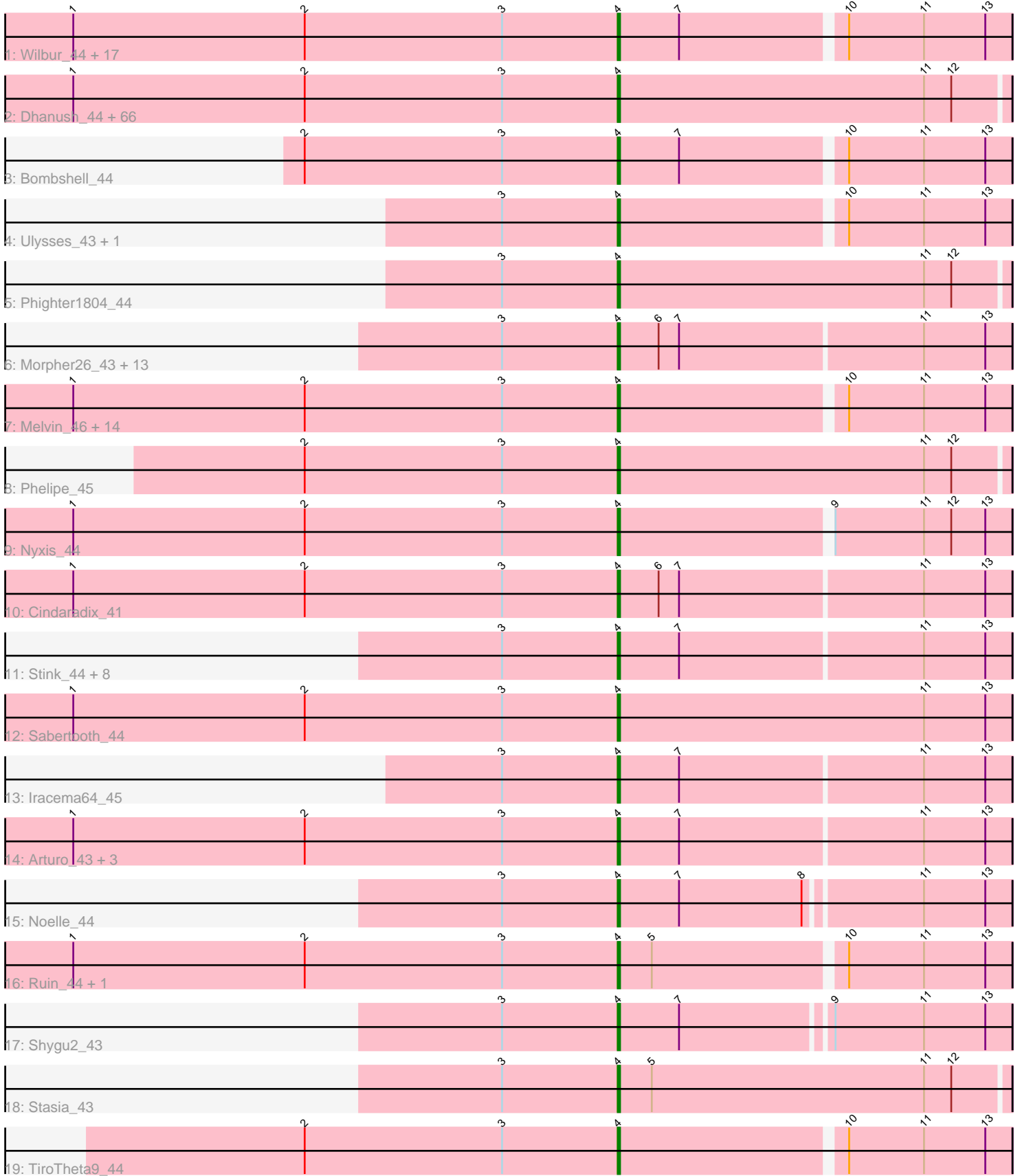


Pham 221221



Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

Pham 221221 Report

This analysis was run 03/28/25 on database version 593.

Pham number 221221 has 142 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Wilbur_44, Avle17_44, Relief_43, Jaykayelowell_42, JoongJeon_43, JetBlade_44, Kremtemulon_44, KFPoly_43, Wander_44, Romney_44, Lunsford_45, Iceman_44, Shaka_44, Eapen_44, Kingmustik0402_44, Phontbonne_44, LittleGuy_44, PeterPeter_44
- Track 2 : Dhanush_44, Pipcraft_42, Albee_44, Nebs_45, SenorClean_42, NotAPhaseMom_44, Mazhar510_44, CentreCat_44, Mayonnaise_44, TygerBlood_44, HamSlice_43, Maxo_45, Lemur_44, TroyPia_45, Caelakin_44, LittleB_44, Morrow_45, BellusTerra_45, Medusa_44, Bruiser_43, Connomayer_44, Phacado_44, Blackmoor_44, Scamp_44, Clarenza_43, Wizard007_44, Camperdownii_42, LeoAvram_44, Houdini22_44, Bartimeaus_44, Ohfah_45, Chaph_44, Druantia_44, Koan_42, Burger_42, Eagle_44, Peaches_44, NorthStar_43, Eros_44, Sparxx_45, Holli_43, Deano_43, Citius_44, Baby16_44, LappelDuVide_44, BubbleTrouble_43, Huxley_44, LochMonster_45, Eris_43, Maverick_44, Kyee_44, TinaFeyge_44, Kampy_44, Gadost_44, Abdiel_44, Broseidon_44, Funston_43, Commander_44, Koreni_43, Lorenzo_44, Polymorphads_45, Florean_44, Cocoaberry_44, Roosevelt_43, Nemo27_44, Taquarus_44, Spino_43
- Track 3 : Bombshell_44
- Track 4 : Ulysses_43, Alberto7_45
- Track 5 : Phighter1804_44
- Track 6 : Morpher26_43, Cici_43, Xena_42, Datway_43, Bumblebee11_42, AbbysRanger_43, Mundrea_43, Backyardigan_42, Achebe_42, Wile_43, Badger_42, PetiteSangsue_43, Katalie136_43, Perplexer_43
- Track 7 : Melvin_46, Rosa24_43, Millski_43, Cintron_43, Annyong_44, Eurydice_45, Thanksgivukkah_43, MeeZee_44, Tinybot_43, Flux_44, OKaNui_44, ICleared_44, Pumbaa_44, YoSam321_44, Skipitt_43
- Track 8 : Phelipe_45
- Track 9 : Nyxis_44
- Track 10 : Cindaradix_41
- Track 11 : Stink_44, BangNhom_45, Cerulean_45, SheldonCooper_46, Obama12_45, AvatarAhPeg_43, LHTSCC_46, ChampagnePapi_46, Miramae_43
- Track 12 : Sabertooth_44
- Track 13 : Iracema64_45
- Track 14 : Arturo_43, DirtyDunning_43, Happiness_43, Kratak_44
- Track 15 : Noelle_44
- Track 16 : Ruin_44, Palestino_43
- Track 17 : Shygu2_43

- Track 18 : Stasia_43
- Track 19 : TiroTheta9_44

Summary of Final Annotations (See graph section above for start numbers):

The start number called the most often in the published annotations is 4, it was called in 137 of the 137 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbysRanger_43, Abdiel_44, Achebe_42, Albee_44, Alberto7_45, Annyong_44, Arturo_43, AvatarAhPeg_43, Avle17_44, Baby16_44, Backyardigan_42, Badger_42, BangNhom_45, Bartimeaus_44, BellusTerra_45, Blackmoor_44, Bombshell_44, Broseidon_44, Bruiser_43, BubbleTrouble_43, Bumblebee11_42, Burger_42, Caelakin_44, Camperdownii_42, CentreCat_44, Cerulean_45, ChampagnePapi_46, Chaph_44, Cici_43, Cindaradix_41, Cintron_43, Citius_44, Clarenza_43, Cocoaberry_44, Commander_44, Connomayer_44, Datway_43, Deano_43, Dhanush_44, DirtyDunning_43, Druantia_44, Eagle_44, Eapen_44, Eris_43, Eros_44, Eurydice_45, Floean_44, Flux_44, Funston_43, Gadost_44, HamSlice_43, Happiness_43, Holli_43, Houdini22_44, Huxley_44, ICleared_44, Iceman_44, Iracema64_45, Jaykayelowell_42, JetBlade_44, JoongJeon_43, KFPoly_43, Kampy_44, Katalie136_43, Kingmustik0402_44, Koan_42, Koreni_43, Kratak_44, Kremtemulon_44, Kyee_44, LHTSCC_46, LappelDuVide_44, Lemur_44, LeoAvram_44, LittleB_44, LittleGuy_44, LochMonster_45, Lorenzo_44, Lunsford_45, Maverick_44, Maxo_45, Mayonnaise_44, Mazhar510_44, Medusa_44, MeeZee_44, Melvin_46, Millski_43, Miramae_43, Morpher26_43, Morrow_45, Mundrea_43, Nebs_45, Nemo27_44, Noelle_44, NorthStar_43, NotAPhaseMom_44, Nyxis_44, OKaNui_44, Obama12_45, Ohfah_45, Palestino_43, Peaches_44, Perplexer_43, PeterPeter_44, PetiteSangsue_43, Phacado_44, Phelipe_45, Phighter1804_44, Phontbonne_44, Pipcraft_42, Polymorphads_45, Pumbaa_44, Relief_43, Romney_44, Roosevelt_43, Rosa24_43, Ruin_44, Sabertooth_44, Scamp_44, SeniorClean_42, Shaka_44, SheldonCooper_46, Shygu2_43, Skipitt_43, Sparxx_45, Spino_43, Stasia_43, Stink_44, Taquarus_44, Thanksgivukkah_43, TinaFeyge_44, Tinybot_43, TiroTheta9_44, TroyPia_45, TygerBlood_44, Ulysses_43, Wander_44, Wilbur_44, Wile_43, Wizard007_44, Xena_42, YoSam321_44,

Genes that have the "Most Annotated" start but do not call it:

-

Genes that do not have the "Most Annotated" start:

-

Summary by start number:

Start 4:

- Found in 142 of 142 (100.0%) of genes in pham
- Manual Annotations of this start: 137 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbysRanger_43 (A4), Abdiel_44 (A4), Achebe_42 (A4), Albee_44 (A4), Alberto7_45 (A4), Annyong_44 (A4), Arturo_43 (A4), AvatarAhPeg_43 (A4), Avle17_44 (A4), Baby16_44 (A4), Backyardigan_42 (A4),

Badger_42 (A4), BangNhom_45 (A4), Bartimeaus_44 (A4), BellusTerra_45 (A4), Blackmoor_44 (A4), Bombshell_44 (A4), Broseidon_44 (A4), Bruiser_43 (A4), BubbleTrouble_43 (A4), Bumblebee11_42 (A4), Burger_42 (A4), Caelakin_44 (A4), Camperdownii_42 (A4), CentreCat_44 (A4), Cerulean_45 (A4), ChampagnePapi_46 (A4), Chaph_44 (A4), Cici_43 (A4), Cindaradix_41 (A4), Cintron_43 (A4), Citius_44 (A4), Clarenza_43 (A4), Cocoaberry_44 (A4), Commander_44 (A4), Connomayer_44 (A4), Datway_43 (A4), Deano_43 (A4), Dhanush_44 (A4), DirtyDunning_43 (A4), Druantia_44 (A4), Eagle_44 (A4), Eapen_44 (A4), Eris_43 (A4), Eros_44 (A4), Eurydice_45 (A4), Florean_44 (A4), Flux_44 (A4), Funston_43 (A4), Gadost_44 (A4), HamSlice_43 (A4), Happiness_43 (A4), Holli_43 (A4), Houdini22_44 (A4), Huxley_44 (A4), ICleared_44 (A4), Iceman_44 (A4), Iracema64_45 (A4), Jaykayelowell_42 (A4), JetBlade_44 (A4), JoongJeon_43 (A4), KFPoly_43 (A4), Kamy_44 (A4), Katalie136_43 (A4), Kingmustik0402_44 (A4), Koan_42 (A4), Koreni_43 (A4), Kratark_44 (A4), Kremtemulon_44 (A4), Kyee_44 (A4), LHTSCC_46 (A4), LappelDuVide_44 (A4), Lemur_44 (A4), LeoAvram_44 (A4), LittleB_44 (A4), LittleGuy_44 (A4), LochMonster_45 (A4), Lorenzo_44 (A4), Lunsford_45 (A4), Maverick_44 (A4), Maxo_45 (A4), Mayonnaise_44 (A4), Mazhar510_44 (A4), Medusa_44 (A4), MeeZee_44 (A4), Melvin_46 (A4), Millski_43 (A4), Miramae_43 (A4), Morpher26_43 (A4), Morrow_45 (A4), Mundrea_43 (A4), Nebs_45 (A4), Nemo27_44 (A4), Noelle_44 (A4), NorthStar_43 (A4), NotAPhaseMom_44 (A4), Nyxis_44 (A4), OKaNui_44 (A4), Obama12_45 (A4), Ohfah_45 (A4), Palestino_43 (A4), Peaches_44 (A4), Perplexer_43 (A4), PeterPeter_44 (A4), PetiteSangsue_43 (A4), Phacado_44 (A4), Phelipe_45 (A4), Phighter1804_44 (A4), Phontbonne_44 (A4), Pipcraft_42 (A4), Polymorphads_45 (A4), Pumbaa_44 (A4), Relief_43 (A4), Romney_44 (A4), Roosevelt_43 (A4), Rosa24_43 (A4), Ruin_44 (A4), Sabertooth_44 (A4), Scamp_44 (A4), SenorClean_42 (A4), Shaka_44 (A4), SheldonCooper_46 (A4), Shygu2_43 (A4), Skipitt_43 (A4), Sparxx_45 (A4), Spino_43 (A4), Stasia_43 (A4), Stink_44 (A4), Taquarus_44 (A4), Thanksgivukkah_43 (A4), TinaFeyge_44 (A4), Tinybot_43 (A4), TiroTheta9_44 (A4), TroyPia_45 (A4), TygerBlood_44 (A4), Ulysses_43 (A4), Wander_44 (A4), Wilbur_44 (A4), Wile_43 (A4), Wizard007_44 (A4), Xena_42 (A4), YoSam321_44 (A4),

Summary by clusters:

There is one cluster represented in this pham: A4

Info for manual annotations of cluster A4:

- Start number 4 was manually annotated 137 times for cluster A4.

Gene Information:

Gene: AbbysRanger_43 Start: 29686, Stop: 29516, Start Num: 4

Candidate Starts for AbbysRanger_43:

(3, 29737), (Start: 4 @29686 has 137 MA's), (6, 29668), (7, 29659), (11, 29554), (13, 29527),

Gene: Abdiel_44 Start: 29724, Stop: 29554, Start Num: 4

Candidate Starts for Abdiel_44:

(1, 29964), (2, 29862), (3, 29775), (Start: 4 @29724 has 137 MA's), (11, 29589), (12, 29577),

Gene: Achebe_42 Start: 29669, Stop: 29499, Start Num: 4

Candidate Starts for Achebe_42:

(3, 29720), (Start: 4 @29669 has 137 MA's), (6, 29651), (7, 29642), (11, 29537), (13, 29510),

Gene: Albee_44 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Albee_44:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Alberto7_45 Start: 30060, Stop: 29893, Start Num: 4

Candidate Starts for Alberto7_45:

(3, 30111), (Start: 4 @30060 has 137 MA's), (10, 29964), (11, 29931), (13, 29904),

Gene: Annyong_44 Start: 29768, Stop: 29601, Start Num: 4

Candidate Starts for Annyong_44:

(1, 30008), (2, 29906), (3, 29819), (Start: 4 @29768 has 137 MA's), (10, 29672), (11, 29639), (13, 29612),

Gene: Arturo_43 Start: 29979, Stop: 29809, Start Num: 4

Candidate Starts for Arturo_43:

(1, 30219), (2, 30117), (3, 30030), (Start: 4 @29979 has 137 MA's), (7, 29952), (11, 29847), (13, 29820),

Gene: AvatarAhPeg_43 Start: 30198, Stop: 30028, Start Num: 4

Candidate Starts for AvatarAhPeg_43:

(3, 30249), (Start: 4 @30198 has 137 MA's), (7, 30171), (11, 30066), (13, 30039),

Gene: Avle17_44 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for Avle17_44:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: Baby16_44 Start: 29734, Stop: 29564, Start Num: 4

Candidate Starts for Baby16_44:

(1, 29974), (2, 29872), (3, 29785), (Start: 4 @29734 has 137 MA's), (11, 29599), (12, 29587),

Gene: Backyardigan_42 Start: 29702, Stop: 29532, Start Num: 4

Candidate Starts for Backyardigan_42:

(3, 29753), (Start: 4 @29702 has 137 MA's), (6, 29684), (7, 29675), (11, 29570), (13, 29543),

Gene: Badger_42 Start: 29670, Stop: 29500, Start Num: 4

Candidate Starts for Badger_42:

(3, 29721), (Start: 4 @29670 has 137 MA's), (6, 29652), (7, 29643), (11, 29538), (13, 29511),

Gene: BangNhom_45 Start: 30145, Stop: 29975, Start Num: 4

Candidate Starts for BangNhom_45:

(3, 30196), (Start: 4 @30145 has 137 MA's), (7, 30118), (11, 30013), (13, 29986),

Gene: Bartimeaus_44 Start: 29725, Stop: 29555, Start Num: 4

Candidate Starts for Bartimeaus_44:

(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (12, 29578),

Gene: BellusTerra_45 Start: 29724, Stop: 29554, Start Num: 4

Candidate Starts for BellusTerra_45:

(1, 29964), (2, 29862), (3, 29775), (Start: 4 @29724 has 137 MA's), (11, 29589), (12, 29577),

Gene: Blackmoor_44 Start: 29725, Stop: 29555, Start Num: 4
Candidate Starts for Blackmoor_44:
(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (12, 29578),

Gene: Bombshell_44 Start: 29720, Stop: 29553, Start Num: 4
Candidate Starts for Bombshell_44:
(2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: Broseidon_44 Start: 29725, Stop: 29555, Start Num: 4
Candidate Starts for Broseidon_44:
(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (12, 29578),

Gene: Bruiser_43 Start: 29723, Stop: 29553, Start Num: 4
Candidate Starts for Bruiser_43:
(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: BubbleTrouble_43 Start: 29723, Stop: 29553, Start Num: 4
Candidate Starts for BubbleTrouble_43:
(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Bumblebee11_42 Start: 29672, Stop: 29502, Start Num: 4
Candidate Starts for Bumblebee11_42:
(3, 29723), (Start: 4 @29672 has 137 MA's), (6, 29654), (7, 29645), (11, 29540), (13, 29513),

Gene: Burger_42 Start: 29723, Stop: 29553, Start Num: 4
Candidate Starts for Burger_42:
(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Caelakin_44 Start: 29723, Stop: 29553, Start Num: 4
Candidate Starts for Caelakin_44:
(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Camperdownii_42 Start: 29396, Stop: 29226, Start Num: 4
Candidate Starts for Camperdownii_42:
(1, 29636), (2, 29534), (3, 29447), (Start: 4 @29396 has 137 MA's), (11, 29261), (12, 29249),

Gene: CentreCat_44 Start: 29726, Stop: 29556, Start Num: 4
Candidate Starts for CentreCat_44:
(1, 29966), (2, 29864), (3, 29777), (Start: 4 @29726 has 137 MA's), (11, 29591), (12, 29579),

Gene: Cerulean_45 Start: 30146, Stop: 29976, Start Num: 4
Candidate Starts for Cerulean_45:
(3, 30197), (Start: 4 @30146 has 137 MA's), (7, 30119), (11, 30014), (13, 29987),

Gene: ChampagnePapi_46 Start: 30145, Stop: 29975, Start Num: 4
Candidate Starts for ChampagnePapi_46:
(3, 30196), (Start: 4 @30145 has 137 MA's), (7, 30118), (11, 30013), (13, 29986),

Gene: Chaph_44 Start: 29734, Stop: 29564, Start Num: 4
Candidate Starts for Chaph_44:
(1, 29974), (2, 29872), (3, 29785), (Start: 4 @29734 has 137 MA's), (11, 29599), (12, 29587),

Gene: Cici_43 Start: 29687, Stop: 29517, Start Num: 4

Candidate Starts for Cici_43:

(3, 29738), (Start: 4 @29687 has 137 MA's), (6, 29669), (7, 29660), (11, 29555), (13, 29528),

Gene: Cindaradix_41 Start: 29312, Stop: 29142, Start Num: 4

Candidate Starts for Cindaradix_41:

(1, 29552), (2, 29450), (3, 29363), (Start: 4 @29312 has 137 MA's), (6, 29294), (7, 29285), (11, 29180), (13, 29153),

Gene: Cintron_43 Start: 29703, Stop: 29536, Start Num: 4

Candidate Starts for Cintron_43:

(1, 29943), (2, 29841), (3, 29754), (Start: 4 @29703 has 137 MA's), (10, 29607), (11, 29574), (13, 29547),

Gene: Citius_44 Start: 29744, Stop: 29574, Start Num: 4

Candidate Starts for Citius_44:

(1, 29984), (2, 29882), (3, 29795), (Start: 4 @29744 has 137 MA's), (11, 29609), (12, 29597),

Gene: Clarenza_43 Start: 29720, Stop: 29550, Start Num: 4

Candidate Starts for Clarenza_43:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (11, 29585), (12, 29573),

Gene: Cocoaberry_44 Start: 29727, Stop: 29557, Start Num: 4

Candidate Starts for Cocoaberry_44:

(1, 29967), (2, 29865), (3, 29778), (Start: 4 @29727 has 137 MA's), (11, 29592), (12, 29580),

Gene: Commander_44 Start: 29722, Stop: 29552, Start Num: 4

Candidate Starts for Commander_44:

(1, 29962), (2, 29860), (3, 29773), (Start: 4 @29722 has 137 MA's), (11, 29587), (12, 29575),

Gene: Connomayer_44 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Connomayer_44:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Datway_43 Start: 29658, Stop: 29488, Start Num: 4

Candidate Starts for Datway_43:

(3, 29709), (Start: 4 @29658 has 137 MA's), (6, 29640), (7, 29631), (11, 29526), (13, 29499),

Gene: Deano_43 Start: 29731, Stop: 29561, Start Num: 4

Candidate Starts for Deano_43:

(1, 29971), (2, 29869), (3, 29782), (Start: 4 @29731 has 137 MA's), (11, 29596), (12, 29584),

Gene: Dhanush_44 Start: 29726, Stop: 29556, Start Num: 4

Candidate Starts for Dhanush_44:

(1, 29966), (2, 29864), (3, 29777), (Start: 4 @29726 has 137 MA's), (11, 29591), (12, 29579),

Gene: DirtyDunning_43 Start: 29720, Stop: 29550, Start Num: 4

Candidate Starts for DirtyDunning_43:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (11, 29588), (13, 29561),

Gene: Druantia_44 Start: 29726, Stop: 29556, Start Num: 4

Candidate Starts for Druantia_44:

(1, 29966), (2, 29864), (3, 29777), (Start: 4 @29726 has 137 MA's), (11, 29591), (12, 29579),

Gene: Eagle_44 Start: 29748, Stop: 29578, Start Num: 4

Candidate Starts for Eagle_44:

(1, 29988), (2, 29886), (3, 29799), (Start: 4 @29748 has 137 MA's), (11, 29613), (12, 29601),

Gene: Eapen_44 Start: 29718, Stop: 29551, Start Num: 4

Candidate Starts for Eapen_44:

(1, 29958), (2, 29856), (3, 29769), (Start: 4 @29718 has 137 MA's), (7, 29691), (10, 29622), (11, 29589), (13, 29562),

Gene: Eris_43 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Eris_43:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Eros_44 Start: 29725, Stop: 29555, Start Num: 4

Candidate Starts for Eros_44:

(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (12, 29578),

Gene: Eurydice_45 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for Eurydice_45:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (10, 29624), (11, 29591), (13, 29564),

Gene: Florean_44 Start: 29722, Stop: 29552, Start Num: 4

Candidate Starts for Florean_44:

(1, 29962), (2, 29860), (3, 29773), (Start: 4 @29722 has 137 MA's), (11, 29587), (12, 29575),

Gene: Flux_44 Start: 29722, Stop: 29555, Start Num: 4

Candidate Starts for Flux_44:

(1, 29962), (2, 29860), (3, 29773), (Start: 4 @29722 has 137 MA's), (10, 29626), (11, 29593), (13, 29566),

Gene: Funston_43 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Funston_43:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Gadost_44 Start: 29727, Stop: 29557, Start Num: 4

Candidate Starts for Gadost_44:

(1, 29967), (2, 29865), (3, 29778), (Start: 4 @29727 has 137 MA's), (11, 29592), (12, 29580),

Gene: HamSlice_43 Start: 29721, Stop: 29551, Start Num: 4

Candidate Starts for HamSlice_43:

(1, 29961), (2, 29859), (3, 29772), (Start: 4 @29721 has 137 MA's), (11, 29586), (12, 29574),

Gene: Happiness_43 Start: 29728, Stop: 29558, Start Num: 4

Candidate Starts for Happiness_43:

(1, 29968), (2, 29866), (3, 29779), (Start: 4 @29728 has 137 MA's), (7, 29701), (11, 29596), (13, 29569),

Gene: Holli_43 Start: 29513, Stop: 29343, Start Num: 4

Candidate Starts for Holli_43:

(1, 29753), (2, 29651), (3, 29564), (Start: 4 @29513 has 137 MA's), (11, 29378), (12, 29366),

Gene: Houdini22_44 Start: 29727, Stop: 29557, Start Num: 4

Candidate Starts for Houdini22_44:

(1, 29967), (2, 29865), (3, 29778), (Start: 4 @29727 has 137 MA's), (11, 29592), (12, 29580),

Gene: Huxley_44 Start: 29784, Stop: 29614, Start Num: 4

Candidate Starts for Huxley_44:

(1, 30024), (2, 29922), (3, 29835), (Start: 4 @29784 has 137 MA's), (11, 29649), (12, 29637),

Gene: ICleared_44 Start: 29752, Stop: 29585, Start Num: 4

Candidate Starts for ICleared_44:

(1, 29992), (2, 29890), (3, 29803), (Start: 4 @29752 has 137 MA's), (10, 29656), (11, 29623), (13, 29596),

Gene: Iceman_44 Start: 30009, Stop: 29842, Start Num: 4

Candidate Starts for Iceman_44:

(1, 30249), (2, 30147), (3, 30060), (Start: 4 @30009 has 137 MA's), (7, 29982), (10, 29913), (11, 29880), (13, 29853),

Gene: Iracema64_45 Start: 29987, Stop: 29817, Start Num: 4

Candidate Starts for Iracema64_45:

(3, 30038), (Start: 4 @29987 has 137 MA's), (7, 29960), (11, 29855), (13, 29828),

Gene: Jaykayelowell_42 Start: 29716, Stop: 29549, Start Num: 4

Candidate Starts for Jaykayelowell_42:

(1, 29956), (2, 29854), (3, 29767), (Start: 4 @29716 has 137 MA's), (7, 29689), (10, 29620), (11, 29587), (13, 29560),

Gene: JetBlade_44 Start: 29717, Stop: 29550, Start Num: 4

Candidate Starts for JetBlade_44:

(1, 29957), (2, 29855), (3, 29768), (Start: 4 @29717 has 137 MA's), (7, 29690), (10, 29621), (11, 29588), (13, 29561),

Gene: JoongJeon_43 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for JoongJeon_43:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: KFPoly_43 Start: 29717, Stop: 29550, Start Num: 4

Candidate Starts for KFPoly_43:

(1, 29957), (2, 29855), (3, 29768), (Start: 4 @29717 has 137 MA's), (7, 29690), (10, 29621), (11, 29588), (13, 29561),

Gene: Kampy_44 Start: 29725, Stop: 29555, Start Num: 4

Candidate Starts for Kampy_44:

(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (12, 29578),

Gene: Katalie136_43 Start: 29672, Stop: 29502, Start Num: 4

Candidate Starts for Katalie136_43:

(3, 29723), (Start: 4 @29672 has 137 MA's), (6, 29654), (7, 29645), (11, 29540), (13, 29513),

Gene: Kingmustik0402_44 Start: 29712, Stop: 29545, Start Num: 4

Candidate Starts for Kingmustik0402_44:

(1, 29952), (2, 29850), (3, 29763), (Start: 4 @29712 has 137 MA's), (7, 29685), (10, 29616), (11, 29583), (13, 29556),

Gene: Koan_42 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Koan_42:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Koreni_43 Start: 29404, Stop: 29234, Start Num: 4

Candidate Starts for Koreni_43:

(1, 29644), (2, 29542), (3, 29455), (Start: 4 @29404 has 137 MA's), (11, 29269), (12, 29257),

Gene: Kratark_44 Start: 29862, Stop: 29692, Start Num: 4

Candidate Starts for Kratark_44:

(1, 30102), (2, 30000), (3, 29913), (Start: 4 @29862 has 137 MA's), (7, 29835), (11, 29730), (13, 29703),

Gene: Kremtemulon_44 Start: 29674, Stop: 29507, Start Num: 4

Candidate Starts for Kremtemulon_44:

(1, 29914), (2, 29812), (3, 29725), (Start: 4 @29674 has 137 MA's), (7, 29647), (10, 29578), (11, 29545), (13, 29518),

Gene: Kyee_44 Start: 29721, Stop: 29551, Start Num: 4

Candidate Starts for Kyee_44:

(1, 29961), (2, 29859), (3, 29772), (Start: 4 @29721 has 137 MA's), (11, 29586), (12, 29574),

Gene: LHTSCC_46 Start: 30145, Stop: 29975, Start Num: 4

Candidate Starts for LHTSCC_46:

(3, 30196), (Start: 4 @30145 has 137 MA's), (7, 30118), (11, 30013), (13, 29986),

Gene: LappelDuVide_44 Start: 29722, Stop: 29552, Start Num: 4

Candidate Starts for LappelDuVide_44:

(1, 29962), (2, 29860), (3, 29773), (Start: 4 @29722 has 137 MA's), (11, 29587), (12, 29575),

Gene: Lemur_44 Start: 29720, Stop: 29550, Start Num: 4

Candidate Starts for Lemur_44:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (11, 29585), (12, 29573),

Gene: LeoAvram_44 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for LeoAvram_44:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: LittleB_44 Start: 29724, Stop: 29554, Start Num: 4

Candidate Starts for LittleB_44:

(1, 29964), (2, 29862), (3, 29775), (Start: 4 @29724 has 137 MA's), (11, 29589), (12, 29577),

Gene: LittleGuy_44 Start: 29619, Stop: 29452, Start Num: 4

Candidate Starts for LittleGuy_44:

(1, 29859), (2, 29757), (3, 29670), (Start: 4 @29619 has 137 MA's), (7, 29592), (10, 29523), (11, 29490), (13, 29463),

Gene: LochMonster_45 Start: 29959, Stop: 29789, Start Num: 4

Candidate Starts for LochMonster_45:

(1, 30199), (2, 30097), (3, 30010), (Start: 4 @29959 has 137 MA's), (11, 29824), (12, 29812),

Gene: Lorenzo_44 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Lorenzo_44:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Lunsford_45 Start: 29717, Stop: 29550, Start Num: 4

Candidate Starts for Lunsford_45:

(1, 29957), (2, 29855), (3, 29768), (Start: 4 @29717 has 137 MA's), (7, 29690), (10, 29621), (11, 29588), (13, 29561),

Gene: Maverick_44 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Maverick_44:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Maxo_45 Start: 29725, Stop: 29555, Start Num: 4

Candidate Starts for Maxo_45:

(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (12, 29578),

Gene: Mayonnaise_44 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Mayonnaise_44:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Mazhar510_44 Start: 29724, Stop: 29554, Start Num: 4

Candidate Starts for Mazhar510_44:

(1, 29964), (2, 29862), (3, 29775), (Start: 4 @29724 has 137 MA's), (11, 29589), (12, 29577),

Gene: Medusa_44 Start: 29722, Stop: 29552, Start Num: 4

Candidate Starts for Medusa_44:

(1, 29962), (2, 29860), (3, 29773), (Start: 4 @29722 has 137 MA's), (11, 29587), (12, 29575),

Gene: MeeZee_44 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for MeeZee_44:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (10, 29624), (11, 29591), (13, 29564),

Gene: Melvin_46 Start: 29718, Stop: 29551, Start Num: 4

Candidate Starts for Melvin_46:

(1, 29958), (2, 29856), (3, 29769), (Start: 4 @29718 has 137 MA's), (10, 29622), (11, 29589), (13, 29562),

Gene: Millski_43 Start: 29724, Stop: 29557, Start Num: 4

Candidate Starts for Millski_43:

(1, 29964), (2, 29862), (3, 29775), (Start: 4 @29724 has 137 MA's), (10, 29628), (11, 29595), (13, 29568),

Gene: Miramae_43 Start: 29860, Stop: 29690, Start Num: 4

Candidate Starts for Miramae_43:

(3, 29911), (Start: 4 @29860 has 137 MA's), (7, 29833), (11, 29728), (13, 29701),

Gene: Morpher26_43 Start: 29693, Stop: 29523, Start Num: 4

Candidate Starts for Morpher26_43:

(3, 29744), (Start: 4 @29693 has 137 MA's), (6, 29675), (7, 29666), (11, 29561), (13, 29534),

Gene: Morrow_45 Start: 29729, Stop: 29559, Start Num: 4

Candidate Starts for Morrow_45:

(1, 29969), (2, 29867), (3, 29780), (Start: 4 @29729 has 137 MA's), (11, 29594), (12, 29582),

Gene: Mundrea_43 Start: 29680, Stop: 29510, Start Num: 4

Candidate Starts for Mundrea_43:

(3, 29731), (Start: 4 @29680 has 137 MA's), (6, 29662), (7, 29653), (11, 29548), (13, 29521),

Gene: Nebs_45 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Nebs_45:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Nemo27_44 Start: 29722, Stop: 29552, Start Num: 4

Candidate Starts for Nemo27_44:

(1, 29962), (2, 29860), (3, 29773), (Start: 4 @29722 has 137 MA's), (11, 29587), (12, 29575),

Gene: Noelle_44 Start: 29982, Stop: 29815, Start Num: 4

Candidate Starts for Noelle_44:

(3, 30033), (Start: 4 @29982 has 137 MA's), (7, 29955), (8, 29901), (11, 29853), (13, 29826),

Gene: NorthStar_43 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for NorthStar_43:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: NotAPhaseMom_44 Start: 29727, Stop: 29557, Start Num: 4

Candidate Starts for NotAPhaseMom_44:

(1, 29967), (2, 29865), (3, 29778), (Start: 4 @29727 has 137 MA's), (11, 29592), (12, 29580),

Gene: Nyxis_44 Start: 29613, Stop: 29446, Start Num: 4

Candidate Starts for Nyxis_44:

(1, 29853), (2, 29751), (3, 29664), (Start: 4 @29613 has 137 MA's), (9, 29523), (11, 29484), (12, 29472), (13, 29457),

Gene: OKaNui_44 Start: 29773, Stop: 29606, Start Num: 4

Candidate Starts for OKaNui_44:

(1, 30013), (2, 29911), (3, 29824), (Start: 4 @29773 has 137 MA's), (10, 29677), (11, 29644), (13, 29617),

Gene: Obama12_45 Start: 30147, Stop: 29977, Start Num: 4

Candidate Starts for Obama12_45:

(3, 30198), (Start: 4 @30147 has 137 MA's), (7, 30120), (11, 30015), (13, 29988),

Gene: Ohfah_45 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Ohfah_45:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Palestino_43 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for Palestino_43:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (5, 29705), (10, 29624), (11, 29591), (13, 29564),

Gene: Peaches_44 Start: 29722, Stop: 29552, Start Num: 4

Candidate Starts for Peaches_44:

(1, 29962), (2, 29860), (3, 29773), (Start: 4 @29722 has 137 MA's), (11, 29587), (12, 29575),

Gene: Perplexer_43 Start: 29669, Stop: 29499, Start Num: 4

Candidate Starts for Perplexer_43:

(3, 29720), (Start: 4 @29669 has 137 MA's), (6, 29651), (7, 29642), (11, 29537), (13, 29510),

Gene: PeterPeter_44 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for PeterPeter_44:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: PetiteSangsue_43 Start: 29672, Stop: 29502, Start Num: 4

Candidate Starts for PetiteSangsue_43:

(3, 29723), (Start: 4 @29672 has 137 MA's), (6, 29654), (7, 29645), (11, 29540), (13, 29513),

Gene: Phacado_44 Start: 29722, Stop: 29552, Start Num: 4

Candidate Starts for Phacado_44:

(1, 29962), (2, 29860), (3, 29773), (Start: 4 @29722 has 137 MA's), (11, 29587), (12, 29575),

Gene: Phelipe_45 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Phelipe_45:

(2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Phighter1804_44 Start: 29765, Stop: 29595, Start Num: 4

Candidate Starts for Phighter1804_44:

(3, 29816), (Start: 4 @29765 has 137 MA's), (11, 29630), (12, 29618),

Gene: Phontbonne_44 Start: 29614, Stop: 29447, Start Num: 4

Candidate Starts for Phontbonne_44:

(1, 29854), (2, 29752), (3, 29665), (Start: 4 @29614 has 137 MA's), (7, 29587), (10, 29518), (11, 29485), (13, 29458),

Gene: Pipcraft_42 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Pipcraft_42:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Polymorphads_45 Start: 29716, Stop: 29546, Start Num: 4

Candidate Starts for Polymorphads_45:

(1, 29956), (2, 29854), (3, 29767), (Start: 4 @29716 has 137 MA's), (11, 29581), (12, 29569),

Gene: Pumbaa_44 Start: 29665, Stop: 29498, Start Num: 4

Candidate Starts for Pumbaa_44:

(1, 29905), (2, 29803), (3, 29716), (Start: 4 @29665 has 137 MA's), (10, 29569), (11, 29536), (13, 29509),

Gene: Relief_43 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for Relief_43:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: Romney_44 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for Romney_44:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: Roosevelt_43 Start: 29725, Stop: 29555, Start Num: 4

Candidate Starts for Roosevelt_43:

(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (12, 29578),

Gene: Rosa24_43 Start: 29754, Stop: 29587, Start Num: 4

Candidate Starts for Rosa24_43:

(1, 29994), (2, 29892), (3, 29805), (Start: 4 @29754 has 137 MA's), (10, 29658), (11, 29625), (13, 29598),

Gene: Ruin_44 Start: 29716, Stop: 29549, Start Num: 4

Candidate Starts for Ruin_44:

(1, 29956), (2, 29854), (3, 29767), (Start: 4 @29716 has 137 MA's), (5, 29701), (10, 29620), (11, 29587), (13, 29560),

Gene: Sabertooth_44 Start: 29725, Stop: 29552, Start Num: 4

Candidate Starts for Sabertooth_44:

(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (13, 29563),

Gene: Scamp_44 Start: 29725, Stop: 29555, Start Num: 4

Candidate Starts for Scamp_44:

(1, 29965), (2, 29863), (3, 29776), (Start: 4 @29725 has 137 MA's), (11, 29590), (12, 29578),

Gene: SenorClean_42 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for SenorClean_42:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Shaka_44 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for Shaka_44:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: SheldonCooper_46 Start: 30146, Stop: 29976, Start Num: 4

Candidate Starts for SheldonCooper_46:

(3, 30197), (Start: 4 @30146 has 137 MA's), (7, 30119), (11, 30014), (13, 29987),

Gene: Shygu2_43 Start: 29672, Stop: 29505, Start Num: 4

Candidate Starts for Shygu2_43:

(3, 29723), (Start: 4 @29672 has 137 MA's), (7, 29645), (9, 29582), (11, 29543), (13, 29516),

Gene: Skipitt_43 Start: 29717, Stop: 29550, Start Num: 4

Candidate Starts for Skipitt_43:

(1, 29957), (2, 29855), (3, 29768), (Start: 4 @29717 has 137 MA's), (10, 29621), (11, 29588), (13, 29561),

Gene: Sparxx_45 Start: 29718, Stop: 29548, Start Num: 4

Candidate Starts for Sparxx_45:

(1, 29958), (2, 29856), (3, 29769), (Start: 4 @29718 has 137 MA's), (11, 29583), (12, 29571),

Gene: Spino_43 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for Spino_43:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Stasia_43 Start: 29592, Stop: 29422, Start Num: 4

Candidate Starts for Stasia_43:

(3, 29643), (Start: 4 @29592 has 137 MA's), (5, 29577), (11, 29457), (12, 29445),

Gene: Stink_44 Start: 30140, Stop: 29970, Start Num: 4

Candidate Starts for Stink_44:

(3, 30191), (Start: 4 @30140 has 137 MA's), (7, 30113), (11, 30008), (13, 29981),

Gene: Taquarus_44 Start: 29726, Stop: 29556, Start Num: 4

Candidate Starts for Taquarus_44:

(1, 29966), (2, 29864), (3, 29777), (Start: 4 @29726 has 137 MA's), (11, 29591), (12, 29579),

Gene: Thanksgivukkah_43 Start: 29721, Stop: 29554, Start Num: 4

Candidate Starts for Thanksgivukkah_43:

(1, 29961), (2, 29859), (3, 29772), (Start: 4 @29721 has 137 MA's), (10, 29625), (11, 29592), (13, 29565),

Gene: TinaFeyge_44 Start: 29718, Stop: 29548, Start Num: 4

Candidate Starts for TinaFeyge_44:

(1, 29958), (2, 29856), (3, 29769), (Start: 4 @29718 has 137 MA's), (11, 29583), (12, 29571),

Gene: Tinybot_43 Start: 29750, Stop: 29583, Start Num: 4

Candidate Starts for Tinybot_43:

(1, 29990), (2, 29888), (3, 29801), (Start: 4 @29750 has 137 MA's), (10, 29654), (11, 29621), (13, 29594),

Gene: TiroTheta9_44 Start: 29717, Stop: 29550, Start Num: 4

Candidate Starts for TiroTheta9_44:

(2, 29855), (3, 29768), (Start: 4 @29717 has 137 MA's), (10, 29621), (11, 29588), (13, 29561),

Gene: TroyPia_45 Start: 29721, Stop: 29551, Start Num: 4

Candidate Starts for TroyPia_45:

(1, 29961), (2, 29859), (3, 29772), (Start: 4 @29721 has 137 MA's), (11, 29586), (12, 29574),

Gene: TygerBlood_44 Start: 29723, Stop: 29553, Start Num: 4

Candidate Starts for TygerBlood_44:

(1, 29963), (2, 29861), (3, 29774), (Start: 4 @29723 has 137 MA's), (11, 29588), (12, 29576),

Gene: Ulysses_43 Start: 29400, Stop: 29233, Start Num: 4

Candidate Starts for Ulysses_43:

(3, 29451), (Start: 4 @29400 has 137 MA's), (10, 29304), (11, 29271), (13, 29244),

Gene: Wander_44 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for Wander_44:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: Wilbur_44 Start: 29720, Stop: 29553, Start Num: 4

Candidate Starts for Wilbur_44:

(1, 29960), (2, 29858), (3, 29771), (Start: 4 @29720 has 137 MA's), (7, 29693), (10, 29624), (11, 29591), (13, 29564),

Gene: Wile_43 Start: 29703, Stop: 29533, Start Num: 4

Candidate Starts for Wile_43:

(3, 29754), (Start: 4 @29703 has 137 MA's), (6, 29685), (7, 29676), (11, 29571), (13, 29544),

Gene: Wizard007_44 Start: 29728, Stop: 29558, Start Num: 4

Candidate Starts for Wizard007_44:

(1, 29968), (2, 29866), (3, 29779), (Start: 4 @29728 has 137 MA's), (11, 29593), (12, 29581),

Gene: Xena_42 Start: 29669, Stop: 29499, Start Num: 4

Candidate Starts for Xena_42:

(3, 29720), (Start: 4 @29669 has 137 MA's), (6, 29651), (7, 29642), (11, 29537), (13, 29510),

Gene: YoSam321_44 Start: 29717, Stop: 29550, Start Num: 4

Candidate Starts for YoSam321_44:

(1, 29957), (2, 29855), (3, 29768), (Start: 4 @29717 has 137 MA's), (10, 29621), (11, 29588), (13, 29561),