, -250, -720} /* UA,GC,C,G,C */
07891 , { 235, 145, 235, 65, -405} /* UA,GC,C,G,G */
07892 , { -80, -170, -80, -250, -720} /* UA,GC,C,G,U/T */
07893 }
07894 , {{ { 170, 80, 170, 0, -465} /* UA,GC,C,U/T,E */
07895 , { 170, 80, 170, 0, -465} /* UA,GC,C,U/T,A */
07896 , { -135, -225, -135, -305, -775} /* UA,GC,C,U/T,C */
07897 , { 170, 80, 170, 0, -465} /* UA,GC,C,U/T,G */
07898 , { 30, -60, 30, -140, -610} /* UA,GC,C,U/T,U/T */
07899 }
07900 }
07901 , {{ { 745, -295, 445, 650, 25} /* UA,GC,G,E,E */
07902 , { 745, -295, 355, 650, -65} /* UA,GC,G,E,A */
07903 , { 520, -510, 130, 425, -290} /* UA,GC,G,E,C */
07904 , { 565, -480, 445, 470, 25} /* UA,GC,G,E,G */
07905 , { 520, -510, 130, 425, -290} /* UA,GC,G,E,U/T */
07906 }
07907 , {{ { 480, -560, 90, 385, -330} /* UA,GC,G,A,E */
07908 , { 480, -560, 90, 385, -330} /* UA,GC,G,A,A */
07909 , { 255, -785, -135, 160, -555} /* UA,GC,G,A,C */
07910 , { -505, -1155, -505, -835, -925} /* UA,GC,G,A,G */
07911 , { 255, -785, -135, 160, -555} /* UA,GC,G,A,U/T */
07912 }
07913 , {{ { 445, -600, 50, 350, -370} /* UA,GC,G,C,E */
07914 , { 445, -600, 50, 350, -370} /* UA,GC,G,C,A */
07915 , { 290, -630, -100, 195, -520} /* UA,GC,G,C,C */
07916 , { 445, -600, 50, 350, -370} /* UA,GC,G,C,G */
07917 , { 290, -630, -100, 195, -520} /* UA,GC,G,C,U/T */
07918 }
07919 , {{ { 310, -730, 235, 215, -185} /* UA,GC,G,G,E */
07920 , { -210, -865, -210, -540, -630} /* UA,GC,G,G,A */
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07921 , { 310, -730, -80, 215, -500} /* UA,GC,G,G,C */
07922 , { 235, -1045, 235, -720, -185} /* UA,GC,G,G,G */
07923 , { 310, -730, -80, 215, -500} /* UA,GC,G,G,U/T */
07924 }
07925 , { { 565, -480, 170, 470, -250} /* UA,GC,G,U/T,E */
07926 , { 565, -480, 170, 470, -250} /* UA,GC,G,U/T,A */
07927 , { 255, -665, -135, 160, -555} /* UA,GC,G,U/T,C */
07928 , { 565, -480, 170, 470, -250} /* UA,GC,G,U/T,G */
07929 , { 30, -625, 30, -300, -390} /* UA,GC,G,U/T,U/T */
07930 }
07931 }
07932 , { { { 380, 355, 380, 275, -415} /* UA,GC,U/T,E,E */
07933 , { 290, 265, 290, 185, -415} /* UA,GC,U/T,E,A */
07934 , { 65, 40, 65, -40, -760} /* UA,GC,U/T,E,C */
07935 , { 380, 355, 380, 275, -715} /* UA,GC,U/T,E,G */
07936 , { 65, 40, 65, -40, -760} /* UA,GC,U/T,E,U/T */
07937 }
07938 , { { 25, 0, 25, -80, -680} /* UA,GC,U/T,A,E */
07939 , { 25, 0, 25, -80, -680} /* UA,GC,U/T,A,A */
07940 , { -200, -225, -200, -305, -1025} /* UA,GC,U/T,A,C */
07941 , { -450, -595, -450, -675, -1395} /* UA,GC,U/T,A,G */
07942 , { -200, -225, -200, -305, -1025} /* UA,GC,U/T,A,U/T */
07943 }
07944 , { { -15, -40, -15, -120, -835} /* UA,GC,U/T,C,E */
07945 , { -15, -40, -15, -120, -835} /* UA,GC,U/T,C,A */
07946 , { -165, -190, -165, -270, -990} /* UA,GC,U/T,C,C */
07947 , { -15, -40, -15, -120, -835} /* UA,GC,U/T,C,G */
07948 , { -165, -190, -165, -270, -990} /* UA,GC,U/T,C,U/T */
07949 }
07950 , { { 170, 145, 170, 65, -970} /* UA,GC,U/T,G,E */
07951 , { -155, -300, -155, -380, -1100} /* UA,GC,U/T,G,A */
07952 , { -145, -170, -145, -250, -970} /* UA,GC,U/T,G,C */
07953 , { 170, 145, 170, 65, -1280} /* UA,GC,U/T,G,G */
07954 , { -145, -170, -145, -250, -970} /* UA,GC,U/T,G,U/T */
07955 }
07956 , { { 105, 80, 105, 0, -715} /* UA,GC,U/T,U/T,E */
07957 , { 105, 80, 105, 0, -715} /* UA,GC,U/T,U/T,A */
07958 , { -200, -225, -200, -305, -1025} /* UA,GC,U/T,U/T,C */
07959 , { 105, 80, 105, 0, -715} /* UA,GC,U/T,U/T,G */
07960 , { -35, -60, -35, -140, -860} /* UA,GC,U/T,U/T,U/T */
07961 }
07962 }
07963 }
07964 , { { { 750, 735, 685, 515, 265} /* UA,GT,E,E,E */
07965 , { 450, 195, 265, 355, -275} /* UA,GT,E,E,A */
07966 , { 450, 110, 60, 355, -360} /* UA,GT,E,E,C */
07967 , { 750, 735, 685, 515, 265} /* UA,GT,E,E,G */
07968 , { 450, 230, 60, 355, -360} /* UA,GT,E,E,U/T */
07969 }
07970 , { { 185, -155, -95, 90, -625} /* UA,GT,E,A,E */
07971 , { 95, -245, -295, 0, -715} /* UA,GT,E,A,A */
07972 , { 185, -155, -205, 90, -625} /* UA,GT,E,A,C */
07973 , { -95, -165, -95, -385, -635} /* UA,GT,E,A,G */
07974 , { 185, -155, -205, 90, -625} /* UA,GT,E,A,U/T */
07975 }
07976 , { { 330, -10, -60, 235, -480} /* UA,GT,E,C,E */
07977 , { 330, -10, -60, 235, -480} /* UA,GT,E,C,A */
07978 , { 330, -10, -60, 235, -480} /* UA,GT,E,C,C */
07979 , { 330, -10, -60, 235, -480} /* UA,GT,E,C,G */
07980 , { 330, -10, -60, 235, -480} /* UA,GT,E,C,U/T */
07981 }
07982 , { { 540, 525, 475, 305, 55} /* UA,GT,E,G,E */
07983 , { 55, -15, 55, -235, -485} /* UA,GT,E,G,A */
07984 , { 240, -100, -150, 145, -570} /* UA,GT,E,G,C */
07985 , { 540, 525, 475, 305, 55} /* UA,GT,E,G,G */
07986 , { 240, -100, -150, 145, -570} /* UA,GT,E,G,U/T */
07987 }
07988 , { { 450, 230, 60, 355, -360} /* UA,GT,E,U/T,E */
07989 , { 450, 110, 60, 355, -360} /* UA,GT,E,U/T,A */
07990 , { 450, 110, 60, 355, -360} /* UA,GT,E,U/T,C */
07991 , { 450, 110, 60, 355, -360} /* UA,GT,E,U/T,G */
07992 , { 245, 230, 60, -110, -360} /* UA,GT,E,U/T,U/T */
07993 }
07994 }
07995 , { { { 750, 735, 685, -705, 265} /* UA,GT,A,E,E */
07996 , { 210, 195, 145, -735, -275} /* UA,GT,A,E,A */
07997 , { 125, 110, 60, -705, -360} /* UA,GT,A,E,C */
07998 , { 750, 735, 685, -825, 265} /* UA,GT,A,E,G */
07999 , { 245, 230, 60, -705, -360} /* UA,GT,A,E,U/T */
08000 }
08001 , { { -140, -155, -205, -1090, -625} /* UA,GT,A,A,E */
08002 , { -230, -245, -295, -1180, -715} /* UA,GT,A,A,A */
08003 , { -140, -155, -205, -1090, -625} /* UA,GT,A,A,C */
08004 , { -150, -165, -215, -1095, -635} /* UA,GT,A,A,G */
08005 , { -140, -155, -205, -1090, -625} /* UA,GT,A,A,U/T */
08006 }
08007 , { { 5, -10, -60, -825, -480} /* UA,GT,A,C,E */

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08008 , { 5, -10, -60, -945, -480} /* UA,GT,A,C,A */
08009 , { 5, -10, -60, -825, -480} /* UA,GT,A,C,C */
08010 , { 5, -10, -60, -945, -480} /* UA,GT,A,C,G */
08011 , { 5, -10, -60, -825, -480} /* UA,GT,A,C,U/T */
08012 }
08013 , { { 540, 525, 475, -945, 55} /* UA,GT,A,G,E */
08014 , { 0, -15, -65, -945, -485} /* UA,GT,A,G,A */
08015 , { -85, -100, -150, -1035, -570} /* UA,GT,A,G,C */
08016 , { 540, 525, 475, -1035, 55} /* UA,GT,A,G,G */
08017 , { -85, -100, -150, -1035, -570} /* UA,GT,A,G,U/T */
08018 }
08019 , { { 245, 230, 60, -705, -360} /* UA,GT,A,U/T,E */
08020 , { 125, 110, 60, -825, -360} /* UA,GT,A,U/T,A */
08021 , { 125, 110, 60, -705, -360} /* UA,GT,A,U/T,C */
08022 , { 125, 110, 60, -825, -360} /* UA,GT,A,U/T,G */
08023 , { 245, 230, 60, -825, -360} /* UA,GT,A,U/T,U/T */
08024 }
08025 }
08026 , { { { 685, 595, 685, 515, 45} /* UA,GT,C,E,E */
08027 , { 265, 55, 265, -25, -375} /* UA,GT,C,E,A */
08028 , { 60, -30, 60, -110, -580} /* UA,GT,C,E,C */
08029 , { 685, 595, 685, 515, 45} /* UA,GT,C,E,G */
08030 , { 60, -30, 60, -110, -580} /* UA,GT,C,E,U/T */
08031 }
08032 , { { -95, -295, -95, -375, -735} /* UA,GT,C,A,E */
08033 , { -295, -385, -295, -465, -935} /* UA,GT,C,A,A */
08034 , { -205, -295, -205, -375, -845} /* UA,GT,C,A,C */
08035 , { -95, -305, -95, -385, -735} /* UA,GT,C,A,G */
08036 , { -205, -295, -205, -375, -845} /* UA,GT,C,A,U/T */
08037 }
08038 , { { -60, -150, -60, -230, -700} /* UA,GT,C,C,E */
08039 , { -60, -150, -60, -230, -700} /* UA,GT,C,C,A */
08040 , { -60, -150, -60, -230, -700} /* UA,GT,C,C,C */
08041 , { -60, -150, -60, -230, -700} /* UA,GT,C,C,G */
08042 , { -60, -150, -60, -230, -700} /* UA,GT,C,C,U/T */
08043 }
08044 , { { 475, 385, 475, 305, -165} /* UA,GT,C,G,E */
08045 , { 55, -155, 55, -235, -585} /* UA,GT,C,G,A */
08046 , { -150, -240, -150, -320, -790} /* UA,GT,C,G,C */
08047 , { 475, 385, 475, 305, -165} /* UA,GT,C,G,G */
08048 , { -150, -240, -150, -320, -790} /* UA,GT,C,G,U/T */
08049 }
08050 , { { 60, -30, 60, -110, -580} /* UA,GT,C,U/T,E */
08051 , { 60, -30, 60, -110, -580} /* UA,GT,C,U/T,A */
08052 , { 60, -30, 60, -110, -580} /* UA,GT,C,U/T,C */
08053 , { 60, -30, 60, -110, -580} /* UA,GT,C,U/T,G */
08054 , { 60, -30, 60, -110, -580} /* UA,GT,C,U/T,U/T */
08055 }
08056 }
08057 , { { { 685, -475, 685, 355, 265} /* UA,GT,G,E,E */
08058 , { 450, -505, 145, 355, -275} /* UA,GT,G,E,A */
08059 , { 450, -475, 60, 355, -360} /* UA,GT,G,E,C */
08060 , { 685, -595, 685, 355, 265} /* UA,GT,G,E,G */
08061 , { 450, -475, 60, 355, -360} /* UA,GT,G,E,U/T */
08062 }
08063 , { { 185, -860, -205, 90, -625} /* UA,GT,G,A,E */
08064 , { 95, -950, -295, 0, -715} /* UA,GT,G,A,A */
08065 , { 185, -860, -205, 90, -625} /* UA,GT,G,A,C */
08066 , { -215, -865, -215, -545, -635} /* UA,GT,G,A,G */
08067 , { 185, -860, -205, 90, -625} /* UA,GT,G,A,U/T */
08068 }
08069 , { { 330, -595, -60, 235, -480} /* UA,GT,G,C,E */
08070 , { 330, -715, -60, 235, -480} /* UA,GT,G,C,A */
08071 , { 330, -595, -60, 235, -480} /* UA,GT,G,C,C */
08072 , { 330, -715, -60, 235, -480} /* UA,GT,G,C,G */
08073 , { 330, -595, -60, 235, -480} /* UA,GT,G,C,U/T */
08074 }
08075 , { { 475, -715, 475, 145, 55} /* UA,GT,G,G,E */
08076 , { -65, -715, -65, -395, -485} /* UA,GT,G,G,A */
08077 , { 240, -805, -150, 145, -570} /* UA,GT,G,G,C */
08078 , { 475, -805, 475, -480, 55} /* UA,GT,G,G,G */
08079 , { 240, -805, -150, 145, -570} /* UA,GT,G,G,U/T */
08080 }
08081 , { { 450, -475, 60, 355, -360} /* UA,GT,G,U/T,E */
08082 , { 450, -595, 60, 355, -360} /* UA,GT,G,U/T,A */
08083 , { 450, -475, 60, 355, -360} /* UA,GT,G,U/T,C */
08084 , { 450, -595, 60, 355, -360} /* UA,GT,G,U/T,G */
08085 , { 60, -595, 60, -270, -360} /* UA,GT,G,U/T,U/T */
08086 }
08087 }
08088 , { { { 620, 595, 620, 515, -745} /* UA,GT,U/T,E,E */
08089 , { 200, 55, 200, -25, -745} /* UA,GT,U/T,E,A */
08090 , { -5, -30, -5, -110, -830} /* UA,GT,U/T,E,C */
08091 , { 620, 595, 620, 515, -830} /* UA,GT,U/T,E,G */
08092 , { -5, -30, -5, -110, -830} /* UA,GT,U/T,E,U/T */
08093 }
08094 , { { -160, -295, -160, -375, -1065} /* UA,GT,U/T,A,E */
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08095 , { -360, -385, -360, -465, -1065} /* UA,GT,U/T,A,A */
08096 , { -270, -295, -270, -375, -1095} /* UA,GT,U/T,A,C */
08097 , { -160, -305, -160, -385, -1105} /* UA,GT,U/T,A,G */
08098 , { -270, -295, -270, -375, -1095} /* UA,GT,U/T,A,U/T */
08099 }
08100 , {{ -125, -150, -125, -230, -950} /* UA,GT,U/T,C,E */
08101 , { -125, -150, -125, -230, -950} /* UA,GT,U/T,C,A */
08102 , { -125, -150, -125, -230, -950} /* UA,GT,U/T,C,C */
08103 , { -125, -150, -125, -230, -950} /* UA,GT,U/T,C,G */
08104 , { -125, -150, -125, -230, -950} /* UA,GT,U/T,C,U/T */
08105 }
08106 , {{ 410, 385, 410, 305, -955} /* UA,GT,U/T,G,E */
08107 , { -10, -155, -10, -235, -955} /* UA,GT,U/T,G,A */
08108 , { -215, -240, -215, -320, -1040} /* UA,GT,U/T,G,C */
08109 , { 410, 385, 410, 305, -1040} /* UA,GT,U/T,G,G */
08110 , { -215, -240, -215, -320, -1040} /* UA,GT,U/T,G,U/T */
08111 }
08112 , {{ -5, -30, -5, -110, -830} /* UA,GT,U/T,U/T,E */
08113 , { -5, -30, -5, -110, -830} /* UA,GT,U/T,U/T,A */
08114 , { -5, -30, -5, -110, -830} /* UA,GT,U/T,U/T,C */
08115 , { -5, -30, -5, -110, -830} /* UA,GT,U/T,U/T,G */
08116 , { -5, -30, -5, -110, -830} /* UA,GT,U/T,U/T,U/T */
08117 }
08118 }
08119 }
08120 , {{{ 1040, 1025, 975, 900, 555} /* UA,UG,E,E,E */
08121 , { 995, 655, 605, 900, 185} /* UA,UG,E,E,A */
08122 , { 740, 400, 350, 645, -70} /* UA,UG,E,E,C */
08123 , { 1040, 1025, 975, 805, 555} /* UA,UG,E,E,G */
08124 , { 740, 520, 350, 645, -70} /* UA,UG,E,E,U/T */
08125 }
08126 , {{ 980, 640, 590, 885, 170} /* UA,UG,E,A,E */
08127 , { 980, 640, 590, 885, 170} /* UA,UG,E,A,A */
08128 , { 725, 385, 335, 630, -85} /* UA,UG,E,A,C */
08129 , { 285, 215, 285, -5, -255} /* UA,UG,E,A,G */
08130 , { 725, 385, 335, 630, -85} /* UA,UG,E,A,U/T */
08131 }
08132 , {{ 740, 400, 350, 645, -70} /* UA,UG,E,C,E */
08133 , { 740, 400, 350, 645, -70} /* UA,UG,E,C,A */
08134 , { 740, 400, 350, 645, -70} /* UA,UG,E,C,C */
08135 , { 740, 400, 350, 645, -70} /* UA,UG,E,C,G */
08136 , { 740, 400, 350, 645, -70} /* UA,UG,E,C,U/T */
08137 }
08138 , {{ 945, 930, 880, 710, 460} /* UA,UG,E,G,E */
08139 , { 120, 50, 120, -170, -420} /* UA,UG,E,G,A */
08140 , { 645, 305, 255, 550, -165} /* UA,UG,E,G,C */
08141 , { 945, 930, 880, 710, 460} /* UA,UG,E,G,G */
08142 , { 645, 305, 255, 550, -165} /* UA,UG,E,G,U/T */
08143 }
08144 , {{ 320, 100, -70, 225, -490} /* UA,UG,E,U/T,E */
08145 , { 320, -20, -70, 225, -490} /* UA,UG,E,U/T,A */
08146 , { 320, -20, -70, 225, -490} /* UA,UG,E,U/T,C */
08147 , { 320, -20, -70, 225, -490} /* UA,UG,E,U/T,G */
08148 , { 115, 100, -70, -240, -490} /* UA,UG,E,U/T,U/T */
08149 }
08150 }
08151 , {{{ 1040, 1025, 975, -275, 555} /* UA,UG,A,E,E */
08152 , { 670, 655, 605, -275, 185} /* UA,UG,A,E,A */
08153 , { 415, 400, 350, -410, -70} /* UA,UG,A,E,C */
08154 , { 1040, 1025, 975, -530, 555} /* UA,UG,A,E,G */
08155 , { 535, 520, 350, -410, -70} /* UA,UG,A,E,U/T */
08156 }
08157 , {{ 655, 640, 590, -290, 170} /* UA,UG,A,A,E */
08158 , { 655, 640, 590, -290, 170} /* UA,UG,A,A,A */
08159 , { 400, 385, 335, -545, -85} /* UA,UG,A,A,C */
08160 , { 230, 215, 165, -715, -255} /* UA,UG,A,A,G */
08161 , { 400, 385, 335, -545, -85} /* UA,UG,A,A,U/T */
08162 }
08163 , {{ 415, 400, 350, -410, -70} /* UA,UG,A,C,E */
08164 , { 415, 400, 350, -530, -70} /* UA,UG,A,C,A */
08165 , { 415, 400, 350, -410, -70} /* UA,UG,A,C,C */
08166 , { 415, 400, 350, -530, -70} /* UA,UG,A,C,G */
08167 , { 415, 400, 350, -410, -70} /* UA,UG,A,C,U/T */
08168 }
08169 , {{ 945, 930, 880, -625, 460} /* UA,UG,A,G,E */
08170 , { 65, 50, 0, -880, -420} /* UA,UG,A,G,A */
08171 , { 320, 305, 255, -625, -165} /* UA,UG,A,G,C */
08172 , { 945, 930, 880, -625, 460} /* UA,UG,A,G,G */
08173 , { 320, 305, 255, -625, -165} /* UA,UG,A,G,U/T */
08174 }
08175 , {{ 115, 100, -70, -830, -490} /* UA,UG,A,U/T,E */
08176 , { -5, -20, -70, -950, -490} /* UA,UG,A,U/T,A */
08177 , { -5, -20, -70, -830, -490} /* UA,UG,A,U/T,C */
08178 , { -5, -20, -70, -950, -490} /* UA,UG,A,U/T,G */
08179 , { 115, 100, -70, -950, -490} /* UA,UG,A,U/T,U/T */
08180 }
08181 }

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08182 ,{{{ 975, 885, 975, 805, 335} /* UA,UG,C,E,E */
08183 ,{ 605, 515, 605, 435, -35} /* UA,UG,C,E,A */
08184 ,{ 350, 260, 350, 180, -290} /* UA,UG,C,E,C */
08185 ,{ 975, 885, 975, 805, 335} /* UA,UG,C,E,G */
08186 ,{ 350, 260, 350, 180, -290} /* UA,UG,C,E,U/T */
08187 }
08188 ,{{{ 590, 500, 590, 420, -50} /* UA,UG,C,A,E */
08189 ,{ 590, 500, 590, 420, -50} /* UA,UG,C,A,A */
08190 ,{ 335, 245, 335, 165, -305} /* UA,UG,C,A,C */
08191 ,{ 285, 75, 285, -5, -355} /* UA,UG,C,A,G */
08192 ,{ 335, 245, 335, 165, -305} /* UA,UG,C,A,U/T */
08193 }
08194 ,{{{ 350, 260, 350, 180, -290} /* UA,UG,C,C,E */
08195 ,{ 350, 260, 350, 180, -290} /* UA,UG,C,C,A */
08196 ,{ 350, 260, 350, 180, -290} /* UA,UG,C,C,C */
08197 ,{ 350, 260, 350, 180, -290} /* UA,UG,C,C,G */
08198 ,{ 350, 260, 350, 180, -290} /* UA,UG,C,C,U/T */
08199 }
08200 ,{{{ 880, 790, 880, 710, 240} /* UA,UG,C,G,E */
08201 ,{ 120, -90, 120, -170, -520} /* UA,UG,C,G,A */
08202 ,{ 255, 165, 255, 85, -385} /* UA,UG,C,G,C */
08203 ,{ 880, 790, 880, 710, 240} /* UA,UG,C,G,G */
08204 ,{ 255, 165, 255, 85, -385} /* UA,UG,C,G,U/T */
08205 }
08206 ,{{{ -70, -160, -70, -240, -710} /* UA,UG,C,U/T,E */
08207 ,{ -70, -160, -70, -240, -710} /* UA,UG,C,U/T,A */
08208 ,{ -70, -160, -70, -240, -710} /* UA,UG,C,U/T,C */
08209 ,{ -70, -160, -70, -240, -710} /* UA,UG,C,U/T,G */
08210 ,{ -70, -160, -70, -240, -710} /* UA,UG,C,U/T,U/T */
08211 }
08212 }
08213 ,{{{ 995, -45, 975, 900, 555} /* UA,UG,G,E,E */
08214 ,{ 995, -45, 605, 900, 185} /* UA,UG,G,E,A */
08215 ,{ 740, -180, 350, 645, -70} /* UA,UG,G,E,C */
08216 ,{ 975, -300, 975, 645, 555} /* UA,UG,G,E,G */
08217 ,{ 740, -180, 350, 645, -70} /* UA,UG,G,E,U/T */
08218 }
08219 ,{{{ 980, -60, 590, 885, 170} /* UA,UG,G,A,E */
08220 ,{ 980, -60, 590, 885, 170} /* UA,UG,G,A,A */
08221 ,{ 725, -315, 335, 630, -85} /* UA,UG,G,A,C */
08222 ,{ 165, -485, 165, -165, -255} /* UA,UG,G,A,G */
08223 ,{ 725, -315, 335, 630, -85} /* UA,UG,G,A,U/T */
08224 }
08225 ,{{{ 740, -180, 350, 645, -70} /* UA,UG,G,C,E */
08226 ,{ 740, -300, 350, 645, -70} /* UA,UG,G,C,A */
08227 ,{ 740, -180, 350, 645, -70} /* UA,UG,G,C,C */
08228 ,{ 740, -300, 350, 645, -70} /* UA,UG,G,C,G */
08229 ,{ 740, -180, 350, 645, -70} /* UA,UG,G,C,U/T */
08230 }
08231 ,{{{ 880, -395, 880, 550, 460} /* UA,UG,G,G,E */
08232 ,{ 0, -650, 0, -330, -420} /* UA,UG,G,G,A */
08233 ,{ 645, -395, 255, 550, -165} /* UA,UG,G,G,C */
08234 ,{ 880, -395, 880, -75, 460} /* UA,UG,G,G,G */
08235 ,{ 645, -395, 255, 550, -165} /* UA,UG,G,G,U/T */
08236 }
08237 ,{{{ 320, -600, -70, 225, -490} /* UA,UG,G,U/T,E */
08238 ,{ 320, -720, -70, 225, -490} /* UA,UG,G,U/T,A */
08239 ,{ 320, -600, -70, 225, -490} /* UA,UG,G,U/T,C */
08240 ,{ 320, -720, -70, 225, -490} /* UA,UG,G,U/T,G */
08241 ,{ -70, -720, -70, -400, -490} /* UA,UG,G,U/T,U/T */
08242 }
08243 }
08244 ,{{{ 910, 885, 910, 805, -165} /* UA,UG,U/T,E,E */
08245 ,{ 540, 515, 540, 435, -165} /* UA,UG,U/T,E,A */
08246 ,{ 285, 260, 285, 180, -540} /* UA,UG,U/T,E,C */
08247 ,{ 910, 885, 910, 805, -540} /* UA,UG,U/T,E,G */
08248 ,{ 285, 260, 285, 180, -540} /* UA,UG,U/T,E,U/T */
08249 }
08250 ,{{{ 525, 500, 525, 420, -180} /* UA,UG,U/T,A,E */
08251 ,{ 525, 500, 525, 420, -180} /* UA,UG,U/T,A,A */
08252 ,{ 270, 245, 270, 165, -555} /* UA,UG,U/T,A,C */
08253 ,{ 220, 75, 220, -5, -725} /* UA,UG,U/T,A,G */
08254 ,{ 270, 245, 270, 165, -555} /* UA,UG,U/T,A,U/T */
08255 }
08256 ,{{{ 285, 260, 285, 180, -540} /* UA,UG,U/T,C,E */
08257 ,{ 285, 260, 285, 180, -540} /* UA,UG,U/T,C,A */
08258 ,{ 285, 260, 285, 180, -540} /* UA,UG,U/T,C,C */
08259 ,{ 285, 260, 285, 180, -540} /* UA,UG,U/T,C,G */
08260 ,{ 285, 260, 285, 180, -540} /* UA,UG,U/T,C,U/T */
08261 }
08262 ,{{{ 815, 790, 815, 710, -635} /* UA,UG,U/T,G,E */
08263 ,{ 55, -90, 55, -170, -890} /* UA,UG,U/T,G,A */
08264 ,{ 190, 165, 190, 85, -635} /* UA,UG,U/T,G,C */
08265 ,{ 815, 790, 815, 710, -635} /* UA,UG,U/T,G,G */
08266 ,{ 190, 165, 190, 85, -635} /* UA,UG,U/T,G,U/T */
08267 }
08268 ,{{{ -135, -160, -135, -240, -960} /* UA,UG,U/T,U/T,E */
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08269      , { -135, -160, -135, -240, -960} /* UA,UG,U/T,U/T,A */
08270      , { -135, -160, -135, -240, -960} /* UA,UG,U/T,U/T,C */
08271      , { -135, -160, -135, -240, -960} /* UA,UG,U/T,U/T,G */
08272      , { -135, -160, -135, -240, -960} /* UA,UG,U/T,U/T,U/T */
08273      }
08274      }
08275      }
08276      , {{{ 1415, 1340, 1290, 1320, 870} /* UA,AT,E,E,E */
08277      , { 1415, 1075, 1025, 1320, 605} /* UA,AT,E,E,A */
08278      , { 1265, 925, 875, 1170, 455} /* UA,AT,E,E,C */
08279      , { 1355, 1340, 1290, 1175, 870} /* UA,AT,E,E,G */
08280      , { 1265, 925, 875, 1170, 455} /* UA,AT,E,E,U/T */
08281      }
08282      , { { 1355, 1015, 965, 1260, 545} /* UA,AT,E,A,E */
08283      , { 1355, 1015, 965, 1260, 545} /* UA,AT,E,A,A */
08284      , { 1200, 860, 810, 1105, 390} /* UA,AT,E,A,C */
08285      , { 395, 320, 395, 105, -145} /* UA,AT,E,A,G */
08286      , { 1200, 860, 810, 1105, 390} /* UA,AT,E,A,U/T */
08287      }
08288      , { { 1270, 930, 880, 1175, 460} /* UA,AT,E,C,E */
08289      , { 1270, 930, 880, 1175, 460} /* UA,AT,E,C,A */
08290      , { 1265, 925, 875, 1170, 455} /* UA,AT,E,C,C */
08291      , { 1270, 930, 880, 1175, 460} /* UA,AT,E,C,G */
08292      , { 1265, 925, 875, 1170, 455} /* UA,AT,E,C,U/T */
08293      }
08294      , {{{ 1330, 1315, 1265, 1140, 845} /* UA,AT,E,G,E */
08295      , { 515, 445, 515, 230, -25} /* UA,AT,E,G,A */
08296      , { 1235, 895, 845, 1140, 425} /* UA,AT,E,G,C */
08297      , { 1330, 1315, 1265, 1095, 845} /* UA,AT,E,G,G */
08298      , { 1235, 895, 845, 1140, 425} /* UA,AT,E,G,U/T */
08299      }
08300      , {{{ 1225, 885, 835, 1130, 415} /* UA,AT,E,U/T,E */
08301      , { 1225, 885, 835, 1130, 415} /* UA,AT,E,U/T,A */
08302      , { 1220, 880, 830, 1125, 410} /* UA,AT,E,U/T,C */
08303      , { 1225, 885, 835, 1130, 415} /* UA,AT,E,U/T,G */
08304      , { 525, 510, 345, 175, -75} /* UA,AT,E,U/T,U/T */
08305      }
08306      }
08307      , {{{ 1355, 1340, 1290, 145, 870} /* UA,AT,A,E,E */
08308      , { 1090, 1075, 1025, 145, 605} /* UA,AT,A,E,A */
08309      , { 940, 925, 875, 115, 455} /* UA,AT,A,E,C */
08310      , { 1355, 1340, 1290, 0, 870} /* UA,AT,A,E,G */
08311      , { 940, 925, 875, 115, 455} /* UA,AT,A,E,U/T */
08312      }
08313      , {{{ 1030, 1015, 965, 85, 545} /* UA,AT,A,A,E */
08314      , { 1030, 1015, 965, 85, 545} /* UA,AT,A,A,A */
08315      , { 875, 860, 810, -70, 390} /* UA,AT,A,A,C */
08316      , { 335, 320, 275, -610, -145} /* UA,AT,A,A,G */
08317      , { 875, 860, 810, -70, 390} /* UA,AT,A,A,U/T */
08318      }
08319      , {{{ 945, 930, 880, 115, 460} /* UA,AT,A,C,E */
08320      , { 945, 930, 880, 0, 460} /* UA,AT,A,C,A */
08321      , { 940, 925, 875, 115, 455} /* UA,AT,A,C,C */
08322      , { 945, 930, 880, 0, 460} /* UA,AT,A,C,G */
08323      , { 940, 925, 875, 115, 455} /* UA,AT,A,C,U/T */
08324      }
08325      , {{{ 1330, 1315, 1265, -35, 845} /* UA,AT,A,G,E */
08326      , { 460, 445, 395, -485, -25} /* UA,AT,A,G,A */
08327      , { 910, 895, 845, -35, 425} /* UA,AT,A,G,C */
08328      , { 1330, 1315, 1265, -240, 845} /* UA,AT,A,G,G */
08329      , { 910, 895, 845, -35, 425} /* UA,AT,A,G,U/T */
08330      }
08331      , {{{ 900, 885, 835, 70, 415} /* UA,AT,A,U/T,E */
08332      , { 900, 885, 835, -45, 415} /* UA,AT,A,U/T,A */
08333      , { 895, 880, 830, 70, 410} /* UA,AT,A,U/T,C */
08334      , { 900, 885, 835, -45, 415} /* UA,AT,A,U/T,G */
08335      , { 525, 510, 345, -540, -75} /* UA,AT,A,U/T,U/T */
08336      }
08337      }
08338      , {{{ 1290, 1200, 1290, 1120, 650} /* UA,AT,C,E,E */
08339      , { 1025, 935, 1025, 855, 385} /* UA,AT,C,E,A */
08340      , { 875, 785, 875, 705, 235} /* UA,AT,C,E,C */
08341      , { 1290, 1200, 1290, 1120, 650} /* UA,AT,C,E,G */
08342      , { 875, 785, 875, 705, 235} /* UA,AT,C,E,U/T */
08343      }
08344      , {{{ 965, 875, 965, 795, 325} /* UA,AT,C,A,E */
08345      , { 965, 875, 965, 795, 325} /* UA,AT,C,A,A */
08346      , { 810, 720, 810, 640, 170} /* UA,AT,C,A,C */
08347      , { 395, 185, 395, 105, -245} /* UA,AT,C,A,G */
08348      , { 810, 720, 810, 640, 170} /* UA,AT,C,A,U/T */
08349      }
08350      , {{{ 880, 790, 880, 710, 240} /* UA,AT,C,C,E */
08351      , { 880, 790, 880, 710, 240} /* UA,AT,C,C,A */
08352      , { 875, 785, 875, 705, 235} /* UA,AT,C,C,C */
08353      , { 880, 790, 880, 710, 240} /* UA,AT,C,C,G */
08354      , { 875, 785, 875, 705, 235} /* UA,AT,C,C,U/T */
08355      }

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08356 ,{{ 1265, 1175, 1265, 1095, 625} /* UA,AT,C,G,E */
08357 ,{ 515, 310, 515, 230, -120} /* UA,AT,C,G,A */
08358 ,{ 845, 755, 845, 675, 205} /* UA,AT,C,G,C */
08359 ,{ 1265, 1175, 1265, 1095, 625} /* UA,AT,C,G,G */
08360 ,{ 845, 755, 845, 675, 205} /* UA,AT,C,G,U/T */
08361 }
08362 ,{{ 835, 745, 835, 665, 195} /* UA,AT,C,U/T,E */
08363 ,{ 835, 745, 835, 665, 195} /* UA,AT,C,U/T,A */
08364 ,{ 830, 740, 830, 660, 190} /* UA,AT,C,U/T,C */
08365 ,{ 835, 745, 835, 665, 195} /* UA,AT,C,U/T,G */
08366 ,{ 345, 255, 345, 175, -295} /* UA,AT,C,U/T,U/T */
08367 }
08368 }
08369 ,{{{ 1415, 375, 1290, 1320, 870} /* UA,AT,G,E,E */
08370 ,{ 1415, 375, 1025, 1320, 605} /* UA,AT,G,E,A */
08371 ,{ 1265, 345, 875, 1170, 455} /* UA,AT,G,E,C */
08372 ,{ 1290, 230, 1290, 1175, 870} /* UA,AT,G,E,G */
08373 ,{ 1265, 345, 875, 1170, 455} /* UA,AT,G,E,U/T */
08374 }
08375 ,{{ 1355, 315, 965, 1260, 545} /* UA,AT,G,A,E */
08376 ,{ 1355, 315, 965, 1260, 545} /* UA,AT,G,A,A */
08377 ,{ 1200, 160, 810, 1105, 390} /* UA,AT,G,A,C */
08378 ,{ 275, -380, 275, -55, -145} /* UA,AT,G,A,G */
08379 ,{ 1200, 160, 810, 1105, 390} /* UA,AT,G,A,U/T */
08380 }
08381 ,{{ 1270, 345, 880, 1175, 460} /* UA,AT,G,C,E */
08382 ,{ 1270, 230, 880, 1175, 460} /* UA,AT,G,C,A */
08383 ,{ 1265, 345, 875, 1170, 455} /* UA,AT,G,C,C */
08384 ,{ 1270, 230, 880, 1175, 460} /* UA,AT,G,C,G */
08385 ,{ 1265, 345, 875, 1170, 455} /* UA,AT,G,C,U/T */
08386 }
08387 ,{{ 1265, 195, 1265, 1140, 845} /* UA,AT,G,G,E */
08388 ,{ 395, -255, 395, 70, -25} /* UA,AT,G,G,A */
08389 ,{ 1235, 195, 845, 1140, 425} /* UA,AT,G,G,C */
08390 ,{ 1265, -10, 1265, 310, 845} /* UA,AT,G,G,G */
08391 ,{ 1235, 195, 845, 1140, 425} /* UA,AT,G,G,U/T */
08392 }
08393 ,{{{ 1225, 300, 835, 1130, 415} /* UA,AT,G,U/T,E */
08394 ,{ 1225, 185, 835, 1130, 415} /* UA,AT,G,U/T,A */
08395 ,{ 1220, 300, 830, 1125, 410} /* UA,AT,G,U/T,C */
08396 ,{ 1225, 185, 835, 1130, 415} /* UA,AT,G,U/T,G */
08397 ,{ 345, -310, 345, 15, -75} /* UA,AT,G,U/T,U/T */
08398 }
08399 }
08400 ,{{{ 1225, 1200, 1225, 1120, 255} /* UA,AT,U/T,E,E */
08401 ,{ 960, 935, 960, 855, 255} /* UA,AT,U/T,E,A */
08402 ,{ 810, 785, 810, 705, -15} /* UA,AT,U/T,E,C */
08403 ,{ 1225, 1200, 1225, 1120, -10} /* UA,AT,U/T,E,G */
08404 ,{ 810, 785, 810, 705, -15} /* UA,AT,U/T,E,U/T */
08405 }
08406 ,{{{ 900, 875, 900, 795, 195} /* UA,AT,U/T,A,E */
08407 ,{ 900, 875, 900, 795, 195} /* UA,AT,U/T,A,A */
08408 ,{ 745, 720, 745, 640, -80} /* UA,AT,U/T,A,C */
08409 ,{ 330, 185, 330, 105, -615} /* UA,AT,U/T,A,G */
08410 ,{ 745, 720, 745, 640, -80} /* UA,AT,U/T,A,U/T */
08411 }
08412 ,{{{ 815, 790, 815, 710, -10} /* UA,AT,U/T,C,E */
08413 ,{ 815, 790, 815, 710, -10} /* UA,AT,U/T,C,A */
08414 ,{ 810, 785, 810, 705, -15} /* UA,AT,U/T,C,C */
08415 ,{ 815, 790, 815, 710, -10} /* UA,AT,U/T,C,G */
08416 ,{ 810, 785, 810, 705, -15} /* UA,AT,U/T,C,U/T */
08417 }
08418 ,{{{ 1200, 1175, 1200, 1095, -45} /* UA,AT,U/T,G,E */
08419 ,{ 455, 310, 455, 230, -490} /* UA,AT,U/T,G,A */
08420 ,{ 780, 755, 780, 675, -45} /* UA,AT,U/T,G,C */
08421 ,{ 1200, 1175, 1200, 1095, -245} /* UA,AT,U/T,G,G */
08422 ,{ 780, 755, 780, 675, -45} /* UA,AT,U/T,G,U/T */
08423 }
08424 ,{{{ 770, 745, 770, 665, -55} /* UA,AT,U/T,U/T,E */
08425 ,{ 770, 745, 770, 665, -55} /* UA,AT,U/T,U/T,A */
08426 ,{ 765, 740, 765, 660, -60} /* UA,AT,U/T,U/T,C */
08427 ,{ 770, 745, 770, 665, -55} /* UA,AT,U/T,U/T,G */
08428 ,{ 280, 255, 280, 175, -545} /* UA,AT,U/T,U/T,U/T */
08429 }
08430 }
08431 }
08432 ,{{{ 1320, 1305, 1255, 1225, 835} /* UA,UA,E,E,E */
08433 ,{ 1320, 980, 930, 1225, 510} /* UA,UA,E,E,A */
08434 ,{ 1255, 915, 865, 1160, 445} /* UA,UA,E,E,C */
08435 ,{ 1320, 1305, 1255, 1160, 835} /* UA,UA,E,E,G */
08436 ,{ 1190, 850, 800, 1095, 380} /* UA,UA,E,E,U/T */
08437 }
08438 ,{{{ 1305, 965, 915, 1210, 495} /* UA,UA,E,A,E */
08439 ,{ 1305, 965, 915, 1210, 495} /* UA,UA,E,A,A */
08440 ,{ 1165, 825, 775, 1070, 355} /* UA,UA,E,A,C */
08441 ,{ 335, 260, 335, 45, -205} /* UA,UA,E,A,G */
08442 ,{ 1165, 825, 775, 1070, 355} /* UA,UA,E,A,U/T */

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08443      }
08444      ,{{ 1255, 915, 865, 1160, 445} /* UA,UA,E,C,E */
08445      ,{ 1255, 915, 865, 1160, 445} /* UA,UA,E,C,A */
08446      ,{ 1255, 915, 865, 1160, 445} /* UA,UA,E,C,C */
08447      ,{ 1255, 915, 865, 1160, 445} /* UA,UA,E,C,G */
08448      ,{ 1190, 850, 800, 1095, 380} /* UA,UA,E,C,U/T */
08449      }
08450      ,{{ 1225, 1210, 1160, 990, 740} /* UA,UA,E,G,E */
08451      ,{ 105, 35, 105, -185, -435} /* UA,UA,E,G,A */
08452      ,{ 1085, 745, 695, 990, 275} /* UA,UA,E,G,C */
08453      ,{ 1225, 1210, 1160, 990, 740} /* UA,UA,E,G,G */
08454      ,{ 1085, 745, 695, 990, 275} /* UA,UA,E,G,U/T */
08455      }
08456      ,{{ 835, 495, 445, 740, 25} /* UA,UA,E,U/T,E */
08457      ,{ 835, 495, 445, 740, 25} /* UA,UA,E,U/T,A */
08458      ,{ 615, 275, 225, 520, -195} /* UA,UA,E,U/T,C */
08459      ,{ 835, 495, 445, 740, 25} /* UA,UA,E,U/T,G */
08460      ,{ 160, 145, -25, -195, -445} /* UA,UA,E,U/T,U/T */
08461      }
08462      }
08463      ,{{{ 1320, 1305, 1255, 105, 835} /* UA,UA,A,E,E */
08464      ,{ 995, 980, 930, 50, 510} /* UA,UA,A,E,A */
08465      ,{ 930, 915, 865, 105, 445} /* UA,UA,A,E,C */
08466      ,{ 1320, 1305, 1255, -15, 835} /* UA,UA,A,E,G */
08467      ,{ 865, 850, 800, 40, 380} /* UA,UA,A,E,U/T */
08468      }
08469      ,{{{ 980, 965, 915, 35, 495} /* UA,UA,A,A,E */
08470      ,{ 980, 965, 915, 35, 495} /* UA,UA,A,A,A */
08471      ,{ 840, 825, 775, -105, 355} /* UA,UA,A,A,C */
08472      ,{ 275, 260, 215, -670, -205} /* UA,UA,A,A,G */
08473      ,{ 840, 825, 775, -105, 355} /* UA,UA,A,A,U/T */
08474      }
08475      ,{{{ 930, 915, 865, 105, 445} /* UA,UA,A,C,E */
08476      ,{ 930, 915, 865, -15, 445} /* UA,UA,A,C,A */
08477      ,{ 930, 915, 865, 105, 445} /* UA,UA,A,C,C */
08478      ,{ 930, 915, 865, -15, 445} /* UA,UA,A,C,G */
08479      ,{ 865, 850, 800, 40, 380} /* UA,UA,A,C,U/T */
08480      }
08481      ,{{{ 1225, 1210, 1160, -185, 740} /* UA,UA,A,G,E */
08482      ,{ 50, 35, -15, -900, -435} /* UA,UA,A,G,A */
08483      ,{ 760, 745, 695, -185, 275} /* UA,UA,A,G,C */
08484      ,{ 1225, 1210, 1160, -345, 740} /* UA,UA,A,G,G */
08485      ,{ 760, 745, 695, -185, 275} /* UA,UA,A,G,U/T */
08486      }
08487      ,{{{ 510, 495, 445, -435, 25} /* UA,UA,A,U/T,E */
08488      ,{ 510, 495, 445, -435, 25} /* UA,UA,A,U/T,A */
08489      ,{ 290, 275, 225, -535, -195} /* UA,UA,A,U/T,C */
08490      ,{ 510, 495, 445, -435, 25} /* UA,UA,A,U/T,G */
08491      ,{ 160, 145, -25, -905, -445} /* UA,UA,A,U/T,U/T */
08492      }
08493      }
08494      ,{{{ 1255, 1165, 1255, 1085, 615} /* UA,UA,C,E,E */
08495      ,{ 930, 840, 930, 760, 290} /* UA,UA,C,E,A */
08496      ,{ 865, 775, 865, 695, 225} /* UA,UA,C,E,C */
08497      ,{ 1255, 1165, 1255, 1085, 615} /* UA,UA,C,E,G */
08498      ,{ 800, 710, 800, 630, 160} /* UA,UA,C,E,U/T */
08499      }
08500      ,{{{ 915, 825, 915, 745, 275} /* UA,UA,C,A,E */
08501      ,{ 915, 825, 915, 745, 275} /* UA,UA,C,A,A */
08502      ,{ 775, 685, 775, 605, 135} /* UA,UA,C,A,C */
08503      ,{ 335, 125, 335, 45, -305} /* UA,UA,C,A,G */
08504      ,{ 775, 685, 775, 605, 135} /* UA,UA,C,A,U/T */
08505      }
08506      ,{{{ 865, 775, 865, 695, 225} /* UA,UA,C,C,E */
08507      ,{ 865, 775, 865, 695, 225} /* UA,UA,C,C,A */
08508      ,{ 865, 775, 865, 695, 225} /* UA,UA,C,C,C */
08509      ,{ 865, 775, 865, 695, 225} /* UA,UA,C,C,G */
08510      ,{ 800, 710, 800, 630, 160} /* UA,UA,C,C,U/T */
08511      }
08512      ,{{{ 1160, 1070, 1160, 990, 520} /* UA,UA,C,G,E */
08513      ,{ 105, -105, 105, -185, -535} /* UA,UA,C,G,A */
08514      ,{ 695, 605, 695, 525, 55} /* UA,UA,C,G,C */
08515      ,{ 1160, 1070, 1160, 990, 520} /* UA,UA,C,G,G */
08516      ,{ 695, 605, 695, 525, 55} /* UA,UA,C,G,U/T */
08517      }
08518      ,{{{ 445, 355, 445, 275, -195} /* UA,UA,C,U/T,E */
08519      ,{ 445, 355, 445, 275, -195} /* UA,UA,C,U/T,A */
08520      ,{ 225, 135, 225, 55, -415} /* UA,UA,C,U/T,C */
08521      ,{ 445, 355, 445, 275, -195} /* UA,UA,C,U/T,G */
08522      ,{ -25, -115, -25, -195, -665} /* UA,UA,C,U/T,U/T */
08523      }
08524      }
08525      ,{{{ 1320, 335, 1255, 1225, 835} /* UA,UA,G,E,E */
08526      ,{ 1320, 275, 930, 1225, 510} /* UA,UA,G,E,A */
08527      ,{ 1255, 335, 865, 1160, 445} /* UA,UA,G,E,C */
08528      ,{ 1255, 215, 1255, 1160, 835} /* UA,UA,G,E,G */
08529      ,{ 1190, 270, 800, 1095, 380} /* UA,UA,G,E,U/T */

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08530      }
08531      ,{{ 1305, 260, 915, 1210, 495} /* UA,UA,G,A,E */
08532      ,{{ 1305, 260, 915, 1210, 495} /* UA,UA,G,A,A */
08533      ,{{ 1165, 125, 775, 1070, 355} /* UA,UA,G,A,C */
08534      ,{{ 215, -440, 215, -115, -205} /* UA,UA,G,A,G */
08535      ,{{ 1165, 125, 775, 1070, 355} /* UA,UA,G,A,U/T */
08536      }
08537      ,{{ 1255, 335, 865, 1160, 445} /* UA,UA,G,C,E */
08538      ,{{ 1255, 215, 865, 1160, 445} /* UA,UA,G,C,A */
08539      ,{{ 1255, 335, 865, 1160, 445} /* UA,UA,G,C,C */
08540      ,{{ 1255, 215, 865, 1160, 445} /* UA,UA,G,C,G */
08541      ,{{ 1190, 270, 800, 1095, 380} /* UA,UA,G,C,U/T */
08542      }
08543      ,{{ 1160, 45, 1160, 990, 740} /* UA,UA,G,G,E */
08544      ,{{ -15, -670, -15, -345, -435} /* UA,UA,G,G,A */
08545      ,{{ 1085, 45, 695, 990, 275} /* UA,UA,G,G,C */
08546      ,{{ 1160, -115, 1160, 205, 740} /* UA,UA,G,G,G */
08547      ,{{ 1085, 45, 695, 990, 275} /* UA,UA,G,G,U/T */
08548      }
08549      ,{{ 835, -205, 445, 740, 25} /* UA,UA,G,U/T,E */
08550      ,{{ 835, -205, 445, 740, 25} /* UA,UA,G,U/T,A */
08551      ,{{ 615, -305, 225, 520, -195} /* UA,UA,G,U/T,C */
08552      ,{{ 835, -205, 445, 740, 25} /* UA,UA,G,U/T,G */
08553      ,{{ -25, -675, -25, -355, -445} /* UA,UA,G,U/T,U/T */
08554      }
08555      }
08556      ,{{{ 1190, 1165, 1190, 1085, 160} /* UA,UA,U/T,E,E */
08557      ,{{ 865, 840, 865, 760, 160} /* UA,UA,U/T,E,A */
08558      ,{{ 800, 775, 800, 695, -25} /* UA,UA,U/T,E,C */
08559      ,{{ 1190, 1165, 1190, 1085, -25} /* UA,UA,U/T,E,G */
08560      ,{{ 735, 710, 735, 630, -90} /* UA,UA,U/T,E,U/T */
08561      }
08562      ,{{{ 850, 825, 850, 745, 145} /* UA,UA,U/T,A,E */
08563      ,{{ 850, 825, 850, 745, 145} /* UA,UA,U/T,A,A */
08564      ,{{ 710, 685, 710, 605, -115} /* UA,UA,U/T,A,C */
08565      ,{{ 270, 125, 270, 45, -675} /* UA,UA,U/T,A,G */
08566      ,{{ 710, 685, 710, 605, -115} /* UA,UA,U/T,A,U/T */
08567      }
08568      ,{{{ 800, 775, 800, 695, -25} /* UA,UA,U/T,C,E */
08569      ,{{ 800, 775, 800, 695, -25} /* UA,UA,U/T,C,A */
08570      ,{{ 800, 775, 800, 695, -25} /* UA,UA,U/T,C,C */
08571      ,{{ 800, 775, 800, 695, -25} /* UA,UA,U/T,C,G */
08572      ,{{ 735, 710, 735, 630, -90} /* UA,UA,U/T,C,U/T */
08573      }
08574      ,{{{ 1095, 1070, 1095, 990, -195} /* UA,UA,U/T,G,E */
08575      ,{{ 40, -105, 40, -185, -905} /* UA,UA,U/T,G,A */
08576      ,{{ 630, 605, 630, 525, -195} /* UA,UA,U/T,G,C */
08577      ,{{ 1095, 1070, 1095, 990, -355} /* UA,UA,U/T,G,G */
08578      ,{{ 630, 605, 630, 525, -195} /* UA,UA,U/T,G,U/T */
08579      }
08580      ,{{{ 380, 355, 380, 275, -445} /* UA,UA,U/T,U/T,E */
08581      ,{{ 380, 355, 380, 275, -445} /* UA,UA,U/T,U/T,A */
08582      ,{{ 160, 135, 160, 55, -665} /* UA,UA,U/T,U/T,C */
08583      ,{{ 380, 355, 380, 275, -445} /* UA,UA,U/T,U/T,G */
08584      ,{{ -90, -115, -90, -195, -915} /* UA,UA,U/T,U/T,U/T */
08585      }
08586      }
08587      }
08588      ,{{{ 1450, 1435, 1385, 1355, 965} /* UA,NN,E,E,E */
08589      ,{{ 1450, 1110, 1060, 1355, 640} /* UA,NN,E,E,A */
08590      ,{{ 1385, 1045, 995, 1290, 575} /* UA,NN,E,E,C */
08591      ,{{ 1450, 1435, 1385, 1290, 965} /* UA,NN,E,E,G */
08592      ,{{ 1320, 980, 930, 1225, 510} /* UA,NN,E,E,U/T */
08593      }
08594      ,{{{ 1390, 1050, 1000, 1295, 580} /* UA,NN,E,A,E */
08595      ,{{ 1390, 1050, 1000, 1295, 580} /* UA,NN,E,A,A */
08596      ,{{ 1250, 910, 860, 1155, 440} /* UA,NN,E,A,C */
08597      ,{{ 530, 460, 530, 240, -10} /* UA,NN,E,A,G */
08598      ,{{ 1250, 910, 860, 1155, 440} /* UA,NN,E,A,U/T */
08599      }
08600      ,{{{ 1385, 1045, 995, 1290, 575} /* UA,NN,E,C,E */
08601      ,{{ 1385, 1045, 995, 1290, 575} /* UA,NN,E,C,A */
08602      ,{{ 1385, 1045, 995, 1290, 575} /* UA,NN,E,C,C */
08603      ,{{ 1385, 1045, 995, 1290, 575} /* UA,NN,E,C,G */
08604      ,{{ 1320, 980, 930, 1225, 510} /* UA,NN,E,C,U/T */
08605      }
08606      ,{{{ 1425, 1410, 1360, 1190, 940} /* UA,NN,E,G,E */
08607      ,{{ 515, 445, 515, 230, -25} /* UA,NN,E,G,A */
08608      ,{{ 1285, 945, 895, 1190, 475} /* UA,NN,E,G,C */
08609      ,{{ 1425, 1410, 1360, 1190, 940} /* UA,NN,E,G,G */
08610      ,{{ 1285, 945, 895, 1190, 475} /* UA,NN,E,G,U/T */
08611      }
08612      ,{{{ 1340, 1000, 950, 1245, 530} /* UA,NN,E,U/T,E */
08613      ,{{ 1340, 1000, 950, 1245, 530} /* UA,NN,E,U/T,A */
08614      ,{{ 1220, 880, 830, 1125, 410} /* UA,NN,E,U/T,C */
08615      ,{{ 1340, 1000, 950, 1245, 530} /* UA,NN,E,U/T,G */
08616      ,{{ 665, 650, 480, 310, 60} /* UA,NN,E,U/T,U/T */
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08617     }
08618     }
08619     ,{{ { 1450, 1435, 1385, 235, 965} /* UA,NN,A,E,E */
08620     , { 1125, 1110, 1060, 180, 640} /* UA,NN,A,E,A */
08621     , { 1060, 1045, 995, 235, 575} /* UA,NN,A,E,C */
08622     , { 1450, 1435, 1385, 115, 965} /* UA,NN,A,E,G */
08623     , { 995, 980, 930, 170, 510} /* UA,NN,A,E,U/T */
08624     }
08625     ,{{ { 1065, 1050, 1000, 120, 580} /* UA,NN,A,A,E */
08626     , { 1065, 1050, 1000, 120, 580} /* UA,NN,A,A,A */
08627     , { 925, 910, 860, -20, 440} /* UA,NN,A,A,C */
08628     , { 475, 460, 410, -470, -10} /* UA,NN,A,A,G */
08629     , { 925, 910, 860, -20, 440} /* UA,NN,A,A,U/T */
08630     }
08631     ,{{ { 1060, 1045, 995, 235, 575} /* UA,NN,A,C,E */
08632     , { 1060, 1045, 995, 115, 575} /* UA,NN,A,C,A */
08633     , { 1060, 1045, 995, 235, 575} /* UA,NN,A,C,C */
08634     , { 1060, 1045, 995, 115, 575} /* UA,NN,A,C,G */
08635     , { 995, 980, 930, 170, 510} /* UA,NN,A,C,U/T */
08636     }
08637     ,{{ { 1425, 1410, 1360, 15, 940} /* UA,NN,A,G,E */
08638     , { 460, 445, 395, -485, -25} /* UA,NN,A,G,A */
08639     , { 960, 945, 895, 15, 475} /* UA,NN,A,G,C */
08640     , { 1425, 1410, 1360, -145, 940} /* UA,NN,A,G,G */
08641     , { 960, 945, 895, 15, 475} /* UA,NN,A,G,U/T */
08642     }
08643     ,{{ { 1015, 1000, 950, 70, 530} /* UA,NN,A,U/T,E */
08644     , { 1015, 1000, 950, 70, 530} /* UA,NN,A,U/T,A */
08645     , { 895, 880, 830, 70, 410} /* UA,NN,A,U/T,C */
08646     , { 1015, 1000, 950, 70, 530} /* UA,NN,A,U/T,G */
08647     , { 665, 650, 480, -400, 60} /* UA,NN,A,U/T,U/T */
08648     }
08649     }
08650     ,{{ { 1385, 1295, 1385, 1215, 745} /* UA,NN,C,E,E */
08651     , { 1060, 970, 1060, 890, 420} /* UA,NN,C,E,A */
08652     , { 995, 905, 995, 825, 355} /* UA,NN,C,E,C */
08653     , { 1385, 1295, 1385, 1215, 745} /* UA,NN,C,E,G */
08654     , { 930, 840, 930, 760, 290} /* UA,NN,C,E,U/T */
08655     }
08656     ,{{ { 1000, 910, 1000, 830, 360} /* UA,NN,C,A,E */
08657     , { 1000, 910, 1000, 830, 360} /* UA,NN,C,A,A */
08658     , { 860, 770, 860, 690, 220} /* UA,NN,C,A,C */
08659     , { 530, 320, 530, 240, -110} /* UA,NN,C,A,G */
08660     , { 860, 770, 860, 690, 220} /* UA,NN,C,A,U/T */
08661     }
08662     ,{{ { 995, 905, 995, 825, 355} /* UA,NN,C,C,E */
08663     , { 995, 905, 995, 825, 355} /* UA,NN,C,C,A */
08664     , { 995, 905, 995, 825, 355} /* UA,NN,C,C,C */
08665     , { 995, 905, 995, 825, 355} /* UA,NN,C,C,G */
08666     , { 930, 840, 930, 760, 290} /* UA,NN,C,C,U/T */
08667     }
08668     ,{{ { 1360, 1270, 1360, 1190, 720} /* UA,NN,C,G,E */
08669     , { 515, 310, 515, 230, -120} /* UA,NN,C,G,A */
08670     , { 895, 805, 895, 725, 255} /* UA,NN,C,G,C */
08671     , { 1360, 1270, 1360, 1190, 720} /* UA,NN,C,G,G */
08672     , { 895, 805, 895, 725, 255} /* UA,NN,C,G,U/T */
08673     }
08674     ,{{ { 950, 860, 950, 780, 310} /* UA,NN,C,U/T,E */
08675     , { 950, 860, 950, 780, 310} /* UA,NN,C,U/T,A */
08676     , { 830, 740, 830, 660, 190} /* UA,NN,C,U/T,C */
08677     , { 950, 860, 950, 780, 310} /* UA,NN,C,U/T,G */
08678     , { 480, 390, 480, 310, -160} /* UA,NN,C,U/T,U/T */
08679     }
08680     }
08681     ,{{ { 1450, 465, 1385, 1355, 965} /* UA,NN,G,E,E */
08682     , { 1450, 405, 1060, 1355, 640} /* UA,NN,G,E,A */
08683     , { 1385, 465, 995, 1290, 575} /* UA,NN,G,E,C */
08684     , { 1385, 345, 1385, 1290, 965} /* UA,NN,G,E,G */
08685     , { 1320, 400, 930, 1225, 510} /* UA,NN,G,E,U/T */
08686     }
08687     ,{{ { 1390, 345, 1000, 1295, 580} /* UA,NN,G,A,E */
08688     , { 1390, 345, 1000, 1295, 580} /* UA,NN,G,A,A */
08689     , { 1250, 210, 860, 1155, 440} /* UA,NN,G,A,C */
08690     , { 410, -240, 410, 80, -10} /* UA,NN,G,A,G */
08691     , { 1250, 210, 860, 1155, 440} /* UA,NN,G,A,U/T */
08692     }
08693     ,{{ { 1385, 465, 995, 1290, 575} /* UA,NN,G,C,E */
08694     , { 1385, 345, 995, 1290, 575} /* UA,NN,G,C,A */
08695     , { 1385, 465, 995, 1290, 575} /* UA,NN,G,C,C */
08696     , { 1385, 345, 995, 1290, 575} /* UA,NN,G,C,G */
08697     , { 1320, 400, 930, 1225, 510} /* UA,NN,G,C,U/T */
08698     }
08699     ,{{ { 1360, 245, 1360, 1190, 940} /* UA,NN,G,G,E */
08700     , { 395, -255, 395, 70, -25} /* UA,NN,G,G,A */
08701     , { 1285, 245, 895, 1190, 475} /* UA,NN,G,G,C */
08702     , { 1360, 85, 1360, 405, 940} /* UA,NN,G,G,G */
08703     , { 1285, 245, 895, 1190, 475} /* UA,NN,G,G,U/T */

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08704    }
08705    ,{{    1340,    300,    950,    1245,    530} /* UA,NN,G,U/T,E */
08706    ,{{    1340,    300,    950,    1245,    530} /* UA,NN,G,U/T,A */
08707    ,{{    1220,    300,    830,    1125,    410} /* UA,NN,G,U/T,C */
08708    ,{{    1340,    300,    950,    1245,    530} /* UA,NN,G,U/T,G */
08709    ,{{    480,    -170,    480,    150,    60} /* UA,NN,G,U/T,U/T */
08710    }
08711    }
08712    ,{{{    1320,    1295,    1320,    1215,    290} /* UA,NN,U/T,E,E */
08713    ,{{    995,    970,    995,    890,    290} /* UA,NN,U/T,E,A */
08714    ,{{    930,    905,    930,    825,    105} /* UA,NN,U/T,E,C */
08715    ,{{    1320,    1295,    1320,    1215,    105} /* UA,NN,U/T,E,G */
08716    ,{{    865,    840,    865,    760,    40} /* UA,NN,U/T,E,U/T */
08717    }
08718    ,{{{    935,    910,    935,    830,    230} /* UA,NN,U/T,A,E */
08719    ,{{    935,    910,    935,    830,    230} /* UA,NN,U/T,A,A */
08720    ,{{    795,    770,    795,    690,    -30} /* UA,NN,U/T,A,C */
08721    ,{{    465,    320,    465,    240,    -480} /* UA,NN,U/T,A,G */
08722    ,{{    795,    770,    795,    690,    -30} /* UA,NN,U/T,A,U/T */
08723    }
08724    ,{{{    930,    905,    930,    825,    105} /* UA,NN,U/T,C,E */
08725    ,{{    930,    905,    930,    825,    105} /* UA,NN,U/T,C,A */
08726    ,{{    930,    905,    930,    825,    105} /* UA,NN,U/T,C,C */
08727    ,{{    930,    905,    930,    825,    105} /* UA,NN,U/T,C,G */
08728    ,{{    865,    840,    865,    760,    40} /* UA,NN,U/T,C,U/T */
08729    }
08730    ,{{{    1295,    1270,    1295,    1190,    5} /* UA,NN,U/T,G,E */
08731    ,{{    455,    310,    455,    230,    -490} /* UA,NN,U/T,G,A */
08732    ,{{    830,    805,    830,    725,    5} /* UA,NN,U/T,G,C */
08733    ,{{    1295,    1270,    1295,    1190,    -155} /* UA,NN,U/T,G,G */
08734    ,{{    830,    805,    830,    725,    5} /* UA,NN,U/T,G,U/T */
08735    }
08736    ,{{{    885,    860,    885,    780,    60} /* UA,NN,U/T,U/T,E */
08737    ,{{    885,    860,    885,    780,    60} /* UA,NN,U/T,U/T,A */
08738    ,{{    765,    740,    765,    660,    -60} /* UA,NN,U/T,U/T,C */
08739    ,{{    885,    860,    885,    780,    60} /* UA,NN,U/T,U/T,G */
08740    ,{{    415,    390,    415,    310,    -410} /* UA,NN,U/T,U/T,U/T */
08741    }
08742    }
08743    }
08744    }
08745    ,{{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,E,E */
08746    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,E,A */
08747    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,E,C */
08748    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,E,G */
08749    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,E,U/T */
08750    }
08751    ,{{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,A,E */
08752    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,A,A */
08753    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,A,C */
08754    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,A,G */
08755    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,A,U/T */
08756    }
08757    ,{{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,C,E */
08758    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,C,A */
08759    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,C,C */
08760    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,C,G */
08761    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,C,U/T */
08762    }
08763    ,{{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,G,E */
08764    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,G,A */
08765    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,G,C */
08766    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,G,G */
08767    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,G,U/T */
08768    }
08769    ,{{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,U/T,E */
08770    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,U/T,A */
08771    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,U/T,C */
08772    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,U/T,G */
08773    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,E,U/T,U/T */
08774    }
08775    }
08776    ,{{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,E,E */
08777    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,E,A */
08778    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,E,C */
08779    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,E,G */
08780    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,E,U/T */
08781    }
08782    ,{{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,A,E */
08783    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,A,A */
08784    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,A,C */
08785    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,A,G */
08786    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,A,U/T */
08787    }
08788    ,{{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,C,E */
08789    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,C,A */
08790    ,{{    INF,    INF,    INF,    INF,    INF} /* NN,NP,A,C,C */
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08791      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,C,G */
08792      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,C,U/T */
08793      }
08794      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,E */
08795      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,A */
08796      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,C */
08797      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,G */
08798      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,G,U/T */
08799      }
08800      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U/T,E */
08801      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U/T,A */
08802      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U/T,C */
08803      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U/T,G */
08804      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,A,U/T,U/T */
08805      }
08806      }
08807      , {{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,E */
08808      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,A */
08809      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,C */
08810      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,G */
08811      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,E,U/T */
08812      }
08813      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,E */
08814      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,A */
08815      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,C */
08816      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,G */
08817      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,A,U/T */
08818      }
08819      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,E */
08820      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,A */
08821      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,C */
08822      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,G */
08823      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,C,U/T */
08824      }
08825      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,E */
08826      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,A */
08827      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,C */
08828      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,G */
08829      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,G,U/T */
08830      }
08831      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U/T,E */
08832      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U/T,A */
08833      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U/T,C */
08834      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U/T,G */
08835      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,C,U/T,U/T */
08836      }
08837      }
08838      , {{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,E */
08839      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,A */
08840      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,C */
08841      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,G */
08842      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,E,U/T */
08843      }
08844      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,E */
08845      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,A */
08846      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,C */
08847      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,G */
08848      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,A,U/T */
08849      }
08850      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,E */
08851      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,A */
08852      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,C */
08853      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,G */
08854      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,C,U/T */
08855      }
08856      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,E */
08857      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,A */
08858      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,C */
08859      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,G */
08860      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,G,U/T */
08861      }
08862      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,E */
08863      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,A */
08864      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,C */
08865      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,G */
08866      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,G,U/T,U/T */
08867      }
08868      }
08869      , {{{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,E */
08870      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,A */
08871      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,C */
08872      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,G */
08873      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,E,U/T */
08874      }
08875      , {{      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,A,E */
08876      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,A,A */
08877      , {      INF,      INF,      INF,      INF,      INF} /* NN,NP,U/T,A,C */

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08878 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,A,G */
08879 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,A,U/T */
08880 }
08881 , { { INF, INF, INF, INF, INF} /* NN,NP,U/T,C,E */
08882 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,C,A */
08883 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,C,C */
08884 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,C,G */
08885 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,C,U/T */
08886 }
08887 , { { INF, INF, INF, INF, INF} /* NN,NP,U/T,G,E */
08888 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,G,A */
08889 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,G,C */
08890 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,G,G */
08891 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,G,U/T */
08892 }
08893 , { { INF, INF, INF, INF, INF} /* NN,NP,U/T,U/T,E */
08894 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,U/T,A */
08895 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,U/T,C */
08896 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,U/T,G */
08897 , { INF, INF, INF, INF, INF} /* NN,NP,U/T,U/T,U/T */
08898 }
08899 }
08900 }
08901 , { { { 725, 415, 410, 700, 365} /* NN,CG,E,E,E */
08902 , { 700, 315, 320, 675, 265} /* NN,CG,E,E,A */
08903 , { 725, 340, 335, 700, 290} /* NN,CG,E,E,C */
08904 , { 700, 415, 410, 675, 365} /* NN,CG,E,E,G */
08905 , { 675, 285, 280, 650, 235} /* NN,CG,E,E,U/T */
08906 }
08907 , { { 610, 220, 230, 585, 170} /* NN,CG,E,A,E */
08908 , { 610, 220, 215, 585, 170} /* NN,CG,E,A,A */
08909 , { 455, 65, 60, 430, 15} /* NN,CG,E,A,C */
08910 , { 230, 115, 230, 10, 70} /* NN,CG,E,A,G */
08911 , { 455, 65, 60, 430, 15} /* NN,CG,E,A,U/T */
08912 }
08913 , { { 700, 315, 310, 675, 265} /* NN,CG,E,C,E */
08914 , { 700, 315, 310, 675, 265} /* NN,CG,E,C,A */
08915 , { 695, 310, 305, 670, 260} /* NN,CG,E,C,C */
08916 , { 700, 315, 310, 675, 265} /* NN,CG,E,C,G */
08917 , { 675, 285, 280, 650, 235} /* NN,CG,E,C,U/T */
08918 }
08919 , { { 450, 390, 385, 425, 340} /* NN,CG,E,G,E */
08920 , { 295, -35, 295, -135, -80} /* NN,CG,E,G,A */
08921 , { 450, 60, 55, 425, 10} /* NN,CG,E,G,C */
08922 , { 450, 390, 385, 285, 340} /* NN,CG,E,G,G */
08923 , { 450, 60, 55, 425, 10} /* NN,CG,E,G,U/T */
08924 }
08925 , { { 685, 300, 295, 660, 250} /* NN,CG,E,U/T,E */
08926 , { 660, 275, 270, 635, 225} /* NN,CG,E,U/T,A */
08927 , { 685, 300, 295, 660, 250} /* NN,CG,E,U/T,C */
08928 , { 660, 275, 270, 635, 225} /* NN,CG,E,U/T,G */
08929 , { 60, 0, -125, -130, -170} /* NN,CG,E,U/T,U/T */
08930 }
08931 }
08932 , { { { 475, 415, 410, -140, 365} /* NN,CG,A,E,E */
08933 , { 375, 315, 310, -285, 265} /* NN,CG,A,E,A */
08934 , { 400, 340, 335, -140, 290} /* NN,CG,A,E,C */
08935 , { 475, 415, 410, -285, 365} /* NN,CG,A,E,G */
08936 , { 345, 285, 280, -195, 235} /* NN,CG,A,E,U/T */
08937 }
08938 , { { 280, 220, 215, -380, 170} /* NN,CG,A,A,E */
08939 , { 280, 220, 215, -380, 170} /* NN,CG,A,A,A */
08940 , { 125, 65, 60, -530, 15} /* NN,CG,A,A,C */
08941 , { 175, 115, 110, -485, 65} /* NN,CG,A,A,G */
08942 , { 125, 65, 60, -535, 15} /* NN,CG,A,A,U/T */
08943 }
08944 , { { 375, 315, 310, -170, 265} /* NN,CG,A,C,E */
08945 , { 375, 315, 310, -285, 265} /* NN,CG,A,C,A */
08946 , { 370, 310, 305, -170, 260} /* NN,CG,A,C,C */
08947 , { 375, 315, 310, -285, 265} /* NN,CG,A,C,G */
08948 , { 345, 285, 280, -195, 235} /* NN,CG,A,C,U/T */
08949 }
08950 , { { 450, 390, 385, -540, 340} /* NN,CG,A,G,E */
08951 , { 30, -35, 30, -635, -80} /* NN,CG,A,G,A */
08952 , { 120, 60, 55, -540, 10} /* NN,CG,A,G,C */
08953 , { 450, 390, 385, -540, 340} /* NN,CG,A,G,G */
08954 , { 120, 60, 55, -540, 10} /* NN,CG,A,G,U/T */
08955 }
08956 , { { 360, 300, 295, -180, 250} /* NN,CG,A,U/T,E */
08957 , { 335, 275, 270, -325, 225} /* NN,CG,A,U/T,A */
08958 , { 360, 300, 295, -180, 250} /* NN,CG,A,U/T,C */
08959 , { 335, 275, 270, -325, 225} /* NN,CG,A,U/T,G */
08960 , { 60, 0, -125, -665, -170} /* NN,CG,A,U/T,U/T */
08961 }
08962 }
08963 , { { { 410, 275, 410, 310, 245} /* NN,CG,C,E,E */
08964 , { 320, 175, 320, 210, 145} /* NN,CG,C,E,A */
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08965 , { 335, 200, 335, 235, 175} /* NN,CG,C,E,C */
08966 , { 410, 275, 410, 310, 245} /* NN,CG,C,E,G */
08967 , { 280, 145, 280, 180, 120} /* NN,CG,C,E,U/T */
08968 }
08969 , { { 230, 80, 230, 115, 70} /* NN,CG,C,A,E */
08970 , { 215, 80, 215, 115, 55} /* NN,CG,C,A,A */
08971 , { 60, -70, 60, -35, -100} /* NN,CG,C,A,C */
08972 , { 230, -25, 230, 10, 70} /* NN,CG,C,A,G */
08973 , { 60, -70, 60, -35, -100} /* NN,CG,C,A,U/T */
08974 }
08975 , { { 310, 175, 310, 210, 145} /* NN,CG,C,C,E */
08976 , { 310, 175, 310, 210, 145} /* NN,CG,C,C,A */
08977 , { 305, 170, 305, 205, 145} /* NN,CG,C,C,C */
08978 , { 310, 175, 310, 210, 145} /* NN,CG,C,C,G */
08979 , { 280, 145, 280, 180, 120} /* NN,CG,C,C,U/T */
08980 }
08981 , { { 385, 250, 385, 285, 220} /* NN,CG,C,G,E */
08982 , { 295, -85, 295, -135, -80} /* NN,CG,C,G,A */
08983 , { 55, -75, 55, -40, -105} /* NN,CG,C,G,C */
08984 , { 385, 250, 385, 285, 220} /* NN,CG,C,G,G */
08985 , { 55, -75, 55, -40, -105} /* NN,CG,C,G,U/T */
08986 }
08987 , { { 295, 160, 295, 195, 135} /* NN,CG,C,U/T,E */
08988 , { 270, 135, 270, 170, 105} /* NN,CG,C,U/T,A */
08989 , { 295, 160, 295, 195, 135} /* NN,CG,C,U/T,C */
08990 , { 270, 135, 270, 170, 105} /* NN,CG,C,U/T,G */
08991 , { -125, -260, -125, -225, -285} /* NN,CG,C,U/T,U/T */
08992 }
08993 }
08994 , { { { 725, -125, 410, 700, 365} /* NN,CG,G,E,E */
08995 , { 700, -275, 310, 675, 265} /* NN,CG,G,E,A */
08996 , { 725, -125, 335, 700, 290} /* NN,CG,G,E,C */
08997 , { 700, -275, 410, 675, 365} /* NN,CG,G,E,G */
08998 , { 675, -180, 280, 650, 235} /* NN,CG,G,E,U/T */
08999 }
09000 , { { 610, -365, 215, 585, 170} /* NN,CG,G,A,E */
09001 , { 610, -365, 215, 585, 170} /* NN,CG,G,A,A */
09002 , { 455, -520, 60, 430, 15} /* NN,CG,G,A,C */
09003 , { 110, -475, 110, -150, 65} /* NN,CG,G,A,G */
09004 , { 455, -520, 60, 430, 15} /* NN,CG,G,A,U/T */
09005 }
09006 , { { 700, -155, 310, 675, 265} /* NN,CG,G,C,E */
09007 , { 700, -275, 310, 675, 265} /* NN,CG,G,C,A */
09008 , { 695, -155, 305, 670, 260} /* NN,CG,G,C,C */
09009 , { 700, -275, 310, 675, 265} /* NN,CG,G,C,G */
09010 , { 675, -180, 280, 650, 235} /* NN,CG,G,C,U/T */
09011 }
09012 , { { 450, -525, 385, 425, 340} /* NN,CG,G,G,E */
09013 , { -35, -620, -35, -295, -80} /* NN,CG,G,G,A */
09014 , { 450, -525, 55, 425, 10} /* NN,CG,G,G,C */
09015 , { 385, -825, 385, -500, 340} /* NN,CG,G,G,G */
09016 , { 450, -525, 55, 425, 10} /* NN,CG,G,G,U/T */
09017 }
09018 , { { 685, -165, 295, 660, 250} /* NN,CG,G,U/T,E */
09019 , { 660, -315, 270, 635, 225} /* NN,CG,G,U/T,A */
09020 , { 685, -165, 295, 660, 250} /* NN,CG,G,U/T,C */
09021 , { 660, -315, 270, 635, 225} /* NN,CG,G,U/T,G */
09022 , { -105, -710, -125, -130, -170} /* NN,CG,G,U/T,U/T */
09023 }
09024 }
09025 , { { { 345, 275, 345, 310, -40} /* NN,CG,U/T,E,E */
09026 , { 245, 175, 245, 210, -40} /* NN,CG,U/T,E,A */
09027 , { 270, 200, 270, 235, -175} /* NN,CG,U/T,E,C */
09028 , { 345, 275, 345, 310, -205} /* NN,CG,U/T,E,G */
09029 , { 215, 145, 215, 180, -230} /* NN,CG,U/T,E,U/T */
09030 }
09031 , { { 165, 80, 165, 115, -175} /* NN,CG,U/T,A,E */
09032 , { 150, 80, 150, 115, -175} /* NN,CG,U/T,A,A */
09033 , { 0, -70, 0, -35, -430} /* NN,CG,U/T,A,C */
09034 , { 165, -25, 165, 10, -405} /* NN,CG,U/T,A,G */
09035 , { 0, -70, 0, -35, -450} /* NN,CG,U/T,A,U/T */
09036 }
09037 , { { 245, 175, 245, 210, -40} /* NN,CG,U/T,C,E */
09038 , { 245, 175, 245, 210, -40} /* NN,CG,U/T,C,A */
09039 , { 240, 170, 240, 205, -205} /* NN,CG,U/T,C,C */
09040 , { 245, 175, 245, 210, -205} /* NN,CG,U/T,C,G */
09041 , { 215, 145, 215, 180, -230} /* NN,CG,U/T,C,U/T */
09042 }
09043 , { { 320, 250, 320, 285, -425} /* NN,CG,U/T,G,E */
09044 , { 20, -170, 20, -135, -425} /* NN,CG,U/T,G,A */
09045 , { -5, -75, -5, -40, -455} /* NN,CG,U/T,G,C */
09046 , { 320, 250, 320, 285, -755} /* NN,CG,U/T,G,G */
09047 , { -5, -75, -5, -40, -455} /* NN,CG,U/T,G,U/T */
09048 }
09049 , { { 230, 160, 230, 195, -215} /* NN,CG,U/T,U/T,E */
09050 , { 205, 135, 205, 170, -245} /* NN,CG,U/T,U/T,A */
09051 , { 230, 160, 230, 195, -215} /* NN,CG,U/T,U/T,C */

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09052      , {      205,      135,      205,      170,      -245} /* NN,CG,U/T,U/T,G */
09053      , {     -190,     -260,     -190,     -225,     -640} /* NN,CG,U/T,U/T,U/T */
09054      }
09055      }
09056      }
09057      ,{{{      875,      580,      575,      850,      530} /* NN,GC,E,E,E */
09058      , {      875,      490,      485,      850,      440} /* NN,GC,E,E,A */
09059      , {      650,      265,      260,      625,      215} /* NN,GC,E,E,C */
09060      , {      695,      580,      575,      670,      530} /* NN,GC,E,E,G */
09061      , {      650,      280,      260,      625,      215} /* NN,GC,E,E,U/T */
09062      }
09063      ,{{{      610,      225,      220,      585,      175} /* NN,GC,E,A,E */
09064      , {      610,      225,      220,      585,      175} /* NN,GC,E,A,A */
09065      , {      385,        0,        -5,      360,      -50} /* NN,GC,E,A,C */
09066      , {     -255,     -370,     -255,     -475,     -415} /* NN,GC,E,A,G */
09067      , {      385,        0,        -5,      360,      -50} /* NN,GC,E,A,U/T */
09068      }
09069      ,{{{      575,      185,      180,      550,      135} /* NN,GC,E,C,E */
09070      , {      575,      185,      180,      550,      135} /* NN,GC,E,C,A */
09071      , {      420,       35,       30,      395,      -15} /* NN,GC,E,C,C */
09072      , {      575,      185,      180,      550,      135} /* NN,GC,E,C,G */
09073      , {      420,       35,       30,      395,      -15} /* NN,GC,E,C,U/T */
09074      }
09075      ,{{{      440,      370,      365,      415,      320} /* NN,GC,E,G,E */
09076      , {       40,      -75,       40,     -180,     -125} /* NN,GC,E,G,A */
09077      , {      440,       55,       50,      415,       5} /* NN,GC,E,G,C */
09078      , {      430,      370,      365,      265,      320} /* NN,GC,E,G,G */
09079      , {      440,       55,       50,      415,       5} /* NN,GC,E,G,U/T */
09080      }
09081      ,{{{      695,      305,      300,      670,      255} /* NN,GC,E,U/T,E */
09082      , {      695,      305,      300,      670,      255} /* NN,GC,E,U/T,A */
09083      , {      385,        0,        -5,      360,      -50} /* NN,GC,E,U/T,C */
09084      , {      695,      305,      300,      670,      255} /* NN,GC,E,U/T,G */
09085      , {      340,      280,      170,       60,      115} /* NN,GC,E,U/T,U/T */
09086      }
09087      }
09088      ,{{{      640,      580,      575,      460,      530} /* NN,GC,A,E,E */
09089      , {      550,      490,      485,      195,      440} /* NN,GC,A,E,A */
09090      , {      485,      265,      260,      460,      215} /* NN,GC,A,E,C */
09091      , {      640,      580,      575,     -295,      530} /* NN,GC,A,E,G */
09092      , {      340,      280,      260,     -215,      215} /* NN,GC,A,E,U/T */
09093      }
09094      ,{{{      285,      225,      220,     -125,      175} /* NN,GC,A,A,E */
09095      , {      285,      225,      220,     -375,      175} /* NN,GC,A,A,A */
09096      , {       60,        0,        -5,     -125,      -50} /* NN,GC,A,A,C */
09097      , {     -310,     -370,     -375,     -970,     -420} /* NN,GC,A,A,G */
09098      , {       60,        0,        -5,     -600,      -50} /* NN,GC,A,A,U/T */
09099      }
09100      ,{{{      365,      185,      180,      340,      135} /* NN,GC,A,C,E */
09101      , {      245,      185,      180,       75,      135} /* NN,GC,A,C,A */
09102      , {      365,       35,       30,      340,      -15} /* NN,GC,A,C,C */
09103      , {      245,      185,      180,     -415,      135} /* NN,GC,A,C,G */
09104      , {       95,       35,       30,     -445,      -15} /* NN,GC,A,C,U/T */
09105      }
09106      ,{{{      430,      370,      365,     -545,      320} /* NN,GC,A,G,E */
09107      , {     -15,      -75,     -80,     -680,     -125} /* NN,GC,A,G,A */
09108      , {      115,       55,       50,     -545,       5} /* NN,GC,A,G,C */
09109      , {      430,      370,      365,     -860,      320} /* NN,GC,A,G,G */
09110      , {      115,       55,       50,     -545,       5} /* NN,GC,A,G,U/T */
09111      }
09112      ,{{{      365,      305,      300,     -215,      255} /* NN,GC,A,U/T,E */
09113      , {      365,      305,      300,     -295,      255} /* NN,GC,A,U/T,A */
09114      , {       60,        0,        -5,     -480,      -50} /* NN,GC,A,U/T,C */
09115      , {      365,      305,      300,     -295,      255} /* NN,GC,A,U/T,G */
09116      , {      340,      280,      170,     -215,      115} /* NN,GC,A,U/T,U/T */
09117      }
09118      }
09119      ,{{{      575,      440,      575,      475,      410} /* NN,GC,C,E,E */
09120      , {      485,      350,      485,      385,      320} /* NN,GC,C,E,A */
09121      , {      260,      125,      260,      160,      100} /* NN,GC,C,E,C */
09122      , {      575,      440,      575,      475,      410} /* NN,GC,C,E,G */
09123      , {      260,      125,      260,      160,      100} /* NN,GC,C,E,U/T */
09124      }
09125      ,{{{      220,       85,      220,      120,       55} /* NN,GC,C,A,E */
09126      , {      220,       85,      220,      120,       55} /* NN,GC,C,A,A */
09127      , {       -5,     -140,       -5,     -105,     -165} /* NN,GC,C,A,C */
09128      , {     -255,     -510,     -255,     -475,     -415} /* NN,GC,C,A,G */
09129      , {       -5,     -140,       -5,     -105,     -165} /* NN,GC,C,A,U/T */
09130      }
09131      ,{{{      180,       45,      180,       80,       20} /* NN,GC,C,C,E */
09132      , {      180,       45,      180,       80,       20} /* NN,GC,C,C,A */
09133      , {       30,     -105,       30,      -70,     -130} /* NN,GC,C,C,C */
09134      , {      180,       45,      180,       80,       20} /* NN,GC,C,C,G */
09135      , {       30,     -105,       30,      -70,     -130} /* NN,GC,C,C,U/T */
09136      }
09137      ,{{{      365,      230,      365,      265,      200} /* NN,GC,C,G,E */
09138      , {       40,     -215,       40,     -180,     -125} /* NN,GC,C,G,A */

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09139 , { 50, -85, 50, -50, -110} /* NN,GC,C,G,C */
09140 , { 365, 230, 365, 265, 200} /* NN,GC,C,G,G */
09141 , { 50, -85, 50, -50, -110} /* NN,GC,C,G,U/T */
09142 }
09143 , {{ 300, 165, 300, 200, 140} /* NN,GC,C,U/T,E */
09144 , { 300, 165, 300, 200, 140} /* NN,GC,C,U/T,A */
09145 , { -5, -140, -5, -105, -165} /* NN,GC,C,U/T,C */
09146 , { 300, 165, 300, 200, 140} /* NN,GC,C,U/T,G */
09147 , { 160, 25, 160, 60, -5} /* NN,GC,C,U/T,U/T */
09148 }
09149 }
09150 , {{{ 875, -20, 575, 850, 530} /* NN,GC,G,E,E */
09151 , { 875, -210, 485, 850, 440} /* NN,GC,G,E,A */
09152 , { 650, -20, 260, 625, 215} /* NN,GC,G,E,C */
09153 , { 695, -280, 575, 670, 530} /* NN,GC,G,E,G */
09154 , { 650, -315, 260, 625, 215} /* NN,GC,G,E,U/T */
09155 }
09156 , {{ 610, -285, 220, 585, 175} /* NN,GC,G,A,E */
09157 , { 610, -475, 220, 585, 175} /* NN,GC,G,A,A */
09158 , { 385, -285, -5, 360, -50} /* NN,GC,G,A,C */
09159 , { -375, -1070, -375, -635, -420} /* NN,GC,G,A,G */
09160 , { 385, -590, -5, 360, -50} /* NN,GC,G,A,U/T */
09161 }
09162 , {{ 575, -400, 180, 550, 135} /* NN,GC,G,C,E */
09163 , { 575, -515, 180, 550, 135} /* NN,GC,G,C,A */
09164 , { 420, -435, 30, 395, -15} /* NN,GC,G,C,C */
09165 , { 575, -400, 180, 550, 135} /* NN,GC,G,C,G */
09166 , { 420, -435, 30, 395, -15} /* NN,GC,G,C,U/T */
09167 }
09168 , {{{ 440, -535, 365, 415, 320} /* NN,GC,G,G,E */
09169 , { -80, -780, -80, -340, -125} /* NN,GC,G,G,A */
09170 , { 440, -535, 50, 415, 5} /* NN,GC,G,G,C */
09171 , { 365, -740, 365, -520, 320} /* NN,GC,G,G,G */
09172 , { 440, -535, 50, 415, 5} /* NN,GC,G,G,U/T */
09173 }
09174 , {{{ 695, -280, 300, 670, 255} /* NN,GC,G,U/T,E */
09175 , { 695, -280, 300, 670, 255} /* NN,GC,G,U/T,A */
09176 , { 385, -470, -5, 360, -50} /* NN,GC,G,U/T,C */
09177 , { 695, -280, 300, 670, 255} /* NN,GC,G,U/T,G */
09178 , { 160, -525, 160, -100, 115} /* NN,GC,G,U/T,U/T */
09179 }
09180 }
09181 , {{{ 510, 440, 510, 475, 90} /* NN,GC,U/T,E,E */
09182 , { 420, 350, 420, 385, 90} /* NN,GC,U/T,E,A */
09183 , { 195, 125, 195, 160, -255} /* NN,GC,U/T,E,C */
09184 , { 510, 440, 510, 475, 55} /* NN,GC,U/T,E,G */
09185 , { 195, 125, 195, 160, -255} /* NN,GC,U/T,E,U/T */
09186 }
09187 , {{ 155, 85, 155, 120, -175} /* NN,GC,U/T,A,E */
09188 , { 155, 85, 155, 120, -175} /* NN,GC,U/T,A,A */
09189 , { -70, -140, -70, -105, -520} /* NN,GC,U/T,A,C */
09190 , { -320, -510, -320, -475, -855} /* NN,GC,U/T,A,G */
09191 , { -70, -140, -70, -105, -520} /* NN,GC,U/T,A,U/T */
09192 }
09193 , {{ 115, 45, 115, 80, -150} /* NN,GC,U/T,C,E */
09194 , { 115, 45, 115, 80, -150} /* NN,GC,U/T,C,A */
09195 , { -35, -105, -35, -70, -485} /* NN,GC,U/T,C,C */
09196 , { 115, 45, 115, 80, -330} /* NN,GC,U/T,C,G */
09197 , { -35, -105, -35, -70, -485} /* NN,GC,U/T,C,U/T */
09198 }
09199 , {{ 300, 230, 300, 265, -155} /* NN,GC,U/T,G,E */
09200 , { -25, -215, -25, -180, -595} /* NN,GC,U/T,G,A */
09201 , { -15, -85, -15, -50, -465} /* NN,GC,U/T,G,C */
09202 , { 300, 230, 300, 265, -155} /* NN,GC,U/T,G,G */
09203 , { -15, -85, -15, -50, -465} /* NN,GC,U/T,G,U/T */
09204 }
09205 , {{{ 235, 165, 235, 200, -210} /* NN,GC,U/T,U/T,E */
09206 , { 235, 165, 235, 200, -210} /* NN,GC,U/T,U/T,A */
09207 , { -70, -140, -70, -105, -520} /* NN,GC,U/T,U/T,C */
09208 , { 235, 165, 235, 200, -210} /* NN,GC,U/T,U/T,G */
09209 , { 95, 25, 95, 60, -355} /* NN,GC,U/T,U/T,U/T */
09210 }
09211 }
09212 }
09213 , {{{ 880, 820, 815, 715, 770} /* NN,GT,E,E,E */
09214 , { 580, 300, 395, 555, 235} /* NN,GT,E,E,A */
09215 , { 580, 195, 190, 555, 145} /* NN,GT,E,E,C */
09216 , { 880, 820, 815, 715, 770} /* NN,GT,E,E,G */
09217 , { 580, 315, 190, 555, 145} /* NN,GT,E,E,U/T */
09218 }
09219 , {{{ 315, 15, 35, 290, -120} /* NN,GT,E,A,E */
09220 , { 225, 15, -165, 200, -210} /* NN,GT,E,A,A */
09221 , { 315, -70, -75, 290, -120} /* NN,GT,E,A,C */
09222 , { 35, -80, 35, -185, -125} /* NN,GT,E,A,G */
09223 , { 315, -70, -75, 290, -120} /* NN,GT,E,A,U/T */
09224 }
09225 , {{{ 460, 75, 70, 435, 25} /* NN,GT,E,C,E */

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09226 , { 460, 75, 70, 435, 25} /* NN,GT,E,C,A */
09227 , { 460, 75, 70, 435, 25} /* NN,GT,E,C,C */
09228 , { 460, 75, 70, 435, 25} /* NN,GT,E,C,G */
09229 , { 460, 75, 70, 435, 25} /* NN,GT,E,C,U/T */
09230 }
09231 , { { 670, 610, 605, 505, 560} /* NN,GT,E,G,E */
09232 , { 185, 90, 185, -35, 25} /* NN,GT,E,G,A */
09233 , { 370, -15, -20, 345, -65} /* NN,GT,E,G,C */
09234 , { 670, 610, 605, 505, 560} /* NN,GT,E,G,G */
09235 , { 370, -15, -20, 345, -65} /* NN,GT,E,G,U/T */
09236 }
09237 , { { 580, 315, 190, 555, 145} /* NN,GT,E,U/T,E */
09238 , { 580, 195, 190, 555, 145} /* NN,GT,E,U/T,A */
09239 , { 580, 195, 190, 555, 145} /* NN,GT,E,U/T,C */
09240 , { 580, 195, 190, 555, 145} /* NN,GT,E,U/T,G */
09241 , { 375, 315, 190, 90, 145} /* NN,GT,E,U/T,U/T */
09242 }
09243 }
09244 , { { { 880, 820, 815, -290, 770} /* NN,GT,A,E,E */
09245 , { 360, 300, 275, -320, 230} /* NN,GT,A,E,A */
09246 , { 255, 195, 190, -290, 145} /* NN,GT,A,E,C */
09247 , { 880, 820, 815, -410, 770} /* NN,GT,A,E,G */
09248 , { 375, 315, 190, -290, 145} /* NN,GT,A,E,U/T */
09249 }
09250 , { { 75, 15, -75, -675, -120} /* NN,GT,A,A,E */
09251 , { 75, 15, -165, -765, -210} /* NN,GT,A,A,A */
09252 , { -10, -70, -75, -675, -120} /* NN,GT,A,A,C */
09253 , { -20, -80, -85, -680, -130} /* NN,GT,A,A,G */
09254 , { -10, -70, -75, -675, -120} /* NN,GT,A,A,U/T */
09255 }
09256 , { { 135, 75, 70, -410, 25} /* NN,GT,A,C,E */
09257 , { 135, 75, 70, -530, 25} /* NN,GT,A,C,A */
09258 , { 135, 75, 70, -410, 25} /* NN,GT,A,C,C */
09259 , { 135, 75, 70, -530, 25} /* NN,GT,A,C,G */
09260 , { 135, 75, 70, -410, 25} /* NN,GT,A,C,U/T */
09261 }
09262 , { { 670, 610, 605, -530, 560} /* NN,GT,A,G,E */
09263 , { 150, 90, 65, -530, 20} /* NN,GT,A,G,A */
09264 , { 45, -15, -20, -620, -65} /* NN,GT,A,G,C */
09265 , { 670, 610, 605, -620, 560} /* NN,GT,A,G,G */
09266 , { 45, -15, -20, -620, -65} /* NN,GT,A,G,U/T */
09267 }
09268 , { { 375, 315, 190, -290, 145} /* NN,GT,A,U/T,E */
09269 , { 255, 195, 190, -410, 145} /* NN,GT,A,U/T,A */
09270 , { 255, 195, 190, -290, 145} /* NN,GT,A,U/T,C */
09271 , { 255, 195, 190, -410, 145} /* NN,GT,A,U/T,G */
09272 , { 375, 315, 190, -410, 145} /* NN,GT,A,U/T,U/T */
09273 }
09274 }
09275 , { { { 815, 680, 815, 715, 650} /* NN,GT,C,E,E */
09276 , { 395, 140, 395, 175, 235} /* NN,GT,C,E,A */
09277 , { 190, 55, 190, 90, 25} /* NN,GT,C,E,C */
09278 , { 815, 680, 815, 715, 650} /* NN,GT,C,E,G */
09279 , { 190, 55, 190, 90, 25} /* NN,GT,C,E,U/T */
09280 }
09281 , { { 35, -210, 35, -175, -125} /* NN,GT,C,A,E */
09282 , { -165, -300, -165, -265, -330} /* NN,GT,C,A,A */
09283 , { -75, -210, -75, -175, -240} /* NN,GT,C,A,C */
09284 , { 35, -220, 35, -185, -125} /* NN,GT,C,A,G */
09285 , { -75, -210, -75, -175, -240} /* NN,GT,C,A,U/T */
09286 }
09287 , { { 70, -65, 70, -30, -95} /* NN,GT,C,C,E */
09288 , { 70, -65, 70, -30, -95} /* NN,GT,C,C,A */
09289 , { 70, -65, 70, -30, -95} /* NN,GT,C,C,C */
09290 , { 70, -65, 70, -30, -95} /* NN,GT,C,C,G */
09291 , { 70, -65, 70, -30, -95} /* NN,GT,C,C,U/T */
09292 }
09293 , { { 605, 470, 605, 505, 440} /* NN,GT,C,G,E */
09294 , { 185, -70, 185, -35, 25} /* NN,GT,C,G,A */
09295 , { -20, -155, -20, -120, -185} /* NN,GT,C,G,C */
09296 , { 605, 470, 605, 505, 440} /* NN,GT,C,G,G */
09297 , { -20, -155, -20, -120, -185} /* NN,GT,C,G,U/T */
09298 }
09299 , { { 190, 55, 190, 90, 25} /* NN,GT,C,U/T,E */
09300 , { 190, 55, 190, 90, 25} /* NN,GT,C,U/T,A */
09301 , { 190, 55, 190, 90, 25} /* NN,GT,C,U/T,C */
09302 , { 190, 55, 190, 90, 25} /* NN,GT,C,U/T,G */
09303 , { 190, 55, 190, 90, 25} /* NN,GT,C,U/T,U/T */
09304 }
09305 }
09306 , { { { 815, -275, 815, 555, 770} /* NN,GT,G,E,E */
09307 , { 580, -310, 275, 555, 230} /* NN,GT,G,E,A */
09308 , { 580, -275, 190, 555, 145} /* NN,GT,G,E,C */
09309 , { 815, -395, 815, 555, 770} /* NN,GT,G,E,G */
09310 , { 580, -275, 190, 555, 145} /* NN,GT,G,E,U/T */
09311 }
09312 , { { 315, -660, -75, 290, -120} /* NN,GT,G,A,E */
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09313      , {      225,      -750,      -165,      200,      -210} /* NN,GT,G,A,A */
09314      , {      315,      -660,      -75,      290,      -120} /* NN,GT,G,A,C */
09315      , {      -85,      -670,      -85,      -345,      -130} /* NN,GT,G,A,G */
09316      , {      315,      -660,      -75,      290,      -120} /* NN,GT,G,A,U/T */
09317      }
09318      , {{      460,      -395,      70,      435,      25} /* NN,GT,G,C,E */
09319      , {      460,      -515,      70,      435,      25} /* NN,GT,G,C,A */
09320      , {      460,      -395,      70,      435,      25} /* NN,GT,G,C,C */
09321      , {      460,      -515,      70,      435,      25} /* NN,GT,G,C,G */
09322      , {      460,      -395,      70,      435,      25} /* NN,GT,G,C,U/T */
09323      }
09324      , {{      605,      -520,      605,      345,      560} /* NN,GT,G,G,E */
09325      , {      65,      -520,      65,      -195,      20} /* NN,GT,G,G,A */
09326      , {      370,      -605,      -20,      345,      -65} /* NN,GT,G,G,C */
09327      , {      605,      -605,      605,      -280,      560} /* NN,GT,G,G,G */
09328      , {      370,      -605,      -20,      345,      -65} /* NN,GT,G,G,U/T */
09329      }
09330      , {{      580,      -275,      190,      555,      145} /* NN,GT,G,U/T,E */
09331      , {      580,      -395,      190,      555,      145} /* NN,GT,G,U/T,A */
09332      , {      580,      -275,      190,      555,      145} /* NN,GT,G,U/T,C */
09333      , {      580,      -395,      190,      555,      145} /* NN,GT,G,U/T,G */
09334      , {      190,      -395,      190,      -70,      145} /* NN,GT,G,U/T,U/T */
09335      }
09336      }
09337      , {{{      750,      680,      750,      715,      -240} /* NN,GT,U/T,E,E */
09338      , {      330,      140,      330,      175,      -240} /* NN,GT,U/T,E,A */
09339      , {      125,      55,      125,      90,      -325} /* NN,GT,U/T,E,C */
09340      , {      750,      680,      750,      715,      -325} /* NN,GT,U/T,E,G */
09341      , {      125,      55,      125,      90,      -325} /* NN,GT,U/T,E,U/T */
09342      }
09343      , {{      -30,      -210,      -30,      -175,      -560} /* NN,GT,U/T,A,E */
09344      , {      -230,      -300,      -230,      -265,      -560} /* NN,GT,U/T,A,A */
09345      , {      -140,      -210,      -140,      -175,      -590} /* NN,GT,U/T,A,C */
09346      , {      -30,      -220,      -30,      -185,      -600} /* NN,GT,U/T,A,G */
09347      , {      -140,      -210,      -140,      -175,      -590} /* NN,GT,U/T,A,U/T */
09348      }
09349      , {{      5,      -65,      5,      -30,      -445} /* NN,GT,U/T,C,E */
09350      , {      5,      -65,      5,      -30,      -445} /* NN,GT,U/T,C,A */
09351      , {      5,      -65,      5,      -30,      -445} /* NN,GT,U/T,C,C */
09352      , {      5,      -65,      5,      -30,      -445} /* NN,GT,U/T,C,G */
09353      , {      5,      -65,      5,      -30,      -445} /* NN,GT,U/T,C,U/T */
09354      }
09355      , {{      540,      470,      540,      505,      -450} /* NN,GT,U/T,G,E */
09356      , {      120,      -70,      120,      -35,      -450} /* NN,GT,U/T,G,A */
09357      , {      -85,      -155,      -85,      -120,      -535} /* NN,GT,U/T,G,C */
09358      , {      540,      470,      540,      505,      -535} /* NN,GT,U/T,G,G */
09359      , {      -85,      -155,      -85,      -120,      -535} /* NN,GT,U/T,G,U/T */
09360      }
09361      , {{      125,      55,      125,      90,      -325} /* NN,GT,U/T,U/T,E */
09362      , {      125,      55,      125,      90,      -325} /* NN,GT,U/T,U/T,A */
09363      , {      125,      55,      125,      90,      -325} /* NN,GT,U/T,U/T,C */
09364      , {      125,      55,      125,      90,      -325} /* NN,GT,U/T,U/T,G */
09365      , {      125,      55,      125,      90,      -325} /* NN,GT,U/T,U/T,U/T */
09366      }
09367      }
09368      }
09369      , {{{      1170,      1110,      1105,      1100,      1060} /* NN,UG,E,E,E */
09370      , {      1125,      740,      735,      1100,      690} /* NN,UG,E,E,A */
09371      , {      870,      485,      480,      845,      435} /* NN,UG,E,E,C */
09372      , {      1170,      1110,      1105,      1005,      1060} /* NN,UG,E,E,G */
09373      , {      870,      605,      480,      845,      435} /* NN,UG,E,E,U/T */
09374      }
09375      , {{      1110,      725,      720,      1085,      675} /* NN,UG,E,A,E */
09376      , {      1110,      725,      720,      1085,      675} /* NN,UG,E,A,A */
09377      , {      855,      470,      465,      830,      420} /* NN,UG,E,A,C */
09378      , {      415,      300,      415,      195,      255} /* NN,UG,E,A,G */
09379      , {      855,      470,      465,      830,      420} /* NN,UG,E,A,U/T */
09380      }
09381      , {{      870,      485,      480,      845,      435} /* NN,UG,E,C,E */
09382      , {      870,      485,      480,      845,      435} /* NN,UG,E,C,A */
09383      , {      870,      485,      480,      845,      435} /* NN,UG,E,C,C */
09384      , {      870,      485,      480,      845,      435} /* NN,UG,E,C,G */
09385      , {      870,      485,      480,      845,      435} /* NN,UG,E,C,U/T */
09386      }
09387      , {{      1075,      1015,      1010,      910,      965} /* NN,UG,E,G,E */
09388      , {      250,      135,      250,      30,      90} /* NN,UG,E,G,A */
09389      , {      775,      390,      385,      750,      340} /* NN,UG,E,G,C */
09390      , {      1075,      1015,      1010,      910,      965} /* NN,UG,E,G,G */
09391      , {      775,      390,      385,      750,      340} /* NN,UG,E,G,U/T */
09392      }
09393      , {{      450,      185,      60,      425,      15} /* NN,UG,E,U/T,E */
09394      , {      450,      65,      60,      425,      15} /* NN,UG,E,U/T,A */
09395      , {      450,      65,      60,      425,      15} /* NN,UG,E,U/T,C */
09396      , {      450,      65,      60,      425,      15} /* NN,UG,E,U/T,G */
09397      , {      245,      185,      60,      -40,      15} /* NN,UG,E,U/T,U/T */
09398      }
09399      }

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09400 ,{{{ 1170, 1110, 1105, 350, 1060} /* NN,UG,A,E,E */
09401 ,{ 800, 740, 735, 350, 690} /* NN,UG,A,E,A */
09402 ,{ 545, 485, 480, 5, 435} /* NN,UG,A,E,C */
09403 ,{ 1170, 1110, 1105, -115, 1060} /* NN,UG,A,E,G */
09404 ,{ 665, 605, 480, 5, 435} /* NN,UG,A,E,U/T */
09405 }
09406 ,{{{ 785, 725, 720, 335, 675} /* NN,UG,A,A,E */
09407 ,{ 785, 725, 720, 335, 675} /* NN,UG,A,A,A */
09408 ,{ 530, 470, 465, -130, 420} /* NN,UG,A,A,C */
09409 ,{ 360, 300, 295, -300, 250} /* NN,UG,A,A,G */
09410 ,{ 530, 470, 465, -130, 420} /* NN,UG,A,A,U/T */
09411 }
09412 ,{{{ 545, 485, 480, 5, 435} /* NN,UG,A,C,E */
09413 ,{ 545, 485, 480, -115, 435} /* NN,UG,A,C,A */
09414 ,{ 545, 485, 480, 5, 435} /* NN,UG,A,C,C */
09415 ,{ 545, 485, 480, -115, 435} /* NN,UG,A,C,G */
09416 ,{ 545, 485, 480, 5, 435} /* NN,UG,A,C,U/T */
09417 }
09418 ,{{{ 1075, 1015, 1010, -210, 965} /* NN,UG,A,G,E */
09419 ,{ 195, 135, 130, -465, 85} /* NN,UG,A,G,A */
09420 ,{ 450, 390, 385, -210, 340} /* NN,UG,A,G,C */
09421 ,{ 1075, 1015, 1010, -210, 965} /* NN,UG,A,G,G */
09422 ,{ 450, 390, 385, -210, 340} /* NN,UG,A,G,U/T */
09423 }
09424 ,{{{ 245, 185, 60, -415, 15} /* NN,UG,A,U/T,E */
09425 ,{ 125, 65, 60, -535, 15} /* NN,UG,A,U/T,A */
09426 ,{ 125, 65, 60, -415, 15} /* NN,UG,A,U/T,C */
09427 ,{ 125, 65, 60, -535, 15} /* NN,UG,A,U/T,G */
09428 ,{ 245, 185, 60, -535, 15} /* NN,UG,A,U/T,U/T */
09429 }
09430 }
09431 ,{{{ 1105, 970, 1105, 1005, 945} /* NN,UG,C,E,E */
09432 ,{ 735, 600, 735, 635, 570} /* NN,UG,C,E,A */
09433 ,{ 480, 345, 480, 380, 320} /* NN,UG,C,E,C */
09434 ,{ 1105, 970, 1105, 1005, 945} /* NN,UG,C,E,G */
09435 ,{ 480, 345, 480, 380, 320} /* NN,UG,C,E,U/T */
09436 }
09437 ,{{{ 720, 585, 720, 620, 555} /* NN,UG,C,A,E */
09438 ,{ 720, 585, 720, 620, 555} /* NN,UG,C,A,A */
09439 ,{ 465, 330, 465, 365, 305} /* NN,UG,C,A,C */
09440 ,{ 415, 160, 415, 195, 255} /* NN,UG,C,A,G */
09441 ,{ 465, 330, 465, 365, 305} /* NN,UG,C,A,U/T */
09442 }
09443 ,{{{ 480, 345, 480, 380, 320} /* NN,UG,C,C,E */
09444 ,{ 480, 345, 480, 380, 320} /* NN,UG,C,C,A */
09445 ,{ 480, 345, 480, 380, 320} /* NN,UG,C,C,C */
09446 ,{ 480, 345, 480, 380, 320} /* NN,UG,C,C,G */
09447 ,{ 480, 345, 480, 380, 320} /* NN,UG,C,C,U/T */
09448 }
09449 ,{{{ 1010, 875, 1010, 910, 850} /* NN,UG,C,G,E */
09450 ,{ 250, -5, 250, 30, 90} /* NN,UG,C,G,A */
09451 ,{ 385, 250, 385, 285, 225} /* NN,UG,C,G,C */
09452 ,{ 1010, 875, 1010, 910, 850} /* NN,UG,C,G,G */
09453 ,{ 385, 250, 385, 285, 225} /* NN,UG,C,G,U/T */
09454 }
09455 ,{{{ 60, -75, 60, -40, -100} /* NN,UG,C,U/T,E */
09456 ,{ 60, -75, 60, -40, -100} /* NN,UG,C,U/T,A */
09457 ,{ 60, -75, 60, -40, -100} /* NN,UG,C,U/T,C */
09458 ,{ 60, -75, 60, -40, -100} /* NN,UG,C,U/T,G */
09459 ,{ 60, -75, 60, -40, -100} /* NN,UG,C,U/T,U/T */
09460 }
09461 }
09462 ,{{{ 1125, 150, 1105, 1100, 1060} /* NN,UG,G,E,E */
09463 ,{ 1125, 150, 735, 1100, 690} /* NN,UG,G,E,A */
09464 ,{ 870, 15, 480, 845, 435} /* NN,UG,G,E,C */
09465 ,{ 1105, -105, 1105, 845, 1060} /* NN,UG,G,E,G */
09466 ,{ 870, 15, 480, 845, 435} /* NN,UG,G,E,U/T */
09467 }
09468 ,{{{ 1110, 135, 720, 1085, 675} /* NN,UG,G,A,E */
09469 ,{ 1110, 135, 720, 1085, 675} /* NN,UG,G,A,A */
09470 ,{ 855, -120, 465, 830, 420} /* NN,UG,G,A,C */
09471 ,{ 295, -290, 295, 35, 250} /* NN,UG,G,A,G */
09472 ,{ 855, -120, 465, 830, 420} /* NN,UG,G,A,U/T */
09473 }
09474 ,{{{ 870, 15, 480, 845, 435} /* NN,UG,G,C,E */
09475 ,{ 870, -105, 480, 845, 435} /* NN,UG,G,C,A */
09476 ,{ 870, 15, 480, 845, 435} /* NN,UG,G,C,C */
09477 ,{ 870, -105, 480, 845, 435} /* NN,UG,G,C,G */
09478 ,{ 870, 15, 480, 845, 435} /* NN,UG,G,C,U/T */
09479 }
09480 ,{{{ 1010, -200, 1010, 750, 965} /* NN,UG,G,G,E */
09481 ,{ 130, -455, 130, -130, 85} /* NN,UG,G,G,A */
09482 ,{ 775, -200, 385, 750, 340} /* NN,UG,G,G,C */
09483 ,{ 1010, -200, 1010, 125, 965} /* NN,UG,G,G,G */
09484 ,{ 775, -200, 385, 750, 340} /* NN,UG,G,G,U/T */
09485 }
09486 ,{{{ 450, -405, 60, 425, 15} /* NN,UG,G,U/T,E */
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09487      , {      450,    -525,     60,    425,    15} /* NN,UG,G,U/T,A */
09488      , {      450,    -405,     60,    425,    15} /* NN,UG,G,U/T,C */
09489      , {      450,    -525,     60,    425,    15} /* NN,UG,G,U/T,G */
09490      , {        60,    -525,     60,   -200,    15} /* NN,UG,G,U/T,U/T */
09491      }
09492    }
09493    ,{{{      1040,     970,    1040,    1005,    340} /* NN,UG,U/T,E,E */
09494      , {        670,     600,     670,     635,    340} /* NN,UG,U/T,E,A */
09495      , {        415,     345,     415,     380,   -35} /* NN,UG,U/T,E,C */
09496      , {      1040,     970,    1040,    1005,   -35} /* NN,UG,U/T,E,G */
09497      , {        415,     345,     415,     380,   -35} /* NN,UG,U/T,E,U/T */
09498    }
09499    ,{{{        655,     585,     655,     620,    325} /* NN,UG,U/T,A,E */
09500      , {        655,     585,     655,     620,    325} /* NN,UG,U/T,A,A */
09501      , {        400,     330,     400,     365,   -50} /* NN,UG,U/T,A,C */
09502      , {        350,     160,     350,     195,  -220} /* NN,UG,U/T,A,G */
09503      , {        400,     330,     400,     365,   -50} /* NN,UG,U/T,A,U/T */
09504    }
09505    ,{{{        415,     345,     415,     380,   -35} /* NN,UG,U/T,C,E */
09506      , {        415,     345,     415,     380,   -35} /* NN,UG,U/T,C,A */
09507      , {        415,     345,     415,     380,   -35} /* NN,UG,U/T,C,C */
09508      , {        415,     345,     415,     380,   -35} /* NN,UG,U/T,C,G */
09509      , {        415,     345,     415,     380,   -35} /* NN,UG,U/T,C,U/T */
09510    }
09511    ,{{{        945,     875,     945,     910,  -130} /* NN,UG,U/T,G,E */
09512      , {        185,      -5,     185,      30,  -385} /* NN,UG,U/T,G,A */
09513      , {        320,     250,     320,     285,  -130} /* NN,UG,U/T,G,C */
09514      , {        945,     875,     945,     910,  -130} /* NN,UG,U/T,G,G */
09515      , {        320,     250,     320,     285,  -130} /* NN,UG,U/T,G,U/T */
09516    }
09517    ,{{{        -5,     -75,      -5,     -40,  -455} /* NN,UG,U/T,U/T,E */
09518      , {         -5,     -75,      -5,     -40,  -455} /* NN,UG,U/T,U/T,A */
09519      , {         -5,     -75,      -5,     -40,  -455} /* NN,UG,U/T,U/T,C */
09520      , {         -5,     -75,      -5,     -40,  -455} /* NN,UG,U/T,U/T,G */
09521      , {         -5,     -75,      -5,     -40,  -455} /* NN,UG,U/T,U/T,U/T */
09522    }
09523  }
09524 }
09525 ,{{{      1545,    1425,    1420,    1520,   1375} /* NN,AT,E,E,E */
09526      , {      1545,    1160,    1155,    1520,  1110} /* NN,AT,E,E,A */
09527      , {      1395,    1010,    1005,    1370,   960} /* NN,AT,E,E,C */
09528      , {      1485,    1425,    1420,    1375,  1375} /* NN,AT,E,E,G */
09529      , {      1395,    1010,    1005,    1370,   960} /* NN,AT,E,E,U/T */
09530    }
09531    ,{{{      1485,    1100,    1095,    1460,   1050} /* NN,AT,E,A,E */
09532      , {      1485,    1100,    1095,    1460,   1050} /* NN,AT,E,A,A */
09533      , {      1330,     945,     940,    1305,   895} /* NN,AT,E,A,C */
09534      , {        525,     405,     525,     305,   360} /* NN,AT,E,A,G */
09535      , {      1330,     945,     940,    1305,   895} /* NN,AT,E,A,U/T */
09536    }
09537    ,{{{      1400,    1015,    1010,    1375,   965} /* NN,AT,E,C,E */
09538      , {      1400,    1015,    1010,    1375,   965} /* NN,AT,E,C,A */
09539      , {      1395,    1010,    1005,    1370,   960} /* NN,AT,E,C,C */
09540      , {      1400,    1015,    1010,    1375,   965} /* NN,AT,E,C,G */
09541      , {      1395,    1010,    1005,    1370,   960} /* NN,AT,E,C,U/T */
09542    }
09543    ,{{{      1460,    1400,    1395,    1340,   1350} /* NN,AT,E,G,E */
09544      , {        645,     530,     645,     430,   485} /* NN,AT,E,G,A */
09545      , {      1365,     980,     975,    1340,   930} /* NN,AT,E,G,C */
09546      , {      1460,    1400,    1395,    1295,  1350} /* NN,AT,E,G,G */
09547      , {      1365,     980,     975,    1340,   930} /* NN,AT,E,G,U/T */
09548    }
09549    ,{{{      1355,     970,     965,    1330,   920} /* NN,AT,E,U/T,E */
09550      , {      1355,     970,     965,    1330,   920} /* NN,AT,E,U/T,A */
09551      , {      1350,     965,     960,    1325,   915} /* NN,AT,E,U/T,C */
09552      , {      1355,     970,     965,    1330,   920} /* NN,AT,E,U/T,G */
09553      , {        655,     595,     475,     375,   430} /* NN,AT,E,U/T,U/T */
09554    }
09555  }
09556 ,{{{      1485,    1425,    1420,     560,   1375} /* NN,AT,A,E,E */
09557      , {      1220,    1160,    1155,     560,  1110} /* NN,AT,A,E,A */
09558      , {      1070,    1010,    1005,     530,   960} /* NN,AT,A,E,C */
09559      , {      1485,    1425,    1420,     415,  1375} /* NN,AT,A,E,G */
09560      , {      1070,    1010,    1005,     530,   960} /* NN,AT,A,E,U/T */
09561    }
09562    ,{{{      1160,    1100,    1095,     500,  1050} /* NN,AT,A,A,E */
09563      , {      1160,    1100,    1095,     500,  1050} /* NN,AT,A,A,A */
09564      , {      1005,     945,     940,     345,   895} /* NN,AT,A,A,C */
09565      , {        465,     405,     405,    -195,   360} /* NN,AT,A,A,G */
09566      , {      1005,     945,     940,     345,   895} /* NN,AT,A,A,U/T */
09567    }
09568    ,{{{      1075,    1015,    1010,     530,   965} /* NN,AT,A,C,E */
09569      , {      1075,    1015,    1010,     415,   965} /* NN,AT,A,C,A */
09570      , {      1070,    1010,    1005,     530,   960} /* NN,AT,A,C,C */
09571      , {      1075,    1015,    1010,     415,   965} /* NN,AT,A,C,G */
09572      , {      1070,    1010,    1005,     530,   960} /* NN,AT,A,C,U/T */
09573    }

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09574 ,{{ 1460, 1400, 1395, 380, 1350} /* NN,AT,A,G,E */
09575 ,{ 590, 530, 525, -70, 480} /* NN,AT,A,G,A */
09576 ,{ 1040, 980, 975, 380, 930} /* NN,AT,A,G,C */
09577 ,{ 1460, 1400, 1395, 175, 1350} /* NN,AT,A,G,G */
09578 ,{ 1040, 980, 975, 380, 930} /* NN,AT,A,G,U/T */
09579 }
09580 ,{{ 1030, 970, 965, 485, 920} /* NN,AT,A,U/T,E */
09581 ,{ 1030, 970, 965, 370, 920} /* NN,AT,A,U/T,A */
09582 ,{ 1025, 965, 960, 485, 915} /* NN,AT,A,U/T,C */
09583 ,{ 1030, 970, 965, 370, 920} /* NN,AT,A,U/T,G */
09584 ,{ 655, 595, 475, -125, 430} /* NN,AT,A,U/T,U/T */
09585 }
09586 }
09587 ,{{{ 1420, 1285, 1420, 1320, 1260} /* NN,AT,C,E,E */
09588 ,{ 1155, 1020, 1155, 1055, 995} /* NN,AT,C,E,A */
09589 ,{ 1005, 870, 1005, 905, 845} /* NN,AT,C,E,C */
09590 ,{ 1420, 1285, 1420, 1320, 1260} /* NN,AT,C,E,G */
09591 ,{ 1005, 870, 1005, 905, 845} /* NN,AT,C,E,U/T */
09592 }
09593 ,{{ 1095, 960, 1095, 995, 935} /* NN,AT,C,A,E */
09594 ,{ 1095, 960, 1095, 995, 935} /* NN,AT,C,A,A */
09595 ,{ 940, 805, 940, 840, 780} /* NN,AT,C,A,C */
09596 ,{ 525, 270, 525, 305, 360} /* NN,AT,C,A,G */
09597 ,{ 940, 805, 940, 840, 780} /* NN,AT,C,A,U/T */
09598 }
09599 ,{{{ 1010, 875, 1010, 910, 845} /* NN,AT,C,C,E */
09600 ,{ 1010, 875, 1010, 910, 845} /* NN,AT,C,C,A */
09601 ,{ 1005, 870, 1005, 905, 845} /* NN,AT,C,C,C */
09602 ,{ 1010, 875, 1010, 910, 845} /* NN,AT,C,C,G */
09603 ,{ 1005, 870, 1005, 905, 845} /* NN,AT,C,C,U/T */
09604 }
09605 ,{{{ 1395, 1260, 1395, 1295, 1235} /* NN,AT,C,G,E */
09606 ,{ 645, 395, 645, 430, 485} /* NN,AT,C,G,A */
09607 ,{ 975, 840, 975, 875, 815} /* NN,AT,C,G,C */
09608 ,{ 1395, 1260, 1395, 1295, 1235} /* NN,AT,C,G,G */
09609 ,{ 975, 840, 975, 875, 815} /* NN,AT,C,G,U/T */
09610 }
09611 ,{{{ 965, 830, 965, 865, 800} /* NN,AT,C,U/T,E */
09612 ,{ 965, 830, 965, 865, 800} /* NN,AT,C,U/T,A */
09613 ,{ 960, 825, 960, 860, 800} /* NN,AT,C,U/T,C */
09614 ,{ 965, 830, 965, 865, 800} /* NN,AT,C,U/T,G */
09615 ,{ 475, 340, 475, 375, 310} /* NN,AT,C,U/T,U/T */
09616 }
09617 }
09618 ,{{{ 1545, 570, 1420, 1520, 1375} /* NN,AT,G,E,E */
09619 ,{ 1545, 570, 1155, 1520, 1110} /* NN,AT,G,E,A */
09620 ,{ 1395, 545, 1005, 1370, 960} /* NN,AT,G,E,C */
09621 ,{ 1420, 425, 1420, 1375, 1375} /* NN,AT,G,E,G */
09622 ,{ 1395, 545, 1005, 1370, 960} /* NN,AT,G,E,U/T */
09623 }
09624 ,{{{ 1485, 510, 1095, 1460, 1050} /* NN,AT,G,A,E */
09625 ,{ 1485, 510, 1095, 1460, 1050} /* NN,AT,G,A,A */
09626 ,{ 1330, 360, 940, 1305, 895} /* NN,AT,G,A,C */
09627 ,{ 405, -180, 405, 145, 360} /* NN,AT,G,A,G */
09628 ,{ 1330, 360, 940, 1305, 895} /* NN,AT,G,A,U/T */
09629 }
09630 ,{{{ 1400, 545, 1010, 1375, 965} /* NN,AT,G,C,E */
09631 ,{ 1400, 425, 1010, 1375, 965} /* NN,AT,G,C,A */
09632 ,{ 1395, 545, 1005, 1370, 960} /* NN,AT,G,C,C */
09633 ,{ 1400, 425, 1010, 1375, 965} /* NN,AT,G,C,G */
09634 ,{ 1395, 545, 1005, 1370, 960} /* NN,AT,G,C,U/T */
09635 }
09636 ,{{{ 1395, 395, 1395, 1340, 1350} /* NN,AT,G,G,E */
09637 ,{ 525, -55, 525, 270, 480} /* NN,AT,G,G,A */
09638 ,{ 1365, 395, 975, 1340, 930} /* NN,AT,G,G,C */
09639 ,{ 1395, 190, 1395, 510, 1350} /* NN,AT,G,G,G */
09640 ,{ 1365, 395, 975, 1340, 930} /* NN,AT,G,G,U/T */
09641 }
09642 ,{{{ 1355, 500, 965, 1330, 920} /* NN,AT,G,U/T,E */
09643 ,{ 1355, 380, 965, 1330, 920} /* NN,AT,G,U/T,A */
09644 ,{ 1350, 500, 960, 1325, 915} /* NN,AT,G,U/T,C */
09645 ,{ 1355, 380, 965, 1330, 920} /* NN,AT,G,U/T,G */
09646 ,{ 475, -110, 475, 215, 430} /* NN,AT,G,U/T,U/T */
09647 }
09648 }
09649 ,{{{ 1355, 1285, 1355, 1320, 760} /* NN,AT,U/T,E,E */
09650 ,{ 1090, 1020, 1090, 1055, 760} /* NN,AT,U/T,E,A */
09651 ,{ 940, 870, 940, 905, 490} /* NN,AT,U/T,E,C */
09652 ,{ 1355, 1285, 1355, 1320, 495} /* NN,AT,U/T,E,G */
09653 ,{ 940, 870, 940, 905, 490} /* NN,AT,U/T,E,U/T */
09654 }
09655 ,{{{ 1030, 960, 1030, 995, 700} /* NN,AT,U/T,A,E */
09656 ,{ 1030, 960, 1030, 995, 700} /* NN,AT,U/T,A,A */
09657 ,{ 875, 805, 875, 840, 425} /* NN,AT,U/T,A,C */
09658 ,{ 460, 270, 460, 305, -110} /* NN,AT,U/T,A,G */
09659 ,{ 875, 805, 875, 840, 425} /* NN,AT,U/T,A,U/T */
09660 }

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09661 ,{{ 945, 875, 945, 910, 495} /* NN,AT,U/T,C,E */
09662 ,{ 945, 875, 945, 910, 495} /* NN,AT,U/T,C,A */
09663 ,{ 940, 870, 940, 905, 490} /* NN,AT,U/T,C,C */
09664 ,{ 945, 875, 945, 910, 495} /* NN,AT,U/T,C,G */
09665 ,{ 940, 870, 940, 905, 490} /* NN,AT,U/T,C,U/T */
09666 }
09667 ,{{ 1330, 1260, 1330, 1295, 460} /* NN,AT,U/T,G,E */
09668 ,{ 585, 395, 585, 430, 15} /* NN,AT,U/T,G,A */
09669 ,{ 910, 840, 910, 875, 460} /* NN,AT,U/T,G,C */
09670 ,{ 1330, 1260, 1330, 1295, 260} /* NN,AT,U/T,G,G */
09671 ,{ 910, 840, 910, 875, 460} /* NN,AT,U/T,G,U/T */
09672 }
09673 ,{{ 900, 830, 900, 865, 450} /* NN,AT,U/T,U/T,E */
09674 ,{ 900, 830, 900, 865, 450} /* NN,AT,U/T,U/T,A */
09675 ,{ 895, 825, 895, 860, 445} /* NN,AT,U/T,U/T,C */
09676 ,{ 900, 830, 900, 865, 450} /* NN,AT,U/T,U/T,G */
09677 ,{ 410, 340, 410, 375, -40} /* NN,AT,U/T,U/T,U/T */
09678 }
09679 }
09680 }
09681 ,{{{ 1450, 1390, 1385, 1425, 1340} /* NN,UA,E,E,E */
09682 ,{ 1450, 1065, 1060, 1425, 1015} /* NN,UA,E,E,A */
09683 ,{ 1385, 1000, 995, 1360, 950} /* NN,UA,E,E,C */
09684 ,{ 1450, 1390, 1385, 1360, 1340} /* NN,UA,E,E,G */
09685 ,{ 1320, 935, 930, 1295, 885} /* NN,UA,E,E,U/T */
09686 }
09687 ,{{{ 1435, 1050, 1045, 1410, 1000} /* NN,UA,E,A,E */
09688 ,{ 1435, 1050, 1045, 1410, 1000} /* NN,UA,E,A,A */
09689 ,{ 1295, 910, 905, 1270, 860} /* NN,UA,E,A,C */
09690 ,{ 465, 345, 465, 245, 300} /* NN,UA,E,A,G */
09691 ,{ 1295, 910, 905, 1270, 860} /* NN,UA,E,A,U/T */
09692 }
09693 ,{{{ 1385, 1000, 995, 1360, 950} /* NN,UA,E,C,E */
09694 ,{ 1385, 1000, 995, 1360, 950} /* NN,UA,E,C,A */
09695 ,{ 1385, 1000, 995, 1360, 950} /* NN,UA,E,C,C */
09696 ,{ 1385, 1000, 995, 1360, 950} /* NN,UA,E,C,G */
09697 ,{ 1320, 935, 930, 1295, 885} /* NN,UA,E,C,U/T */
09698 }
09699 ,{{{ 1355, 1295, 1290, 1190, 1245} /* NN,UA,E,G,E */
09700 ,{ 235, 120, 235, 15, 70} /* NN,UA,E,G,A */
09701 ,{ 1215, 830, 825, 1190, 780} /* NN,UA,E,G,C */
09702 ,{ 1355, 1295, 1290, 1190, 1245} /* NN,UA,E,G,G */
09703 ,{ 1215, 830, 825, 1190, 780} /* NN,UA,E,G,U/T */
09704 }
09705 ,{{{ 965, 580, 575, 940, 530} /* NN,UA,E,U/T,E */
09706 ,{ 965, 580, 575, 940, 530} /* NN,UA,E,U/T,A */
09707 ,{ 745, 360, 355, 720, 310} /* NN,UA,E,U/T,C */
09708 ,{ 965, 580, 575, 940, 530} /* NN,UA,E,U/T,G */
09709 ,{ 290, 230, 105, 5, 60} /* NN,UA,E,U/T,U/T */
09710 }
09711 }
09712 ,{{{ 1450, 1390, 1385, 515, 1340} /* NN,UA,A,E,E */
09713 ,{ 1125, 1065, 1060, 460, 1015} /* NN,UA,A,E,A */
09714 ,{ 1060, 1000, 995, 515, 950} /* NN,UA,A,E,C */
09715 ,{ 1450, 1390, 1385, 395, 1340} /* NN,UA,A,E,G */
09716 ,{ 995, 935, 930, 455, 885} /* NN,UA,A,E,U/T */
09717 }
09718 ,{{{ 1110, 1050, 1045, 445, 1000} /* NN,UA,A,A,E */
09719 ,{ 1110, 1050, 1045, 445, 1000} /* NN,UA,A,A,A */
09720 ,{ 970, 910, 905, 310, 860} /* NN,UA,A,A,C */
09721 ,{ 405, 345, 345, -255, 300} /* NN,UA,A,A,G */
09722 ,{ 970, 910, 905, 310, 860} /* NN,UA,A,A,U/T */
09723 }
09724 ,{{{ 1060, 1000, 995, 515, 950} /* NN,UA,A,C,E */
09725 ,{ 1060, 1000, 995, 395, 950} /* NN,UA,A,C,A */
09726 ,{ 1060, 1000, 995, 515, 950} /* NN,UA,A,C,C */
09727 ,{ 1060, 1000, 995, 395, 950} /* NN,UA,A,C,G */
09728 ,{ 995, 935, 930, 455, 885} /* NN,UA,A,C,U/T */
09729 }
09730 ,{{{ 1355, 1295, 1290, 230, 1245} /* NN,UA,A,G,E */
09731 ,{ 180, 120, 115, -485, 70} /* NN,UA,A,G,A */
09732 ,{ 890, 830, 825, 230, 780} /* NN,UA,A,G,C */
09733 ,{ 1355, 1295, 1290, 70, 1245} /* NN,UA,A,G,G */
09734 ,{ 890, 830, 825, 230, 780} /* NN,UA,A,G,U/T */
09735 }
09736 ,{{{ 640, 580, 575, -25, 530} /* NN,UA,A,U/T,E */
09737 ,{ 640, 580, 575, -25, 530} /* NN,UA,A,U/T,A */
09738 ,{ 420, 360, 355, -120, 310} /* NN,UA,A,U/T,C */
09739 ,{ 640, 580, 575, -25, 530} /* NN,UA,A,U/T,G */
09740 ,{ 290, 230, 105, -490, 60} /* NN,UA,A,U/T,U/T */
09741 }
09742 }
09743 ,{{{ 1385, 1250, 1385, 1285, 1220} /* NN,UA,C,E,E */
09744 ,{ 1060, 925, 1060, 960, 895} /* NN,UA,C,E,A */
09745 ,{ 995, 860, 995, 895, 830} /* NN,UA,C,E,C */
09746 ,{ 1385, 1250, 1385, 1285, 1220} /* NN,UA,C,E,G */
09747 ,{ 930, 795, 930, 830, 765} /* NN,UA,C,E,U/T */

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09748      }
09749      ,{{ 1045, 910, 1045, 945, 880} /* NN,UA,C,A,E */
09750      ,{ 1045, 910, 1045, 945, 880} /* NN,UA,C,A,A */
09751      ,{ 905, 770, 905, 805, 740} /* NN,UA,C,A,C */
09752      ,{ 465, 210, 465, 245, 300} /* NN,UA,C,A,G */
09753      ,{ 905, 770, 905, 805, 740} /* NN,UA,C,A,U/T */
09754      }
09755      ,{{ 995, 860, 995, 895, 830} /* NN,UA,C,C,E */
09756      ,{ 995, 860, 995, 895, 830} /* NN,UA,C,C,A */
09757      ,{ 995, 860, 995, 895, 830} /* NN,UA,C,C,C */
09758      ,{ 995, 860, 995, 895, 830} /* NN,UA,C,C,G */
09759      ,{ 930, 795, 930, 830, 765} /* NN,UA,C,C,U/T */
09760      }
09761      ,{{ 1290, 1155, 1290, 1190, 1125} /* NN,UA,C,G,E */
09762      ,{ 235, -20, 235, 15, 70} /* NN,UA,C,G,A */
09763      ,{ 825, 690, 825, 725, 660} /* NN,UA,C,G,C */
09764      ,{ 1290, 1155, 1290, 1190, 1125} /* NN,UA,C,G,G */
09765      ,{ 825, 690, 825, 725, 660} /* NN,UA,C,G,U/T */
09766      }
09767      ,{{ 575, 440, 575, 475, 410} /* NN,UA,C,U/T,E */
09768      ,{ 575, 440, 575, 475, 410} /* NN,UA,C,U/T,A */
09769      ,{ 355, 220, 355, 255, 190} /* NN,UA,C,U/T,C */
09770      ,{ 575, 440, 575, 475, 410} /* NN,UA,C,U/T,G */
09771      ,{ 105, -30, 105, 5, -60} /* NN,UA,C,U/T,U/T */
09772      }
09773      }
09774      ,{{{ 1450, 530, 1385, 1425, 1340} /* NN,UA,G,E,E */
09775      ,{ 1450, 475, 1060, 1425, 1015} /* NN,UA,G,E,A */
09776      ,{ 1385, 530, 995, 1360, 950} /* NN,UA,G,E,C */
09777      ,{ 1385, 410, 1385, 1360, 1340} /* NN,UA,G,E,G */
09778      ,{ 1320, 465, 930, 1295, 885} /* NN,UA,G,E,U/T */
09779      }
09780      ,{{{ 1435, 460, 1045, 1410, 1000} /* NN,UA,G,A,E */
09781      ,{ 1435, 460, 1045, 1410, 1000} /* NN,UA,G,A,A */
09782      ,{ 1295, 320, 905, 1270, 860} /* NN,UA,G,A,C */
09783      ,{ 345, -240, 345, 85, 300} /* NN,UA,G,A,G */
09784      ,{ 1295, 320, 905, 1270, 860} /* NN,UA,G,A,U/T */
09785      }
09786      ,{{{ 1385, 530, 995, 1360, 950} /* NN,UA,G,C,E */
09787      ,{ 1385, 410, 995, 1360, 950} /* NN,UA,G,C,A */
09788      ,{ 1385, 530, 995, 1360, 950} /* NN,UA,G,C,C */
09789      ,{ 1385, 410, 995, 1360, 950} /* NN,UA,G,C,G */
09790      ,{ 1320, 465, 930, 1295, 885} /* NN,UA,G,C,U/T */
09791      }
09792      ,{{{ 1290, 240, 1290, 1190, 1245} /* NN,UA,G,G,E */
09793      ,{ 115, -470, 115, -145, 70} /* NN,UA,G,G,A */
09794      ,{ 1215, 240, 825, 1190, 780} /* NN,UA,G,G,C */
09795      ,{ 1290, 80, 1290, 405, 1245} /* NN,UA,G,G,G */
09796      ,{ 1215, 240, 825, 1190, 780} /* NN,UA,G,G,U/T */
09797      }
09798      ,{{{ 965, -10, 575, 940, 530} /* NN,UA,G,U/T,E */
09799      ,{ 965, -10, 575, 940, 530} /* NN,UA,G,U/T,A */
09800      ,{ 745, -110, 355, 720, 310} /* NN,UA,G,U/T,C */
09801      ,{ 965, -10, 575, 940, 530} /* NN,UA,G,U/T,G */
09802      ,{ 105, -480, 105, -155, 60} /* NN,UA,G,U/T,U/T */
09803      }
09804      }
09805      ,{{{ 1320, 1250, 1320, 1285, 665} /* NN,UA,U/T,E,E */
09806      ,{ 995, 925, 995, 960, 665} /* NN,UA,U/T,E,A */
09807      ,{ 930, 860, 930, 895, 480} /* NN,UA,U/T,E,C */
09808      ,{ 1320, 1250, 1320, 1285, 480} /* NN,UA,U/T,E,G */
09809      ,{ 865, 795, 865, 830, 415} /* NN,UA,U/T,E,U/T */
09810      }
09811      ,{{{ 980, 910, 980, 945, 650} /* NN,UA,U/T,A,E */
09812      ,{ 980, 910, 980, 945, 650} /* NN,UA,U/T,A,A */
09813      ,{ 840, 770, 840, 805, 390} /* NN,UA,U/T,A,C */
09814      ,{ 400, 210, 400, 245, -170} /* NN,UA,U/T,A,G */
09815      ,{ 840, 770, 840, 805, 390} /* NN,UA,U/T,A,U/T */
09816      }
09817      ,{{{ 930, 860, 930, 895, 480} /* NN,UA,U/T,C,E */
09818      ,{ 930, 860, 930, 895, 480} /* NN,UA,U/T,C,A */
09819      ,{ 930, 860, 930, 895, 480} /* NN,UA,U/T,C,C */
09820      ,{ 930, 860, 930, 895, 480} /* NN,UA,U/T,C,G */
09821      ,{ 865, 795, 865, 830, 415} /* NN,UA,U/T,C,U/T */
09822      }
09823      ,{{{ 1225, 1155, 1225, 1190, 310} /* NN,UA,U/T,G,E */
09824      ,{ 170, -20, 170, 15, -400} /* NN,UA,U/T,G,A */
09825      ,{ 760, 690, 760, 725, 310} /* NN,UA,U/T,G,C */
09826      ,{ 1225, 1155, 1225, 1190, 150} /* NN,UA,U/T,G,G */
09827      ,{ 760, 690, 760, 725, 310} /* NN,UA,U/T,G,U/T */
09828      }
09829      ,{{{ 510, 440, 510, 475, 60} /* NN,UA,U/T,U/T,E */
09830      ,{ 510, 440, 510, 475, 60} /* NN,UA,U/T,U/T,A */
09831      ,{ 290, 220, 290, 255, -160} /* NN,UA,U/T,U/T,C */
09832      ,{ 510, 440, 510, 475, 60} /* NN,UA,U/T,U/T,G */
09833      ,{ 40, -30, 40, 5, -410} /* NN,UA,U/T,U/T,U/T */
09834      }

```

```

09835     }
09836     }
09837     ,{{{ 1580, 1520, 1515, 1555, 1470} /* NN,NN,E,E,E */
09838     ,{ 1580, 1195, 1190, 1555, 1145} /* NN,NN,E,E,A */
09839     ,{ 1515, 1130, 1125, 1490, 1080} /* NN,NN,E,E,C */
09840     ,{ 1580, 1520, 1515, 1490, 1470} /* NN,NN,E,E,G */
09841     ,{ 1450, 1065, 1060, 1425, 1015} /* NN,NN,E,E,U/T */
09842     }
09843     ,{{{ 1520, 1135, 1130, 1495, 1085} /* NN,NN,E,A,E */
09844     ,{ 1520, 1135, 1130, 1495, 1085} /* NN,NN,E,A,A */
09845     ,{ 1380, 995, 990, 1355, 945} /* NN,NN,E,A,C */
09846     ,{ 660, 545, 660, 440, 500} /* NN,NN,E,A,G */
09847     ,{ 1380, 995, 990, 1355, 945} /* NN,NN,E,A,U/T */
09848     }
09849     ,{{{ 1515, 1130, 1125, 1490, 1080} /* NN,NN,E,C,E */
09850     ,{ 1515, 1130, 1125, 1490, 1080} /* NN,NN,E,C,A */
09851     ,{ 1515, 1130, 1125, 1490, 1080} /* NN,NN,E,C,C */
09852     ,{ 1515, 1130, 1125, 1490, 1080} /* NN,NN,E,C,G */
09853     ,{ 1450, 1065, 1060, 1425, 1015} /* NN,NN,E,C,U/T */
09854     }
09855     ,{{{ 1555, 1495, 1490, 1390, 1445} /* NN,NN,E,G,E */
09856     ,{ 765, 530, 765, 430, 485} /* NN,NN,E,G,A */
09857     ,{ 1415, 1030, 1025, 1390, 980} /* NN,NN,E,G,C */
09858     ,{ 1555, 1495, 1490, 1390, 1445} /* NN,NN,E,G,G */
09859     ,{ 1415, 1030, 1025, 1390, 980} /* NN,NN,E,G,U/T */
09860     }
09861     ,{{{ 1470, 1085, 1080, 1445, 1035} /* NN,NN,E,U/T,E */
09862     ,{ 1470, 1085, 1080, 1445, 1035} /* NN,NN,E,U/T,A */
09863     ,{ 1350, 965, 960, 1325, 915} /* NN,NN,E,U/T,C */
09864     ,{ 1470, 1085, 1080, 1445, 1035} /* NN,NN,E,U/T,G */
09865     ,{ 795, 735, 610, 510, 565} /* NN,NN,E,U/T,U/T */
09866     }
09867     }
09868     ,{{{ 1580, 1520, 1515, 765, 1470} /* NN,NN,A,E,E */
09869     ,{ 1255, 1195, 1190, 590, 1145} /* NN,NN,A,E,A */
09870     ,{ 1190, 1130, 1125, 765, 1080} /* NN,NN,A,E,C */
09871     ,{ 1580, 1520, 1515, 525, 1470} /* NN,NN,A,E,G */
09872     ,{ 1125, 1065, 1060, 585, 1015} /* NN,NN,A,E,U/T */
09873     }
09874     ,{{{ 1195, 1135, 1130, 530, 1085} /* NN,NN,A,A,E */
09875     ,{ 1195, 1135, 1130, 530, 1085} /* NN,NN,A,A,A */
09876     ,{ 1055, 995, 990, 395, 945} /* NN,NN,A,A,C */
09877     ,{ 605, 545, 540, -55, 495} /* NN,NN,A,A,G */
09878     ,{ 1055, 995, 990, 395, 945} /* NN,NN,A,A,U/T */
09879     }
09880     ,{{{ 1190, 1130, 1125, 765, 1080} /* NN,NN,A,C,E */
09881     ,{ 1190, 1130, 1125, 525, 1080} /* NN,NN,A,C,A */
09882     ,{ 1190, 1130, 1125, 765, 1080} /* NN,NN,A,C,C */
09883     ,{ 1190, 1130, 1125, 525, 1080} /* NN,NN,A,C,G */
09884     ,{ 1125, 1065, 1060, 585, 1015} /* NN,NN,A,C,U/T */
09885     }
09886     ,{{{ 1555, 1495, 1490, 430, 1445} /* NN,NN,A,G,E */
09887     ,{ 590, 530, 525, -70, 480} /* NN,NN,A,G,A */
09888     ,{ 1090, 1030, 1025, 430, 980} /* NN,NN,A,G,C */
09889     ,{ 1555, 1495, 1490, 270, 1445} /* NN,NN,A,G,G */
09890     ,{ 1090, 1030, 1025, 430, 980} /* NN,NN,A,G,U/T */
09891     }
09892     ,{{{ 1145, 1085, 1080, 485, 1035} /* NN,NN,A,U/T,E */
09893     ,{ 1145, 1085, 1080, 480, 1035} /* NN,NN,A,U/T,A */
09894     ,{ 1025, 965, 960, 485, 915} /* NN,NN,A,U/T,C */
09895     ,{ 1145, 1085, 1080, 480, 1035} /* NN,NN,A,U/T,G */
09896     ,{ 795, 735, 610, 45, 565} /* NN,NN,A,U/T,U/T */
09897     }
09898     }
09899     ,{{{ 1515, 1380, 1515, 1415, 1350} /* NN,NN,C,E,E */
09900     ,{ 1190, 1055, 1190, 1090, 1025} /* NN,NN,C,E,A */
09901     ,{ 1125, 990, 1125, 1025, 960} /* NN,NN,C,E,C */
09902     ,{ 1515, 1380, 1515, 1415, 1350} /* NN,NN,C,E,G */
09903     ,{ 1060, 925, 1060, 960, 895} /* NN,NN,C,E,U/T */
09904     }
09905     ,{{{ 1130, 995, 1130, 1030, 965} /* NN,NN,C,A,E */
09906     ,{ 1130, 995, 1130, 1030, 965} /* NN,NN,C,A,A */
09907     ,{ 990, 855, 990, 890, 825} /* NN,NN,C,A,C */
09908     ,{ 660, 405, 660, 440, 500} /* NN,NN,C,A,G */
09909     ,{ 990, 855, 990, 890, 825} /* NN,NN,C,A,U/T */
09910     }
09911     ,{{{ 1125, 990, 1125, 1025, 960} /* NN,NN,C,C,E */
09912     ,{ 1125, 990, 1125, 1025, 960} /* NN,NN,C,C,A */
09913     ,{ 1125, 990, 1125, 1025, 960} /* NN,NN,C,C,C */
09914     ,{ 1125, 990, 1125, 1025, 960} /* NN,NN,C,C,G */
09915     ,{ 1060, 925, 1060, 960, 895} /* NN,NN,C,C,U/T */
09916     }
09917     ,{{{ 1490, 1355, 1490, 1390, 1325} /* NN,NN,C,G,E */
09918     ,{ 765, 395, 765, 430, 485} /* NN,NN,C,G,A */
09919     ,{ 1025, 890, 1025, 925, 860} /* NN,NN,C,G,C */
09920     ,{ 1490, 1355, 1490, 1390, 1325} /* NN,NN,C,G,G */
09921     ,{ 1025, 890, 1025, 925, 860} /* NN,NN,C,G,U/T */

```

```

09922     }
09923     ,{{ 1080, 945, 1080, 980, 915} /* NN,NN,C,U/T,E */
09924     ,{{ 1080, 945, 1080, 980, 915} /* NN,NN,C,U/T,A */
09925     ,{{ 960, 825, 960, 860, 800} /* NN,NN,C,U/T,C */
09926     ,{{ 1080, 945, 1080, 980, 915} /* NN,NN,C,U/T,G */
09927     ,{{ 610, 475, 610, 510, 445} /* NN,NN,C,U/T,U/T */
09928     }
09929     }
09930     ,{{{ 1580, 660, 1515, 1555, 1470} /* NN,NN,G,E,E */
09931     ,{{ 1580, 605, 1190, 1555, 1145} /* NN,NN,G,E,A */
09932     ,{{ 1515, 660, 1125, 1490, 1080} /* NN,NN,G,E,C */
09933     ,{{ 1515, 540, 1515, 1490, 1470} /* NN,NN,G,E,G */
09934     ,{{ 1450, 595, 1060, 1425, 1015} /* NN,NN,G,E,U/T */
09935     }
09936     ,{{{ 1520, 545, 1130, 1495, 1085} /* NN,NN,G,A,E */
09937     ,{{ 1520, 545, 1130, 1495, 1085} /* NN,NN,G,A,A */
09938     ,{{ 1380, 405, 990, 1355, 945} /* NN,NN,G,A,C */
09939     ,{{ 540, -45, 540, 280, 495} /* NN,NN,G,A,G */
09940     ,{{ 1380, 405, 990, 1355, 945} /* NN,NN,G,A,U/T */
09941     }
09942     ,{{{ 1515, 660, 1125, 1490, 1080} /* NN,NN,G,C,E */
09943     ,{{ 1515, 540, 1125, 1490, 1080} /* NN,NN,G,C,A */
09944     ,{{ 1515, 660, 1125, 1490, 1080} /* NN,NN,G,C,C */
09945     ,{{ 1515, 540, 1125, 1490, 1080} /* NN,NN,G,C,G */
09946     ,{{ 1450, 595, 1060, 1425, 1015} /* NN,NN,G,C,U/T */
09947     }
09948     ,{{{ 1490, 440, 1490, 1390, 1445} /* NN,NN,G,G,E */
09949     ,{{ 525, -55, 525, 270, 480} /* NN,NN,G,G,A */
09950     ,{{ 1415, 440, 1025, 1390, 980} /* NN,NN,G,G,C */
09951     ,{{ 1490, 280, 1490, 605, 1445} /* NN,NN,G,G,G */
09952     ,{{ 1415, 440, 1025, 1390, 980} /* NN,NN,G,G,U/T */
09953     }
09954     ,{{{ 1470, 500, 1080, 1445, 1035} /* NN,NN,G,U/T,E */
09955     ,{{ 1470, 495, 1080, 1445, 1035} /* NN,NN,G,U/T,A */
09956     ,{{ 1350, 500, 960, 1325, 915} /* NN,NN,G,U/T,C */
09957     ,{{ 1470, 495, 1080, 1445, 1035} /* NN,NN,G,U/T,G */
09958     ,{{ 610, 25, 610, 350, 565} /* NN,NN,G,U/T,U/T */
09959     }
09960     }
09961     ,{{{ 1450, 1380, 1450, 1415, 795} /* NN,NN,U/T,E,E */
09962     ,{{ 1125, 1055, 1125, 1090, 795} /* NN,NN,U/T,E,A */
09963     ,{{ 1060, 990, 1060, 1025, 610} /* NN,NN,U/T,E,C */
09964     ,{{ 1450, 1380, 1450, 1415, 610} /* NN,NN,U/T,E,G */
09965     ,{{ 995, 925, 995, 960, 545} /* NN,NN,U/T,E,U/T */
09966     }
09967     ,{{{ 1065, 995, 1065, 1030, 735} /* NN,NN,U/T,A,E */
09968     ,{{ 1065, 995, 1065, 1030, 735} /* NN,NN,U/T,A,A */
09969     ,{{ 925, 855, 925, 890, 475} /* NN,NN,U/T,A,C */
09970     ,{{ 595, 405, 595, 440, 25} /* NN,NN,U/T,A,G */
09971     ,{{ 925, 855, 925, 890, 475} /* NN,NN,U/T,A,U/T */
09972     }
09973     ,{{{ 1060, 990, 1060, 1025, 610} /* NN,NN,U/T,C,E */
09974     ,{{ 1060, 990, 1060, 1025, 610} /* NN,NN,U/T,C,A */
09975     ,{{ 1060, 990, 1060, 1025, 610} /* NN,NN,U/T,C,C */
09976     ,{{ 1060, 990, 1060, 1025, 610} /* NN,NN,U/T,C,G */
09977     ,{{ 995, 925, 995, 960, 545} /* NN,NN,U/T,C,U/T */
09978     }
09979     ,{{{ 1425, 1355, 1425, 1390, 510} /* NN,NN,U/T,G,E */
09980     ,{{ 585, 395, 585, 430, 45} /* NN,NN,U/T,G,A */
09981     ,{{ 960, 890, 960, 925, 510} /* NN,NN,U/T,G,C */
09982     ,{{ 1425, 1355, 1425, 1390, 350} /* NN,NN,U/T,G,G */
09983     ,{{ 960, 890, 960, 925, 510} /* NN,NN,U/T,G,U/T */
09984     }
09985     ,{{{ 1015, 945, 1015, 980, 565} /* NN,NN,U/T,U/T,E */
09986     ,{{ 1015, 945, 1015, 980, 565} /* NN,NN,U/T,U/T,A */
09987     ,{{ 895, 825, 895, 860, 445} /* NN,NN,U/T,U/T,C */
09988     ,{{ 1015, 945, 1015, 980, 565} /* NN,NN,U/T,U/T,G */
09989     ,{{ 545, 475, 545, 510, 95} /* NN,NN,U/T,U/T,U/T */
09990     }
09991     }
09992     }
09993     }
09994     };
09995

```

11.106 list.h

```

00001 /*
00002 $Log: list.h,v $
00003 Revision 1.2 2000/10/10 08:50:01 ivo
00004 some annotation for lclint
00005
00006 Revision 1.1 1997/08/04 21:05:32 walter
00007 Initial revision
00008

```

```

00009 */
00010
00011 #ifndef __LIST_H
00012 #define __LIST_H
00013
00014 /*----- Macros and type definitions -----*/
00015
00016 typedef struct LST_BUCKET {
00017     struct LST_BUCKET *next;
00018 }
00019 LST_BUCKET;
00020
00021 typedef struct {
00022     int count; /* Number of elements currently in list */
00023     LST_BUCKET *head; /* Pointer to head element of list */
00024     LST_BUCKET *z; /* Pointer to last node of list */
00025     LST_BUCKET hz[2]; /* Space for head and z nodes */
00026 }
00027 LIST;
00028
00029 /* Return a pointer to the user space given the address of the header of
00030 * a node.
00031 */
00032
00033 #define LST_USERSPACE(h) ((void*)((LST_BUCKET*)(h) + 1))
00034
00035 /* Return a pointer to the header of a node, given the address of the
00036 * user space.
00037 */
00038
00039 #define LST_HEADER(n) ((LST_BUCKET*)(n) - 1)
00040
00041 /* Return a pointer to the user space of the list's head node. This user
00042 * space does not actually exist, but it is useful to be able to address
00043 * it to enable insertion at the start of the list.
00044 */
00045
00046 #define LST_HEAD(l) LST_USERSPACE((l)->head)
00047
00048 /* Determine if a list is empty
00049 */
00050
00051 #define LST_EMPTY(l) ((l)->count == 0)
00052
00053 /*----- Function Prototypes -----*/
00054
00055 /*@only@/*@out@*/ void *lst_newnode (int size);
00056 void lst_freemnode (/*@only@*/ void *node);
00057 /*@only@/*@out@*/ LIST *lst_init (void);
00058 void lst_kill (LIST * l, void (*freeNode) ());
00059 void lst_insertafter (LIST * l, /*@keep@*/ void *node, void *after);
00060 void *lst_deletenext (/*@only@*/ LIST * l, void *node);
00061 /*@dependent@*/ void *lst_first (LIST * l);
00062 /*@dependent@*/ void *lst_next (void *prev);
00063 void lst_mergesort (LIST * l, int (*cmp_func) ());
00064
00065 #endif

```

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