- 1 -
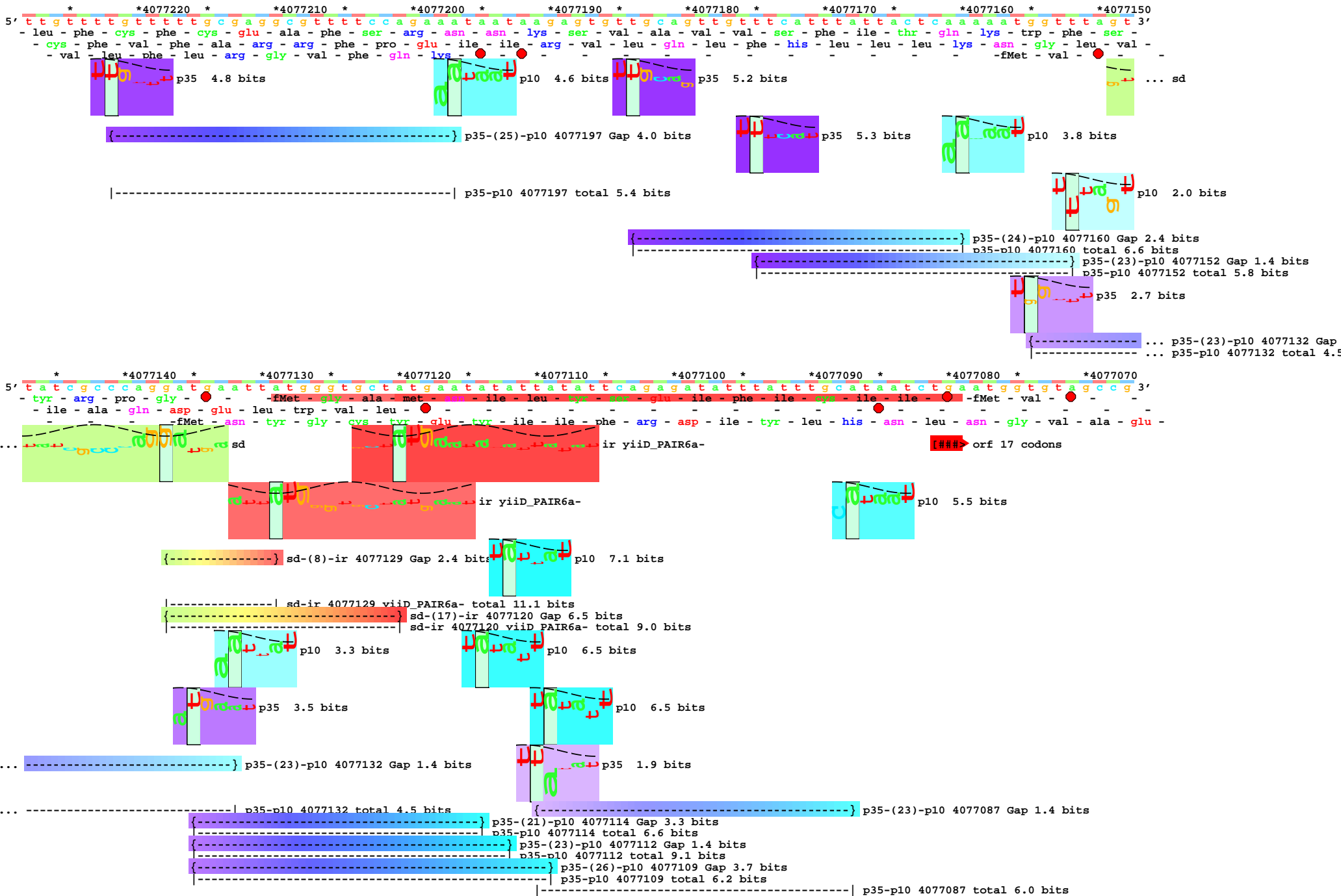
piece 1, NC_000913, yiiD_PAIR6a-, config: linear, direction: -, begin: 4077228, end: 4076442
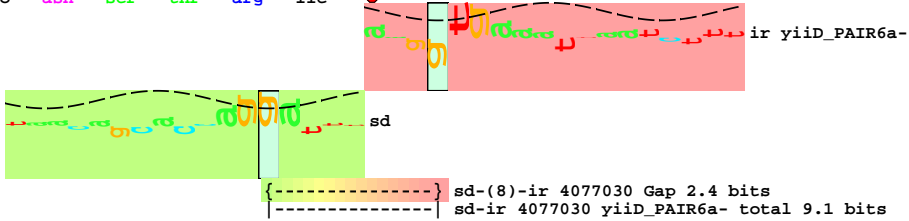
```
        *       *4077220  *       *4077210  *       *4077200  *       *4077190  *       *4077180  *       *4077170  *       *4077160  *       *4077150
5' ttgtttttgttttgcgaggcgtttttccagaaataataagagtgttgcagttgtttcatttattactcaaaaatggtttagt 3'
   - leu - phe - cys - phe - cys - glu - ala - phe - ser - arg - asn - asn - lys - ser - val - ala - val - val - ser - phe - ile - thr - gln - lys - trp - phe - ser -
   - - val - leu - phe - val - phe - ala - arg - arg - phe - pro - glu - ile - ile - arg - val - leu - gln - leu - phe - his - leu - leu - leu - lys - asn - gly - leu - val -
   - - val - leu - phe - leu - arg - gly - val - phe - gln - lys - ●    ●   - - - - - - - - - - -fMet - val - ● - - -
```

p35  4.8 bits

p10  4.6 bits      p35  5.2 bits      ... sd

{------------------------------------------------} p35-(25)-p10 4077197 Gap 4.0 bits      p35  5.3 bits      p10  3.8 bits

|------------------------------------------------| p35-p10 4077197 total 5.4 bits      p10  2.0 bits

{-------------------------------------------------} p35-(24)-p10 4077160 Gap 2.4 bits
|-------------------------------------------------| p35-p10 4077160 total 6.6 bits
{----------------------------------------------} p35-(23)-p10 4077152 Gap 1.4 bits
|----------------------------------------------| p35-p10 4077152 total 5.8 bits
p35  2.7 bits
{-------------------------- ... p35-(23)-p10 4077132 Gap
|-------------------------- ... p35-p10 4077132 total 4.5

```
        *       *4077140  *       *4077130  *       *4077120  *       *4077110  *       *4077100  *       *4077090  *       *4077080  *       *4077070
5' tatcgcccaggatgaattatgggtgctatgaatatattatattcagagatatttatttgcataatctgaatggtgtagccg 3'
   - tyr - arg - pro - gly - ● - -fMet - gly - ala - met - asn - ile - leu - tyr - asn - glu - ile - phe - ile - arg - ile - ile - ● -fMet - val - ● - - -
   - ile - ala - gln - asp - glu - leu - trp - val - leu - ● - ile - leu - tyr - asn - glu - ile - phe - ile - arg - asp - ile - tyr - leu - his - asn - leu - asn - gly - val - ala - glu -
   - - - - -fMet - asn - tyr - gly - cys - tyr - glu - tyr - ile - ile - phe - arg - asp - ile - tyr - leu - his - asn - leu - asn - gly - val - ala - glu -
```

... sd      ir yiiD_PAIR6a-      [###> orf 17 codons

ir yiiD_PAIR6a-      p10  5.5 bits

{---------------} sd-(8)-ir 4077129 Gap 2.4 bits      p10  7.1 bits

|---------------| sd-ir 4077129 yiiD_PAIR6a- total 11.1 bits
{------------------------} sd-(17)-ir 4077120 Gap 6.5 bits
|------------------------| sd-ir 4077120 yiiD_PAIR6a- total 9.0 bits

p10  3.3 bits      p10  6.5 bits

p35  3.5 bits      p10  6.5 bits

... {------------------------------} p35-(23)-p10 4077132 Gap 1.4 bits      p35  1.9 bits

... |------------------------------| p35-p10 4077132 total 4.5 bits      {------------------------------------} p35-(23)-p10 4077087 Gap 1.4 bits
{------------------------------} p35-(21)-p10 4077114 Gap 3.3 bits
|------------------------------| p35-p10 4077114 total 6.6 bits
{------------------------------} p35-(23)-p10 4077112 Gap 1.4 bits
|------------------------------| p35-p10 4077112 total 9.1 bits
{------------------------------} p35-(26)-p10 4077109 Gap 3.7 bits
|------------------------------| p35-p10 4077109 total 6.2 bits
|------------------------------------| p35-p10 4077087 total 6.0 bits

```
         *      *4077060  *      *4077050  *      *4077040  *      *4077030  *      *4077020  *      *4077010  *      *4077000  *      *4076990
5' aaaaacgtcagcatcctaacagcaccaggatttaaggtgaaattaatctttcatcacagaccggtcagtactgccaccaac 3'
    -   -   -   -   -   -   -   -   -   -   -   -   -   -fMet- lys - leu - ile - phe - his - his - arg - pro - val - ser - thr - ala - thr - asn
    - lys - arg - gln - his - pro - asn - ser - thr - arg - ile -                                                                -
                                                                          ir yiiD_PAIR6a-
                                                       sd
                              {- - - - - - - - - - -}  sd-(8)-ir 4077030 Gap 2.4 bits
                              |- - - - - - - - - - - -|  sd-ir 4077030 yiiD_PAIR6a- total 9.1 bits

         *      *4076980  *      *4076970  *      *4076960  *      *4076950  *      *4076940  *      *4076930  *      *4076920  *      *4076910  *
5' cggtcttcacttgctcatcgttataattttgttggtaacagttcgggaaagttgtttttctaaattaacaacagaataact 3'
    - arg - ser - leu - leu - ala - his - arg - tyr - asn - phe - val - gly - asn - ser - ser - gly - lys - leu - phe - phe -   -   -   -
              -fMet- leu - ile - val - ile - ile - leu - leu - val - thr - val - arg - glu - ser - cys - phe - ser - lys - leu - thr - thr - glu -
                                                   p35  3.4 bits              [###> orf 36 codons                             ... p10
                                                                            p10  2.1 bits
                              {- - - - - - - - - - - - - - - - - - ->  p35-(23)-p10 4076929 Gap 1.4 bits
                              |- - - - - - - - - - - - - - - - - - -|  p35-p10 4076929 total 4.0 bits
                                                                     p35  4.8 bits
                                                       {- - - - - - - - - - - - - - - ->  p35-(21)-p10 4076908 Gap 3.3 bits
                                                       |- - - - - - - - - - - - - - - -|  p35-p10 4076908 total 5.1 bits
                                                              p35  2.7 bits
                                                           {- - - - - - - - - - - -  ... p35-(23)-p10 4076897 Gap
                                                           |- - - - - - - - - - - -  ... p35-p10 4076897 total 5.7

         *      *4076900  *      *4076890  *      *4076880  *      *4076870  *      *4076860  *      *4076850  *      *4076840  *      *4076830  *
5' ttcttgtttaatgagattaatattggcaaccattatagcctcctccttcccacggtttaagagcaaacatacaacataattatt 3'
    - -fMet- phe - asn - glu - ile - asn - ile - gly - asn - his - tyr - ser - leu - leu - pro - thr - val -   -   -   -
    -   -   -   -   -fMet- arg - leu - ile - leu - ala - thr - ile - ile - ala - ser - phe - pro - arg - phe - lys - ser - lys - his - thr - thr -   -   -
   ... p10  3.7 bits           ir yiiD_PAIR6a-                                 p35  4.7 bits              [###> orf 18 codons
                  sd                                    p10  4.2 bits                                                      ... sd
                  {- - - - - - - - -}  sd-(10)-ir 4076882 Gap 2.7 bits
                                                                                                                          p10  3.3 bits
                  |- - - - - - - - - -|  sd-ir 4076882 yiiD_PAIR6a- total 6.5 bits
                                                                              {- - - - - - - - - - - - - - -}  p35-(22)-p10 4076829 Gap 2.3 bits
        p10  4.5 bits                                                          |- - - - - - - - - - - - - - -|  p35-p10 4076829 total 5.6 bits
        p35  5.7 bits
```
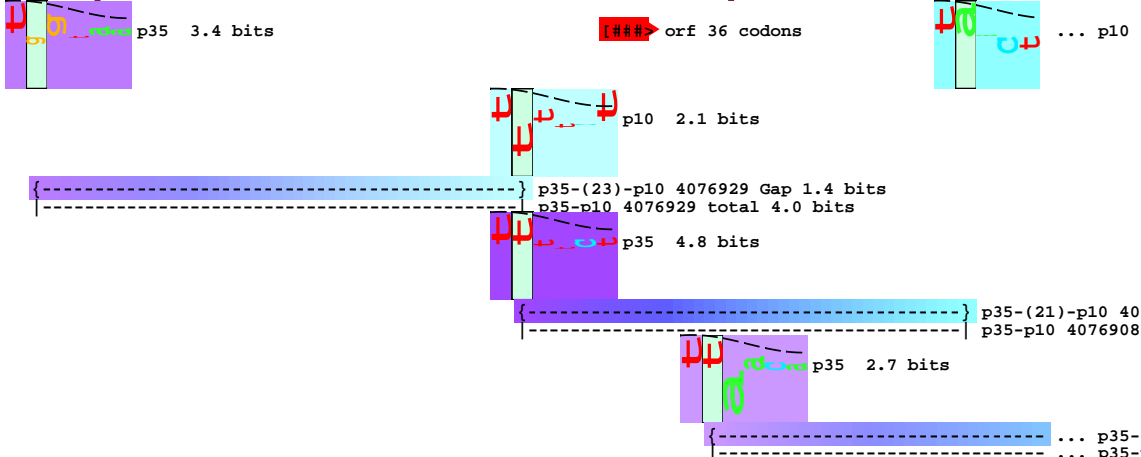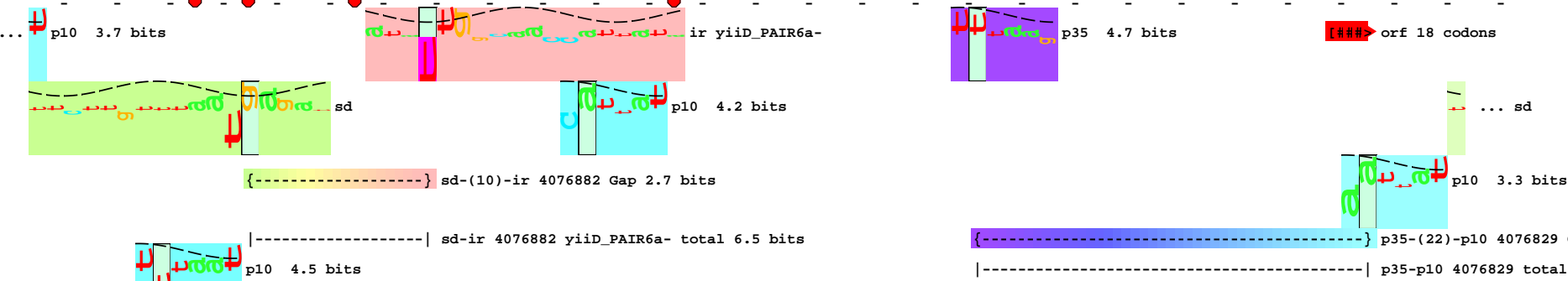
p35-(24)-p10 4076873 Gap 2.4 bits
p35-p10 4076873 total 7.4 bits
... p35-(23)-p10 4076897 Gap 1.4 bits
... p35-p10 4076897 total 5.7 bits

```
         *4076820  *      *4076810  *      *4076800  *      *4076790  *      *4076780  *      *4076770  *      *4076760  *      *4076750  *
5'  cataacatacagagcagcagtaaatgaatgatactgacaatgatgctagtccattatctttgcataatatttgttagctataga  3'
```

-fMet - ile - leu - thr - met - met - leu - val - his - tyr - leu - cys - ile - ile - phe - val - ser - tyr - arg
-fMet - leu - ala - ile - asp
-fMet - asn - asp - thr - asp - asn - asp - ala - ser - pro - leu - ser - leu - his - asn - ile - cys

ir yiiD_PAIR6a-          p10   4.2 bits          [###> orf 18 codons

...          sd          ir yiiD_PAIR6a-          p10   5.5 bits          ... p10
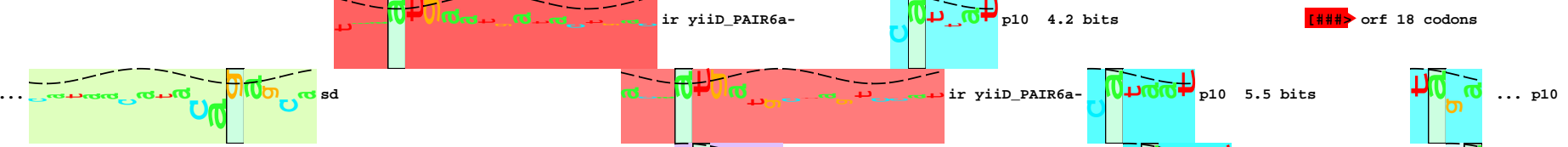
{------------------} sd-(9)-ir 4076803 Gap 2.3 bits          p35   1.6 bits          ... p10

|------------------| sd-ir 4076803 yiiD_PAIR6a- total 9.6 bits          p35   6.2 bits

sd          {--------------------------------------} p35-(23)-p10 4076763 Gap 1.4 bits

{--------------------} sd-(10)-ir 4076787 Gap 2.7 bits          {----------------------------------} p35-(21)-p10 4076745 Gap 3.3 bits

|------------------| sd-ir 4076787 yiiD_PAIR6a- total 7.6 bits          p35   4.7 bits

p35   2.5 bits |--------------------------------------------| p35-p10 4076763 total 5.7 bits

{--------------------------------} p35-(24)-p10 4076774 Gap 2.4 bits          {-------------------------- ... p35-(21)-p10 4076734 Gap
|--------------------------------| p35-p10 4076774 total 4.3 bits          |-------------------------- ... p35-p10 4076734 total 4.1

p35   2.1 bits          |--------------------------------------------| p35-p10 4076745 total 7.6 bits

{----------------------------} p35-(22)-p10 4076761 Gap 2.3 bits
|----------------------------| p35-p10 4076761 total 6.1 bits

{------------------------------} p35-(23)-p10 4076743 Gap 1.4 b
|------------------------------| p35-p10 4076743 total 5.9 bits

```
         *4076740  *      *4076730  *      *4076720  *      *4076710  *      *4076700  *      *4076690  *      *4076680  *      *4076670  *
5'  ttttaaaatatttatgagaaaagtatggcaccagagggggtttgactatcaaaaatcgctcaaacatgaactaagatga  3'
```

phe
- phe - lys - asn - ile - tyr - glu - lys - ser - met - ala - pro - glu - gly - val - leu - thr - ile - lys - asn - arg - ser - asn - met - asn
-fMet - arg - lys - val - trp - his - gln - arg - gly - phe
-fMet - met

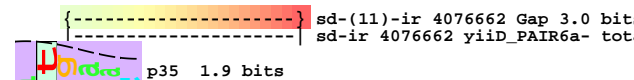[###> orf 17 codons          ir yiiD_PAIR6a-          [###> orf 17 codons

... p10   4.7 bits          {----------------} sd-(9)-ir 4076717 Gap 2.3 bits          ... ir
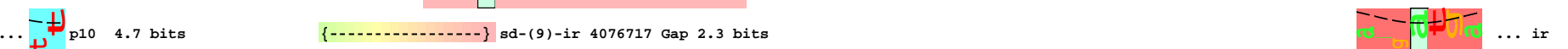
... p10   1.1 bits          |------------------| sd-ir 4076717 yiiD_PAIR6a- total 6.3 bits          sd          ... ir

sd          {----------------} sd-(8)-ir 4076665 Gap 2.4 bits

p10   2.7 bits
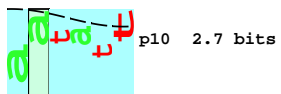
|---------------| sd-ir 4076665 yiiD_PAIR6a- total 7.8

sd-(11)-ir 4076662 Gap 3.0 bit
|---------------| sd-ir 4076662 yiiD_PAIR6a- tot

p35   1.9 bits

{---------------------------- ... p35-(23)-p10 4076651 Gap
|---------------------------- ... p35-p10 4076651 total 4.7

... p35

... ---------------------} p35-(21)-p10 4076734 Gap 3.3 bits
... ---------------| p35-p10 4076734 total 4.1 bits
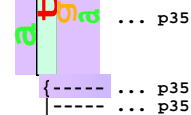
{------------- ... p35-(23)-p10 4076641 Gap
------- ... p35-p10 4076641 total 4.5

*4076660  *       *4076650  *       *4076640  *       *4076630  *       *4076620  *       *4076610  *       *4076600  *       *4076590  *
5' tgaattaagcattatctgcgataattgccactcagttctacaaataatatttaaatgctcctgaacagtgatgtagcaaga 3'
- fMet - pro - leu - ser - ser - thr - asn - asn - ile - fMet - leu - leu - asn - ser - asp - val - ala - arg -
- asn - -fMet - met -

[###> orf 4 codons

p10   4.3 bits        p10   2.7 bits

... ir yiiD_PAIR6a-        p35   6.1 bits        p10   3.7 bits
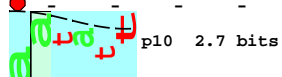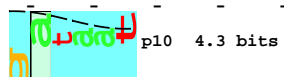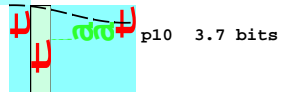
... ir yiiD_PAIR6a-        {--------------------------------} p35-(21)-p10 4076615 Gap 3.3 bits

p10   4.2 bits        |------------------------------------------| p35-p10 4076615 total 5.5 bits
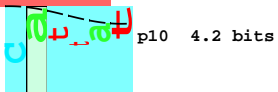
{--------------------------------} p35-(26)-p10 4076610 Gap 3.7 bits
|------------------------------------------| p35-p10 4076610 total 6.1 bits

... ---------------} p35-(23)-p10 4076651 Gap 1.4 bits
... ---------------| p35-p10 4076651 total 4.7 bits

... p35   1.6 bits

... --------------------------------} p35-(23)-p10 4076641 Gap 1.4 bits
... --------------------------------| p35-p10 4076641 total 4.5 bits

*4076580  *       *4076570  *       *4076560  *       *4076550  *       *4076540  *       *4076530  *       *4076520  *       *4076510  *       *4076500
5' cacgtatggagccaacgaagaataaaaatttatagagttcttatttaatataaccgaaatagccaaggactaatataaatg 3'
- his - val - trp - ser - gln - arg - arg - ile - lys - ile - tyr - arg - val - leu - ile - -fMet -
- -fMet - glu - pro - thr - lys - asn - lys - asn - leu -
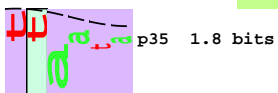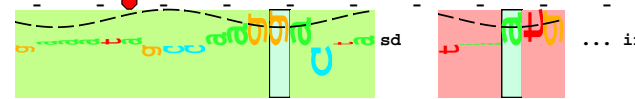
sd        ... ir

p35   1.8 bits        {--------------------} sd-(11)-ir 4076502 Gap 3.0 bits

|--------------------| sd-ir 4076502 yiiD_PAIR6a- total 7

p10  6.3 bits

{------------------------------------------} p35-(26)-p10 4076509 Gap 3.7 bits
|------------------------------------------| p35-p10 4076509 total 4.4 bits

```
         *      *4076490  *      *4076480  *      *4076470  *      *4076460  *      *4076450  *
5' a c c t g a a t g a g a g a g g c a g c a c c g c c c c t c t c c a t c a g c t a c t c t t c t t c g t t c c c g c 3'
   -  thr  -   ●   -fMet -  arg  -  glu  - ala - ala - pro - pro - leu -  ser  - ile -  ser  -  tyr  -  ser  -  ser  -  ser  - phe - pro -
   -      -      -      -      -      -     -     -     -     -     -      -     -      -      -      -      -      -     -     -fMet
```

... ir yiiD_PAIR6a-                        <-------------------------------------- ... NC_000913.yiiD

[###> orf 3 codons