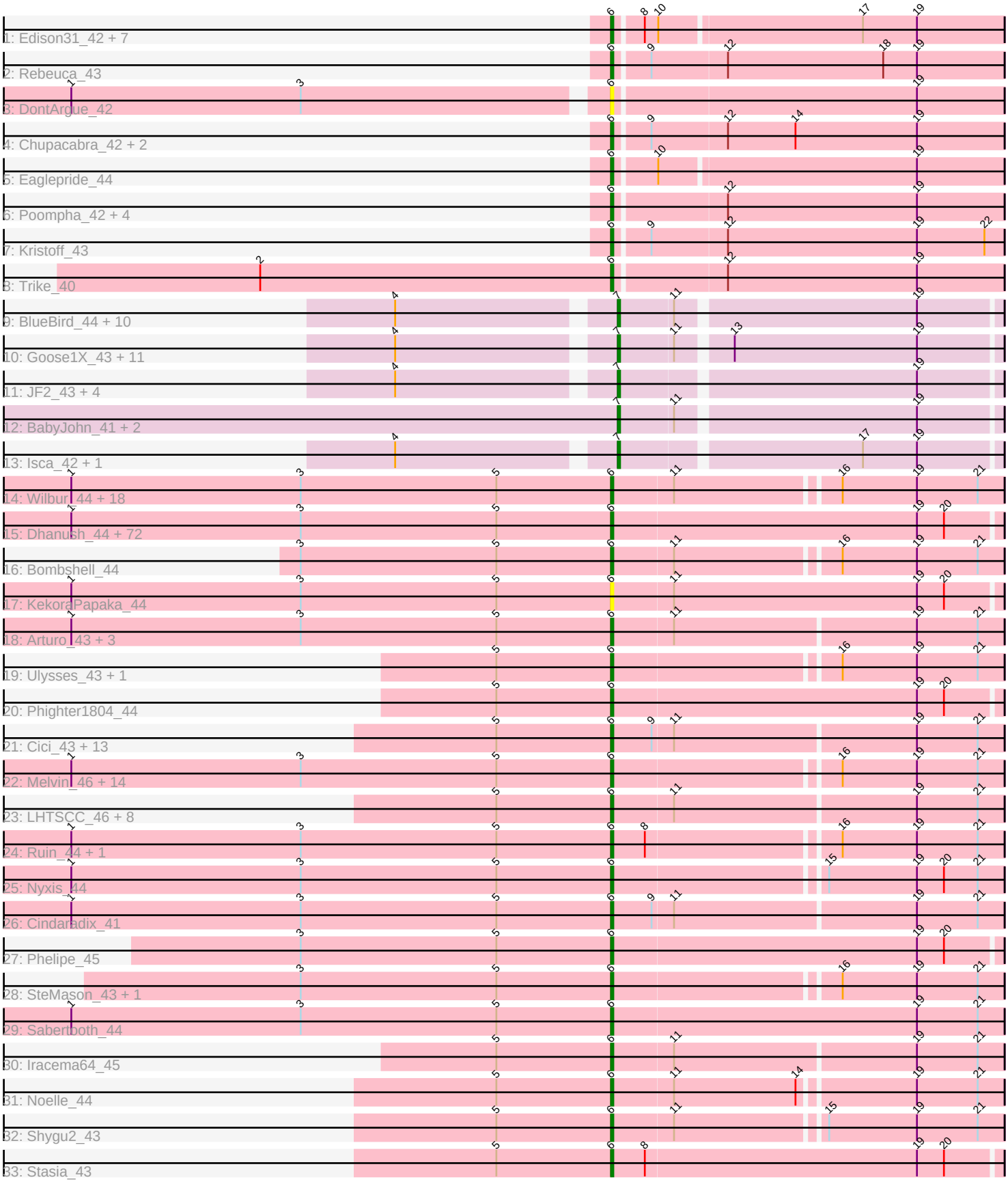
Pham 347267


1: Edison31_42 + 7
2: Rebeuca_43
3: DontArgue_42
4: Chupacabra_42 + 2
5: Eaglepride_44
6: Poompha_42 + 4
7: Kristoff_43
8: Trike_40
9: BlueBird_44 + 10
10: Goose1X_43 + 11
11: JF2_43 + 4
12: BabyJohn_41 + 2
13: Isca_42 + 1
14: Wilbur_44 + 18
15: Dhanush_44 + 72
16: Bombshell_44
17: KekoraPapaka_44
18: Arturo_43 + 3
19: Ulysses_43 + 1
20: Phighter1804_44
21: Cici_43 + 13
22: Melvin_46 + 14
23: LHTSCC_46 + 8
24: Ruin_44 + 1
25: Nyxis_44
26: Cindaradix_41
27: Phelipe_45
28: SteMason_43 + 1
29: Sabertooth_44
30: Iracema64_45
31: Noelle_44
32: Shygu2_43
33: Stasia_43

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 347267 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347267 has 205 members, 21 are drafts.

Phages represented in each track:
• Track 1 : Edison31_42, DustyMartin_47, Topanga_41, RhynO_44, Shapes_47, WalterMcMickey_41, Rowdy_47, Twister_41
• Track 2 : Rebeuca_43
• Track 3 : DontArgue_42
• Track 4 : Chupacabra_42, OKCentral2016_42, Goose_43
• Track 5 : Eaglepride_44
• Track 6 : Poompha_42, PeaceMeal1_41, Severus_41, Drake94_41, KittenMittens_40
• Track 7 : Kristoff_43
• Track 8 : Trike_40
• Track 9 : BlueBird_44, Giroux_44, Bugatti_44, Idleandcovert_43, SaturnRing_43, Cat_41, BabyRay_43, Clammy_44, Pistachio_44, Puppy_44, TNguyen7_43
• Track 10 : Goose1X_43, Zarafa_43, Heathen_43, Fred313_43, Kachowdy_43, Marchesa_43, Roimos_43, DropBear_43, Shep_43, Scout_43, HelDan_43, Goose1D_37
• Track 11 : JF2_43, Phantastic_43, MK4_43, JF4_43, B1_40
• Track 12 : BabyJohn_41, MA5_43, Chiqui_41
• Track 13 : Isca_42, Rockstar_43
• Track 14 : Wilbur_44, Avle17_44, Relief_43, Jaykayelowell_42, JoongJeon_43, Eapen_44, Kremtemulon_44, KFPoly_43, Wander_44, Romney_44, JetBlade_44, Lunsford_45, Iceman_44, LittleGuy_44, Shaka_44, Kingmustik0402_44, Skadoosh_45, Phontbonne_44, PeterPeter_44
• Track 15 : Dhanush_44, Pipcraft_42, Albee_44, Nebs_45, Rocksand_44, NotAPhaseMom_44, Sultana_44, Chaph_44, CentreCat_44, Mayonnaise_43, Mazhar510_44, Phacado_44, TygerBlood_44, HamSlice_43, Lemur_44, TroyPia_45, Burger_42, RockieBear_44, LittleB_44, SenorClean_44, Morrow_45, BellusTerra_45, Medusa_44, Bruiser_43, Caelakin_44, BubbleTrouble_43, Connomayer_44, Blackmoor_44, Scamp_44, Clarenza_43, Wizard007_44, Camperdownii_42, LeoAvram_44, Houdini22_44, Funston_43, Bartimeaus_44, Ohfah_45, Druantia_44, Koan_42, Eagle_44, Peaches_44, Junimo_43, NorthStar_43, Eros_44, Holli_43, Deano_43, Maxo_45, Citius_44, Baby16_44, LappelDuVide_44, Huxley_43, LochMonster_45, Sparxx_45, Eris_43, Maverick_44, Kyee_44, TinaFeyge_44, Kampy_44, Gadost_44, Nemo27_44, Abdiel_44, Broseidon_44, Commander_44, Koreni_43, Lorenzo_44, Polymorphads_45, Buckaroo_43, Florean_44, Cocoaberry_44, Roosevelt_43, Northrop_44, Taquarus_44, Spino_43
• Track 16 : Bombshell_44
• Track 17 : KekoraPapaka_44

• Track 18 : Arturo_43, DirtyDunning_43, Happiness_43, Kratark_44
• Track 19 : Ulysses_43, Alberto7_45
• Track 20 : Phighter1804_44
• Track 21 : Cici_43, Backyardigan_42, Xena_42, Datway_43, Bumblebee11_42, AbbysRanger_43, Mundrea_43, Morpher26_43, Achebe_42, Wile_43, Badger_42, PetiteSangsue_43, Katalie136_43, Perplexer_43
• Track 22 : Melvin_46, Rosa24_43, Millski_43, Cintron_43, Eurydice_45, Annyong_44, MeeZee_44, Tinybot_43, Flux_44, Thanksgivukkah_43, OKaNui_44, ICleared_44, Pumbaa_44, YoSam321_44, Skipitt_43
• Track 23 : LHTSCC_46, Stink_44, BangNhom_45, Cerulean_45, Obama12_45, AvatarAhPeg_43, SheldonCooper_46, ChampagnePapi_46, Miramae_43
• Track 24 : Ruin_44, Palestino_43
• Track 25 : Nyxis_44
• Track 26 : Cindaradix_41
• Track 27 : Phelipe_45
• Track 28 : SteMason_43, TiroTheta9_44
• Track 29 : Sabertooth_44
• Track 30 : Iracema64_45
• Track 31 : Noelle_44
• Track 32 : Shygu2_43
• Track 33 : Stasia_43

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

The start number called the most often in the published annotations is 6, it was called in 161 of the 184 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, Buckaroo_43, Bumblebee11_42, Burger_42, Caelakin_44, Camperdownii_42, CentreCat_44, Cerulean_45, ChampagnePapi_46, Chaph_44, Chupacabra_42, Cici_43, Cindaradix_41, Cintron_43, Citius_44, Clarenza_43, Cocoaberry_44, Commander_44, Connomayer_44, Datway_43, Deano_43, Dhanush_44, DirtyDunning_43, DontArgue_42, Drake94_41, Druantia_44, DustyMartin_47, Eagle_44, Eaglepride_44, Eapen_44, Edison31_42, Eris_43, Eros_44, Eurydice_45, Florean_44, Flux_44, Funston_43, Gadost_44, Goose_43, HamSlice_43, Happiness_43, Holli_43, Houdini22_44, Huxley_43, ICleared_44, Iceman_44, Iracema64_45, Jaykayelowell_42, JetBlade_44, JoongJeon_43, Junimo_43, KFPoly_43, Kampy_44, Katalie136_43, KekoraPapaka_44, Kingmustik0402_44, KittenMittens_40, Koan_42, Koreni_43, Kratark_44, Kremtemulon_44, Kristoff_43, 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_43, 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, Northrop_44, NotAPhaseMom_44, Nyxis_44, OKCentral2016_42, OKaNui_44, Obama12_45, Ohfah_45, Palestino_43, PeaceMeal1_41, Peaches_44, Perplexer_43, PeterPeter_44, PetiteSangsue_43,

Phacado_44, Phelipe_45, Phighter1804_44, Phontbonne_44, Pipcraft_42, Polymorphads_45, Poompha_42, Pumbaa_44, Rebeuca_43, Relief_43, RhynO_44, RockieBear_44, Rocksand_44, Romney_44, Roosevelt_43, Rosa24_43, Rowdy_47, Ruin_44, Sabertooth_44, Scamp_44, SenorClean_44, Severus_41, Shaka_44, Shapes_47, SheldonCooper_46, Shygu2_43, Skadoosh_45, Skipitt_43, Sparxx_45, Spino_43, Stasia_43, SteMason_43, Stink_44, Sultana_44, Taquarus_44, Thanksgivukkah_43, TinaFeyge_44, Tinybot_43, TiroTheta9_44, Topanga_41, Trike_40, TroyPia_45, Twister_41, TygerBlood_44, Ulysses_43, WalterMcMickey_41, 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:
• B1_40, BabyJohn_41, BabyRay_43, BlueBird_44, Bugatti_44, Cat_41, Chiqui_41, Clammy_44, DropBear_43, Fred313_43, Giroux_44, Goose1D_37, Goose1X_43, Heathen_43, HelDan_43, Idleandcovert_43, Isca_42, JF2_43, JF4_43, Kachowdy_43, MA5_43, MK4_43, Marchesa_43, Phantastic_43, Pistachio_44, Puppy_44, Rockstar_43, Roimos_43, SaturnRing_43, Scout_43, Shep_43, TNguyen7_43, Zarafa_43,

Summary by start number:

Start 6:
• Found in 172 of 205 (83.9%) of genes in pham
• Manual Annotations of this start: 161 of 184
• 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), Buckaroo_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), Chupacabra_42 (A10), 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), DontArgue_42 (A10), Drake94_41 (A10), Druantia_44 (A4), DustyMartin_47 (A10), Eagle_44 (A4), Eaglepride_44 (A10), Eapen_44 (A4), Edison31_42 (A10), Eris_43 (A4), Eros_44 (A4), Eurydice_45 (A4), Florean_44 (A4), Flux_44 (A4), Funston_43 (A4), Gadost_44 (A4), Goose_43 (A10), HamSlice_43 (A4), Happiness_43 (A4), Holli_43 (A4), Houdini22_44 (A4), Huxley_43 (A4), ICleared_44 (A4), Iceman_44 (A4), Iracema64_45 (A4), Jaykayelowell_42 (A4), JetBlade_44 (A4), JoongJeon_43 (A4), Junimo_43 (A4), KFPoly_43 (A4), Kampy_44 (A4), Katalie136_43 (A4), KekoraPapaka_44 (A4), Kingmustik0402_44 (A4), KittenMittens_40 (A10), Koan_42 (A4), Koreni_43 (A4), Kratark_44 (A4), Kremtemulon_44 (A4), Kristoff_43 (A10), 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_43 (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), Northrop_44 (A4), NotAPhaseMom_44 (A4), Nyxis_44 (A4), OKCentral2016_42 (A10), OKaNui_44 (A4), Obama12_45 (A4), Ohfah_45 (A4), Palestino_43 (A4), PeaceMeal1_41 (A10), 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), Poompha_42 (A10), Pumbaa_44 (A4), Rebeuca_43 (A10), Relief_43 (A4), RhynO_44 (A10), RockieBear_44 (A4), Rocksand_44 (A4), Romney_44 (A4), Roosevelt_43 (A4), Rosa24_43 (A4), Rowdy_47 (A10), Ruin_44 (A4), Sabertooth_44 (A4), Scamp_44 (A4), SenorClean_44 (A4), Severus_41 (A10), Shaka_44 (A4), Shapes_47 (A10), SheldonCooper_46 (A4), Shygu2_43 (A4), Skadoosh_45 (A4), Skipitt_43 (A4), Sparxx_45 (A4), Spino_43 (A4), Stasia_43 (A4), SteMason_43 (A4), Stink_44 (A4), Sultana_44 (A4), Taquarus_44 (A4), Thanksgivukkah_43 (A4), TinaFeyge_44 (A4), Tinybot_43 (A4), TiroTheta9_44 (A4), Topanga_41 (A10), Trike_40 (A10), TroyPia_45 (A4), Twister_41 (A10), TygerBlood_44 (A4), Ulysses_43 (A4), WalterMcMickey_41 (A10), Wander_44 (A4), Wilbur_44 (A4), Wile_43 (A4), Wizard007_44 (A4), Xena_42 (A4), YoSam321_44 (A4),

Start 7:
• Found in 33 of 205 (16.1%) of genes in pham
• Manual Annotations of this start: 23 of 184
• Called 100.0% of time when present
• Phage (with cluster) where this start called: B1_40 (A3), BabyJohn_41 (A3), BabyRay_43 (A3), BlueBird_44 (A3), Bugatti_44 (A3), Cat_41 (A3), Chiqui_41 (A3), Clammy_44 (A3), DropBear_43 (A3), Fred313_43 (A3), Giroux_44 (A3), Goose1D_37 (A3), Goose1X_43 (A3), Heathen_43 (A3), HelDan_43 (A3), Idleandcovert_43 (A3), Isca_42 (A3), JF2_43 (A3), JF4_43 (A3), Kachowdy_43 (A3), MA5_43 (A3), MK4_43 (A3), Marchesa_43 (A3), Phantastic_43 (A3), Pistachio_44 (A3), Puppy_44 (A3), Rockstar_43 (A3), Roimos_43 (A3), SaturnRing_43 (A3), Scout_43 (A3), Shep_43 (A3), TNguyen7_43 (A3), Zarafa_43 (A3),

Summary by clusters:

There are 3 clusters represented in this pham: A3, A4, A10,

Info for manual annotations of cluster A10:
•Start number 6 was manually annotated 17 times for cluster A10.

Info for manual annotations of cluster A3:
•Start number 7 was manually annotated 23 times for cluster A3.

Info for manual annotations of cluster A4:
•Start number 6 was manually annotated 144 times for cluster A4.

Gene Information:

Gene: AbbysRanger_43 Start: 29686, Stop: 29516, Start Num: 6
Candidate Starts for AbbysRanger_43:
(5, 29737), (Start: 6 @29686 has 161 MA's), (9, 29668), (11, 29659), (19, 29554), (21, 29527),

Gene: Abdiel_44 Start: 29724, Stop: 29554, Start Num: 6
Candidate Starts for Abdiel_44:

(1, 29964), (3, 29862), (5, 29775), (Start: 6 @29724 has 161 MA's), (19, 29589), (20, 29577),

Gene: Achebe_42 Start: 29669, Stop: 29499, Start Num: 6
Candidate Starts for Achebe_42:
(5, 29720), (Start: 6 @29669 has 161 MA's), (9, 29651), (11, 29642), (19, 29537), (21, 29510),

Gene: Albee_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Albee_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Alberto7_45 Start: 30060, Stop: 29893, Start Num: 6
Candidate Starts for Alberto7_45:
(5, 30111), (Start: 6 @30060 has 161 MA's), (16, 29964), (19, 29931), (21, 29904),

Gene: Annyong_44 Start: 29768, Stop: 29601, Start Num: 6
Candidate Starts for Annyong_44:
(1, 30008), (3, 29906), (5, 29819), (Start: 6 @29768 has 161 MA's), (16, 29672), (19, 29639), (21, 29612),

Gene: Arturo_43 Start: 29979, Stop: 29809, Start Num: 6
Candidate Starts for Arturo_43:
(1, 30219), (3, 30117), (5, 30030), (Start: 6 @29979 has 161 MA's), (11, 29952), (19, 29847), (21, 29820),

Gene: AvatarAhPeg_43 Start: 30198, Stop: 30028, Start Num: 6
Candidate Starts for AvatarAhPeg_43:
(5, 30249), (Start: 6 @30198 has 161 MA's), (11, 30171), (19, 30066), (21, 30039),

Gene: Avle17_44 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Avle17_44:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: B1_40 Start: 28679, Stop: 28518, Start Num: 7
Candidate Starts for B1_40:
(4, 28769), (Start: 7 @28679 has 23 MA's), (19, 28553),

Gene: Baby16_44 Start: 29734, Stop: 29564, Start Num: 6
Candidate Starts for Baby16_44:
(1, 29974), (3, 29872), (5, 29785), (Start: 6 @29734 has 161 MA's), (19, 29599), (20, 29587),

Gene: BabyJohn_41 Start: 29470, Stop: 29309, Start Num: 7
Candidate Starts for BabyJohn_41:
(Start: 7 @29470 has 23 MA's), (11, 29446), (19, 29344),

Gene: BabyRay_43 Start: 29415, Stop: 29254, Start Num: 7
Candidate Starts for BabyRay_43:
(4, 29505), (Start: 7 @29415 has 23 MA's), (11, 29391), (19, 29289),

Gene: Backyardigan_42 Start: 29702, Stop: 29532, Start Num: 6
Candidate Starts for Backyardigan_42:
(5, 29753), (Start: 6 @29702 has 161 MA's), (9, 29684), (11, 29675), (19, 29570), (21, 29543),

Gene: Badger_42 Start: 29670, Stop: 29500, Start Num: 6
Candidate Starts for Badger_42:
(5, 29721), (Start: 6 @29670 has 161 MA's), (9, 29652), (11, 29643), (19, 29538), (21, 29511),

Gene: BangNhom_45 Start: 30145, Stop: 29975, Start Num: 6
Candidate Starts for BangNhom_45:
(5, 30196), (Start: 6 @30145 has 161 MA's), (11, 30118), (19, 30013), (21, 29986),

Gene: Bartimeaus_44 Start: 29725, Stop: 29555, Start Num: 6
Candidate Starts for Bartimeaus_44:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (20, 29578),

Gene: BellusTerra_45 Start: 29724, Stop: 29554, Start Num: 6
Candidate Starts for BellusTerra_45:
(1, 29964), (3, 29862), (5, 29775), (Start: 6 @29724 has 161 MA's), (19, 29589), (20, 29577),

Gene: Blackmoor_44 Start: 29725, Stop: 29555, Start Num: 6
Candidate Starts for Blackmoor_44:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (20, 29578),

Gene: BlueBird_44 Start: 29325, Stop: 29164, Start Num: 7
Candidate Starts for BlueBird_44:
(4, 29415), (Start: 7 @29325 has 23 MA's), (11, 29301), (19, 29199),

Gene: Bombshell_44 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Bombshell_44:
(3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: Broseidon_44 Start: 29725, Stop: 29555, Start Num: 6
Candidate Starts for Broseidon_44:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (20, 29578),

Gene: Bruiser_43 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Bruiser_43:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: BubbleTrouble_43 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for BubbleTrouble_43:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Buckaroo_43 Start: 29727, Stop: 29557, Start Num: 6
Candidate Starts for Buckaroo_43:
(1, 29967), (3, 29865), (5, 29778), (Start: 6 @29727 has 161 MA's), (19, 29592), (20, 29580),

Gene: Bugatti_44 Start: 29325, Stop: 29164, Start Num: 7
Candidate Starts for Bugatti_44:
(4, 29415), (Start: 7 @29325 has 23 MA's), (11, 29301), (19, 29199),

Gene: Bumblebee11_42 Start: 29672, Stop: 29502, Start Num: 6
Candidate Starts for Bumblebee11_42:
(5, 29723), (Start: 6 @29672 has 161 MA's), (9, 29654), (11, 29645), (19, 29540), (21, 29513),

Gene: Burger_42 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Burger_42:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Caelakin_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Caelakin_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Camperdownii_42 Start: 29396, Stop: 29226, Start Num: 6
Candidate Starts for Camperdownii_42:
(1, 29636), (3, 29534), (5, 29447), (Start: 6 @29396 has 161 MA's), (19, 29261), (20, 29249),

Gene: Cat_41 Start: 29028, Stop: 28867, Start Num: 7
Candidate Starts for Cat_41:
(4, 29118), (Start: 7 @29028 has 23 MA's), (11, 29004), (19, 28902),

Gene: CentreCat_44 Start: 29726, Stop: 29556, Start Num: 6
Candidate Starts for CentreCat_44:
(1, 29966), (3, 29864), (5, 29777), (Start: 6 @29726 has 161 MA's), (19, 29591), (20, 29579),

Gene: Cerulean_45 Start: 30146, Stop: 29976, Start Num: 6
Candidate Starts for Cerulean_45:
(5, 30197), (Start: 6 @30146 has 161 MA's), (11, 30119), (19, 30014), (21, 29987),

Gene: ChampagnePapi_46 Start: 30145, Stop: 29975, Start Num: 6
Candidate Starts for ChampagnePapi_46:
(5, 30196), (Start: 6 @30145 has 161 MA's), (11, 30118), (19, 30013), (21, 29986),

Gene: Chaph_44 Start: 29734, Stop: 29564, Start Num: 6
Candidate Starts for Chaph_44:
(1, 29974), (3, 29872), (5, 29785), (Start: 6 @29734 has 161 MA's), (19, 29599), (20, 29587),

Gene: Chiqui_41 Start: 29479, Stop: 29318, Start Num: 7
Candidate Starts for Chiqui_41:
(Start: 7 @29479 has 23 MA's), (11, 29455), (19, 29353),

Gene: Chupacabra_42 Start: 29275, Stop: 29105, Start Num: 6
Candidate Starts for Chupacabra_42:
(Start: 6 @29275 has 161 MA's), (9, 29260), (12, 29227), (14, 29197), (19, 29143),

Gene: Cici_43 Start: 29687, Stop: 29517, Start Num: 6
Candidate Starts for Cici_43:
(5, 29738), (Start: 6 @29687 has 161 MA's), (9, 29669), (11, 29660), (19, 29555), (21, 29528),

Gene: Cindaradix_41 Start: 29312, Stop: 29142, Start Num: 6
Candidate Starts for Cindaradix_41:
(1, 29552), (3, 29450), (5, 29363), (Start: 6 @29312 has 161 MA's), (9, 29294), (11, 29285), (19, 29180), (21, 29153),

Gene: Cintron_43 Start: 29703, Stop: 29536, Start Num: 6
Candidate Starts for Cintron_43:
(1, 29943), (3, 29841), (5, 29754), (Start: 6 @29703 has 161 MA's), (16, 29607), (19, 29574), (21, 29547),

Gene: Citius_44 Start: 29744, Stop: 29574, Start Num: 6
Candidate Starts for Citius_44:
(1, 29984), (3, 29882), (5, 29795), (Start: 6 @29744 has 161 MA's), (19, 29609), (20, 29597),

Gene: Clammy_44 Start: 29325, Stop: 29164, Start Num: 7
Candidate Starts for Clammy_44:
(4, 29415), (Start: 7 @29325 has 23 MA's), (11, 29301), (19, 29199),

Gene: Clarenza_43 Start: 29720, Stop: 29550, Start Num: 6
Candidate Starts for Clarenza_43:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (19, 29585), (20, 29573),

Gene: Cocoaberry_44 Start: 29727, Stop: 29557, Start Num: 6
Candidate Starts for Cocoaberry_44:
(1, 29967), (3, 29865), (5, 29778), (Start: 6 @29727 has 161 MA's), (19, 29592), (20, 29580),

Gene: Commander_44 Start: 29722, Stop: 29552, Start Num: 6
Candidate Starts for Commander_44:
(1, 29962), (3, 29860), (5, 29773), (Start: 6 @29722 has 161 MA's), (19, 29587), (20, 29575),

Gene: Connomayer_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Connomayer_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Datway_43 Start: 29658, Stop: 29488, Start Num: 6
Candidate Starts for Datway_43:
(5, 29709), (Start: 6 @29658 has 161 MA's), (9, 29640), (11, 29631), (19, 29526), (21, 29499),

Gene: Deano_43 Start: 29731, Stop: 29561, Start Num: 6
Candidate Starts for Deano_43:
(1, 29971), (3, 29869), (5, 29782), (Start: 6 @29731 has 161 MA's), (19, 29596), (20, 29584),

Gene: Dhanush_44 Start: 29726, Stop: 29556, Start Num: 6
Candidate Starts for Dhanush_44:
(1, 29966), (3, 29864), (5, 29777), (Start: 6 @29726 has 161 MA's), (19, 29591), (20, 29579),

Gene: DirtyDunning_43 Start: 29720, Stop: 29550, Start Num: 6
Candidate Starts for DirtyDunning_43:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (19, 29588), (21, 29561),

Gene: DontArgue_42 Start: 28524, Stop: 28354, Start Num: 6
Candidate Starts for DontArgue_42:
(1, 28755), (3, 28653), (Start: 6 @28524 has 161 MA's), (19, 28392),

Gene: Drake94_41 Start: 28536, Stop: 28366, Start Num: 6
Candidate Starts for Drake94_41:
(Start: 6 @28536 has 161 MA's), (12, 28488), (19, 28404),

Gene: DropBear_43 Start: 29392, Stop: 29231, Start Num: 7
Candidate Starts for DropBear_43:
(4, 29482), (Start: 7 @29392 has 23 MA's), (11, 29368), (13, 29347), (19, 29266),

Gene: Druantia_44 Start: 29726, Stop: 29556, Start Num: 6
Candidate Starts for Druantia_44:
(1, 29966), (3, 29864), (5, 29777), (Start: 6 @29726 has 161 MA's), (19, 29591), (20, 29579),

Gene: DustyMartin_47 Start: 29355, Stop: 29188, Start Num: 6
Candidate Starts for DustyMartin_47:
(Start: 6 @29355 has 161 MA's), (8, 29343), (10, 29337), (17, 29250), (19, 29226),

Gene: Eagle_44 Start: 29748, Stop: 29578, Start Num: 6
Candidate Starts for Eagle_44:
(1, 29988), (3, 29886), (5, 29799), (Start: 6 @29748 has 161 MA's), (19, 29613), (20, 29601),

Gene: Eaglepride_44 Start: 29372, Stop: 29205, Start Num: 6
Candidate Starts for Eaglepride_44:
(Start: 6 @29372 has 161 MA's), (10, 29354), (19, 29243),

Gene: Eapen_44 Start: 29718, Stop: 29551, Start Num: 6
Candidate Starts for Eapen_44:
(1, 29958), (3, 29856), (5, 29769), (Start: 6 @29718 has 161 MA's), (11, 29691), (16, 29622), (19, 29589), (21, 29562),

Gene: Edison31_42 Start: 29295, Stop: 29128, Start Num: 6
Candidate Starts for Edison31_42:
(Start: 6 @29295 has 161 MA's), (8, 29283), (10, 29277), (17, 29190), (19, 29166),

Gene: Eris_43 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Eris_43:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Eros_44 Start: 29725, Stop: 29555, Start Num: 6
Candidate Starts for Eros_44:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (20, 29578),

Gene: Eurydice_45 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Eurydice_45:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (16, 29624), (19, 29591), (21, 29564),

Gene: Florean_44 Start: 29722, Stop: 29552, Start Num: 6
Candidate Starts for Florean_44:
(1, 29962), (3, 29860), (5, 29773), (Start: 6 @29722 has 161 MA's), (19, 29587), (20, 29575),

Gene: Flux_44 Start: 29722, Stop: 29555, Start Num: 6
Candidate Starts for Flux_44:
(1, 29962), (3, 29860), (5, 29773), (Start: 6 @29722 has 161 MA's), (16, 29626), (19, 29593), (21, 29566),

Gene: Fred313_43 Start: 29077, Stop: 28916, Start Num: 7
Candidate Starts for Fred313_43:
(4, 29167), (Start: 7 @29077 has 23 MA's), (11, 29053), (13, 29032), (19, 28951),

Gene: Funston_43 Start: 29723, Stop: 29553, Start Num: 6

Candidate Starts for Funston_43:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Gadost_44 Start: 29727, Stop: 29557, Start Num: 6
Candidate Starts for Gadost_44:
(1, 29967), (3, 29865), (5, 29778), (Start: 6 @29727 has 161 MA's), (19, 29592), (20, 29580),

Gene: Giroux_44 Start: 29324, Stop: 29163, Start Num: 7
Candidate Starts for Giroux_44:
(4, 29414), (Start: 7 @29324 has 23 MA's), (11, 29300), (19, 29198),

Gene: Goose_43 Start: 29079, Stop: 28909, Start Num: 6
Candidate Starts for Goose_43:
(Start: 6 @29079 has 161 MA's), (9, 29064), (12, 29031), (14, 29001), (19, 28947),

Gene: Goose1D_37 Start: 25525, Stop: 25364, Start Num: 7
Candidate Starts for Goose1D_37:
(4, 25615), (Start: 7 @25525 has 23 MA's), (11, 25501), (13, 25480), (19, 25399),

Gene: Goose1X_43 Start: 28667, Stop: 28506, Start Num: 7
Candidate Starts for Goose1X_43:
(4, 28757), (Start: 7 @28667 has 23 MA's), (11, 28643), (13, 28622), (19, 28541),

Gene: HamSlice_43 Start: 29721, Stop: 29551, Start Num: 6
Candidate Starts for HamSlice_43:
(1, 29961), (3, 29859), (5, 29772), (Start: 6 @29721 has 161 MA's), (19, 29586), (20, 29574),

Gene: Happiness_43 Start: 29728, Stop: 29558, Start Num: 6
Candidate Starts for Happiness_43:
(1, 29968), (3, 29866), (5, 29779), (Start: 6 @29728 has 161 MA's), (11, 29701), (19, 29596), (21, 29569),

Gene: Heathen_43 Start: 29133, Stop: 28972, Start Num: 7
Candidate Starts for Heathen_43:
(4, 29223), (Start: 7 @29133 has 23 MA's), (11, 29109), (13, 29088), (19, 29007),

Gene: HelDan_43 Start: 29385, Stop: 29224, Start Num: 7
Candidate Starts for HelDan_43:
(4, 29475), (Start: 7 @29385 has 23 MA's), (11, 29361), (13, 29340), (19, 29259),

Gene: Holli_43 Start: 29513, Stop: 29343, Start Num: 6
Candidate Starts for Holli_43:
(1, 29753), (3, 29651), (5, 29564), (Start: 6 @29513 has 161 MA's), (19, 29378), (20, 29366),

Gene: Houdini22_44 Start: 29727, Stop: 29557, Start Num: 6
Candidate Starts for Houdini22_44:
(1, 29967), (3, 29865), (5, 29778), (Start: 6 @29727 has 161 MA's), (19, 29592), (20, 29580),

Gene: Huxley_43 Start: 29784, Stop: 29614, Start Num: 6
Candidate Starts for Huxley_43:
(1, 30024), (3, 29922), (5, 29835), (Start: 6 @29784 has 161 MA's), (19, 29649), (20, 29637),

Gene: ICleared_44 Start: 29752, Stop: 29585, Start Num: 6

Candidate Starts for ICleared_44:
(1, 29992), (3, 29890), (5, 29803), (Start: 6 @29752 has 161 MA's), (16, 29656), (19, 29623), (21, 29596),

Gene: Iceman_44 Start: 30009, Stop: 29842, Start Num: 6
Candidate Starts for Iceman_44:
(1, 30249), (3, 30147), (5, 30060), (Start: 6 @30009 has 161 MA's), (11, 29982), (16, 29913), (19, 29880), (21, 29853),

Gene: Idleandcovert_43 Start: 29325, Stop: 29164, Start Num: 7
Candidate Starts for Idleandcovert_43:
(4, 29415), (Start: 7 @29325 has 23 MA's), (11, 29301), (19, 29199),

Gene: Iracema64_45 Start: 29987, Stop: 29817, Start Num: 6
Candidate Starts for Iracema64_45:
(5, 30038), (Start: 6 @29987 has 161 MA's), (11, 29960), (19, 29855), (21, 29828),

Gene: Isca_42 Start: 28928, Stop: 28767, Start Num: 7
Candidate Starts for Isca_42:
(4, 29018), (Start: 7 @28928 has 23 MA's), (17, 28826), (19, 28802),

Gene: JF2_43 Start: 28679, Stop: 28518, Start Num: 7
Candidate Starts for JF2_43:
(4, 28769), (Start: 7 @28679 has 23 MA's), (19, 28553),

Gene: JF4_43 Start: 28679, Stop: 28518, Start Num: 7
Candidate Starts for JF4_43:
(4, 28769), (Start: 7 @28679 has 23 MA's), (19, 28553),

Gene: Jaykayelowell_42 Start: 29716, Stop: 29549, Start Num: 6
Candidate Starts for Jaykayelowell_42:
(1, 29956), (3, 29854), (5, 29767), (Start: 6 @29716 has 161 MA's), (11, 29689), (16, 29620), (19, 29587), (21, 29560),

Gene: JetBlade_44 Start: 29717, Stop: 29550, Start Num: 6
Candidate Starts for JetBlade_44:
(1, 29957), (3, 29855), (5, 29768), (Start: 6 @29717 has 161 MA's), (11, 29690), (16, 29621), (19, 29588), (21, 29561),

Gene: JoongJeon_43 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for JoongJeon_43:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: Junimo_43 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Junimo_43:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: KFPoly_43 Start: 29717, Stop: 29550, Start Num: 6
Candidate Starts for KFPoly_43:
(1, 29957), (3, 29855), (5, 29768), (Start: 6 @29717 has 161 MA's), (11, 29690), (16, 29621), (19, 29588), (21, 29561),

Gene: Kachowdy_43 Start: 29385, Stop: 29224, Start Num: 7
Candidate Starts for Kachowdy_43:
(4, 29475), (Start: 7 @29385 has 23 MA's), (11, 29361), (13, 29340), (19, 29259),

Gene: Kampy_44 Start: 29725, Stop: 29555, Start Num: 6
Candidate Starts for Kampy_44:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (20, 29578),

Gene: Katalie136_43 Start: 29672, Stop: 29502, Start Num: 6
Candidate Starts for Katalie136_43:
(5, 29723), (Start: 6 @29672 has 161 MA's), (9, 29654), (11, 29645), (19, 29540), (21, 29513),

Gene: KekoraPapaka_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for KekoraPapaka_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (11, 29696), (19, 29588), (20, 29576),

Gene: Kingmustik0402_44 Start: 29712, Stop: 29545, Start Num: 6
Candidate Starts for Kingmustik0402_44:
(1, 29952), (3, 29850), (5, 29763), (Start: 6 @29712 has 161 MA's), (11, 29685), (16, 29616), (19, 29583), (21, 29556),

Gene: KittenMittens_40 Start: 28544, Stop: 28374, Start Num: 6
Candidate Starts for KittenMittens_40:
(Start: 6 @28544 has 161 MA's), (12, 28496), (19, 28412),

Gene: Koan_42 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Koan_42:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Koreni_43 Start: 29404, Stop: 29234, Start Num: 6
Candidate Starts for Koreni_43:
(1, 29644), (3, 29542), (5, 29455), (Start: 6 @29404 has 161 MA's), (19, 29269), (20, 29257),

Gene: Kratark_44 Start: 29862, Stop: 29692, Start Num: 6
Candidate Starts for Kratark_44:
(1, 30102), (3, 30000), (5, 29913), (Start: 6 @29862 has 161 MA's), (11, 29835), (19, 29730), (21, 29703),

Gene: Kremtemulon_44 Start: 29674, Stop: 29507, Start Num: 6
Candidate Starts for Kremtemulon_44:
(1, 29914), (3, 29812), (5, 29725), (Start: 6 @29674 has 161 MA's), (11, 29647), (16, 29578), (19, 29545), (21, 29518),

Gene: Kristoff_43 Start: 29647, Stop: 29477, Start Num: 6
Candidate Starts for Kristoff_43:
(Start: 6 @29647 has 161 MA's), (9, 29632), (12, 29599), (19, 29515), (22, 29485),

Gene: Kyee_44 Start: 29721, Stop: 29551, Start Num: 6
Candidate Starts for Kyee_44:
(1, 29961), (3, 29859), (5, 29772), (Start: 6 @29721 has 161 MA's), (19, 29586), (20, 29574),

Gene: LHTSCC_46 Start: 30145, Stop: 29975, Start Num: 6

Candidate Starts for LHTSCC_46:
(5, 30196), (Start: 6 @30145 has 161 MA's), (11, 30118), (19, 30013), (21, 29986),

Gene: LappelDuVide_44 Start: 29722, Stop: 29552, Start Num: 6
Candidate Starts for LappelDuVide_44:
(1, 29962), (3, 29860), (5, 29773), (Start: 6 @29722 has 161 MA's), (19, 29587), (20, 29575),

Gene: Lemur_44 Start: 29720, Stop: 29550, Start Num: 6
Candidate Starts for Lemur_44:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (19, 29585), (20, 29573),

Gene: LeoAvram_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for LeoAvram_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: LittleB_44 Start: 29724, Stop: 29554, Start Num: 6
Candidate Starts for LittleB_44:
(1, 29964), (3, 29862), (5, 29775), (Start: 6 @29724 has 161 MA's), (19, 29589), (20, 29577),

Gene: LittleGuy_44 Start: 29619, Stop: 29452, Start Num: 6
Candidate Starts for LittleGuy_44:
(1, 29859), (3, 29757), (5, 29670), (Start: 6 @29619 has 161 MA's), (11, 29592), (16, 29523), (19, 29490), (21, 29463),

Gene: LochMonster_45 Start: 29959, Stop: 29789, Start Num: 6
Candidate Starts for LochMonster_45:
(1, 30199), (3, 30097), (5, 30010), (Start: 6 @29959 has 161 MA's), (19, 29824), (20, 29812),

Gene: Lorenzo_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Lorenzo_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Lunsford_45 Start: 29717, Stop: 29550, Start Num: 6
Candidate Starts for Lunsford_45:
(1, 29957), (3, 29855), (5, 29768), (Start: 6 @29717 has 161 MA's), (11, 29690), (16, 29621), (19, 29588), (21, 29561),

Gene: MA5_43 Start: 28829, Stop: 28668, Start Num: 7
Candidate Starts for MA5_43:
(Start: 7 @28829 has 23 MA's), (11, 28805), (19, 28703),

Gene: MK4_43 Start: 28913, Stop: 28752, Start Num: 7
Candidate Starts for MK4_43:
(4, 29003), (Start: 7 @28913 has 23 MA's), (19, 28787),

Gene: Marchesa_43 Start: 29383, Stop: 29222, Start Num: 7
Candidate Starts for Marchesa_43:
(4, 29473), (Start: 7 @29383 has 23 MA's), (11, 29359), (13, 29338), (19, 29257),

Gene: Maverick_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Maverick_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Maxo_45 Start: 29725, Stop: 29555, Start Num: 6
Candidate Starts for Maxo_45:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (20, 29578),

Gene: Mayonnaise_43 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Mayonnaise_43:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Mazhar510_44 Start: 29724, Stop: 29554, Start Num: 6
Candidate Starts for Mazhar510_44:
(1, 29964), (3, 29862), (5, 29775), (Start: 6 @29724 has 161 MA's), (19, 29589), (20, 29577),

Gene: Medusa_44 Start: 29722, Stop: 29552, Start Num: 6
Candidate Starts for Medusa_44:
(1, 29962), (3, 29860), (5, 29773), (Start: 6 @29722 has 161 MA's), (19, 29587), (20, 29575),

Gene: MeeZee_44 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for MeeZee_44:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (16, 29624), (19, 29591), (21, 29564),

Gene: Melvin_46 Start: 29718, Stop: 29551, Start Num: 6
Candidate Starts for Melvin_46:
(1, 29958), (3, 29856), (5, 29769), (Start: 6 @29718 has 161 MA's), (16, 29622), (19, 29589), (21, 29562),

Gene: Millski_43 Start: 29724, Stop: 29557, Start Num: 6
Candidate Starts for Millski_43:
(1, 29964), (3, 29862), (5, 29775), (Start: 6 @29724 has 161 MA's), (16, 29628), (19, 29595), (21, 29568),

Gene: Miramae_43 Start: 29860, Stop: 29690, Start Num: 6
Candidate Starts for Miramae_43:
(5, 29911), (Start: 6 @29860 has 161 MA's), (11, 29833), (19, 29728), (21, 29701),

Gene: Morpher26_43 Start: 29693, Stop: 29523, Start Num: 6
Candidate Starts for Morpher26_43:
(5, 29744), (Start: 6 @29693 has 161 MA's), (9, 29675), (11, 29666), (19, 29561), (21, 29534),

Gene: Morrow_45 Start: 29729, Stop: 29559, Start Num: 6
Candidate Starts for Morrow_45:
(1, 29969), (3, 29867), (5, 29780), (Start: 6 @29729 has 161 MA's), (19, 29594), (20, 29582),

Gene: Mundrea_43 Start: 29680, Stop: 29510, Start Num: 6
Candidate Starts for Mundrea_43:
(5, 29731), (Start: 6 @29680 has 161 MA's), (9, 29662), (11, 29653), (19, 29548), (21, 29521),

Gene: Nebs_45 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Nebs_45:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Nemo27_44 Start: 29722, Stop: 29552, Start Num: 6
Candidate Starts for Nemo27_44:

(1, 29962), (3, 29860), (5, 29773), (Start: 6 @29722 has 161 MA's), (19, 29587), (20, 29575),

Gene: Noelle_44 Start: 29982, Stop: 29815, Start Num: 6
Candidate Starts for Noelle_44:
(5, 30033), (Start: 6 @29982 has 161 MA's), (11, 29955), (14, 29901), (19, 29853), (21, 29826),

Gene: NorthStar_43 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for NorthStar_43:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Northrop_44 Start: 29719, Stop: 29549, Start Num: 6
Candidate Starts for Northrop_44:
(1, 29959), (3, 29857), (5, 29770), (Start: 6 @29719 has 161 MA's), (19, 29584), (20, 29572),

Gene: NotAPhaseMom_44 Start: 29727, Stop: 29557, Start Num: 6
Candidate Starts for NotAPhaseMom_44:
(1, 29967), (3, 29865), (5, 29778), (Start: 6 @29727 has 161 MA's), (19, 29592), (20, 29580),

Gene: Nyxis_44 Start: 29613, Stop: 29446, Start Num: 6
Candidate Starts for Nyxis_44:
(1, 29853), (3, 29751), (5, 29664), (Start: 6 @29613 has 161 MA's), (15, 29523), (19, 29484), (20, 29472), (21, 29457),

Gene: OKCentral2016_42 Start: 28982, Stop: 28812, Start Num: 6
Candidate Starts for OKCentral2016_42:
(Start: 6 @28982 has 161 MA's), (9, 28967), (12, 28934), (14, 28904), (19, 28850),

Gene: OKaNui_44 Start: 29773, Stop: 29606, Start Num: 6
Candidate Starts for OKaNui_44:
(1, 30013), (3, 29911), (5, 29824), (Start: 6 @29773 has 161 MA's), (16, 29677), (19, 29644), (21, 29617),

Gene: Obama12_45 Start: 30147, Stop: 29977, Start Num: 6
Candidate Starts for Obama12_45:
(5, 30198), (Start: 6 @30147 has 161 MA's), (11, 30120), (19, 30015), (21, 29988),

Gene: Ohfah_45 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Ohfah_45:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Palestino_43 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Palestino_43:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (8, 29705), (16, 29624), (19, 29591), (21, 29564),

Gene: PeaceMeal1_41 Start: 28545, Stop: 28375, Start Num: 6
Candidate Starts for PeaceMeal1_41:
(Start: 6 @28545 has 161 MA's), (12, 28497), (19, 28413),

Gene: Peaches_44 Start: 29722, Stop: 29552, Start Num: 6
Candidate Starts for Peaches_44:
(1, 29962), (3, 29860), (5, 29773), (Start: 6 @29722 has 161 MA's), (19, 29587), (20, 29575),

Gene: Perplexer_43 Start: 29669, Stop: 29499, Start Num: 6
Candidate Starts for Perplexer_43:
(5, 29720), (Start: 6 @29669 has 161 MA's), (9, 29651), (11, 29642), (19, 29537), (21, 29510),

Gene: PeterPeter_44 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for PeterPeter_44:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: PetiteSangsue_43 Start: 29672, Stop: 29502, Start Num: 6
Candidate Starts for PetiteSangsue_43:
(5, 29723), (Start: 6 @29672 has 161 MA's), (9, 29654), (11, 29645), (19, 29540), (21, 29513),

Gene: Phacado_44 Start: 29722, Stop: 29552, Start Num: 6
Candidate Starts for Phacado_44:
(1, 29962), (3, 29860), (5, 29773), (Start: 6 @29722 has 161 MA's), (19, 29587), (20, 29575),

Gene: Phantastic_43 Start: 28944, Stop: 28783, Start Num: 7
Candidate Starts for Phantastic_43:
(4, 29034), (Start: 7 @28944 has 23 MA's), (19, 28818),

Gene: Phelipe_45 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Phelipe_45:
(3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Phighter1804_44 Start: 29765, Stop: 29595, Start Num: 6
Candidate Starts for Phighter1804_44:
(5, 29816), (Start: 6 @29765 has 161 MA's), (19, 29630), (20, 29618),

Gene: Phontbonne_44 Start: 29614, Stop: 29447, Start Num: 6
Candidate Starts for Phontbonne_44:
(1, 29854), (3, 29752), (5, 29665), (Start: 6 @29614 has 161 MA's), (11, 29587), (16, 29518), (19, 29485), (21, 29458),

Gene: Pipcraft_42 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Pipcraft_42:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Pistachio_44 Start: 28872, Stop: 28711, Start Num: 7
Candidate Starts for Pistachio_44:
(4, 28962), (Start: 7 @28872 has 23 MA's), (11, 28848), (19, 28746),

Gene: Polymorphads_45 Start: 29716, Stop: 29546, Start Num: 6
Candidate Starts for Polymorphads_45:
(1, 29956), (3, 29854), (5, 29767), (Start: 6 @29716 has 161 MA's), (19, 29581), (20, 29569),

Gene: Poompha_42 Start: 28543, Stop: 28373, Start Num: 6
Candidate Starts for Poompha_42:
(Start: 6 @28543 has 161 MA's), (12, 28495), (19, 28411),

Gene: Pumbaa_44 Start: 29665, Stop: 29498, Start Num: 6
Candidate Starts for Pumbaa_44:

(1, 29905), (3, 29803), (5, 29716), (Start: 6 @29665 has 161 MA's), (16, 29569), (19, 29536), (21, 29509),

Gene: Puppy_44 Start: 28945, Stop: 28784, Start Num: 7
Candidate Starts for Puppy_44:
(4, 29035), (Start: 7 @28945 has 23 MA's), (11, 28921), (19, 28819),

Gene: Rebeuca_43 Start: 29648, Stop: 29478, Start Num: 6
Candidate Starts for Rebeuca_43:
(Start: 6 @29648 has 161 MA's), (9, 29633), (12, 29600), (18, 29531), (19, 29516),

Gene: Relief_43 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Relief_43:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: RhynO_44 Start: 29447, Stop: 29280, Start Num: 6
Candidate Starts for RhynO_44:
(Start: 6 @29447 has 161 MA's), (8, 29435), (10, 29429), (17, 29342), (19, 29318),

Gene: RockieBear_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for RockieBear_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Rocksand_44 Start: 29719, Stop: 29549, Start Num: 6
Candidate Starts for Rocksand_44:
(1, 29959), (3, 29857), (5, 29770), (Start: 6 @29719 has 161 MA's), (19, 29584), (20, 29572),

Gene: Rockstar_43 Start: 28920, Stop: 28759, Start Num: 7
Candidate Starts for Rockstar_43:
(4, 29010), (Start: 7 @28920 has 23 MA's), (17, 28818), (19, 28794),

Gene: Roimos_43 Start: 29301, Stop: 29140, Start Num: 7
Candidate Starts for Roimos_43:
(4, 29391), (Start: 7 @29301 has 23 MA's), (11, 29277), (13, 29256), (19, 29175),

Gene: Romney_44 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Romney_44:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: Roosevelt_43 Start: 29725, Stop: 29555, Start Num: 6
Candidate Starts for Roosevelt_43:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (20, 29578),

Gene: Rosa24_43 Start: 29754, Stop: 29587, Start Num: 6
Candidate Starts for Rosa24_43:
(1, 29994), (3, 29892), (5, 29805), (Start: 6 @29754 has 161 MA's), (16, 29658), (19, 29625), (21, 29598),

Gene: Rowdy_47 Start: 29355, Stop: 29188, Start Num: 6
Candidate Starts for Rowdy_47:
(Start: 6 @29355 has 161 MA's), (8, 29343), (10, 29337), (17, 29250), (19, 29226),

Gene: Ruin_44 Start: 29716, Stop: 29549, Start Num: 6
Candidate Starts for Ruin_44:
(1, 29956), (3, 29854), (5, 29767), (Start: 6 @29716 has 161 MA's), (8, 29701), (16, 29620), (19, 29587), (21, 29560),

Gene: Sabertooth_44 Start: 29725, Stop: 29552, Start Num: 6
Candidate Starts for Sabertooth_44:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (21, 29563),

Gene: SaturnRing_43 Start: 29325, Stop: 29164, Start Num: 7
Candidate Starts for SaturnRing_43:
(4, 29415), (Start: 7 @29325 has 23 MA's), (11, 29301), (19, 29199),

Gene: Scamp_44 Start: 29725, Stop: 29555, Start Num: 6
Candidate Starts for Scamp_44:
(1, 29965), (3, 29863), (5, 29776), (Start: 6 @29725 has 161 MA's), (19, 29590), (20, 29578),

Gene: Scout_43 Start: 28632, Stop: 28471, Start Num: 7
Candidate Starts for Scout_43:
(4, 28722), (Start: 7 @28632 has 23 MA's), (11, 28608), (13, 28587), (19, 28506),

Gene: SenorClean_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for SenorClean_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Severus_41 Start: 28543, Stop: 28373, Start Num: 6
Candidate Starts for Severus_41:
(Start: 6 @28543 has 161 MA's), (12, 28495), (19, 28411),

Gene: Shaka_44 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Shaka_44:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: Shapes_47 Start: 29355, Stop: 29188, Start Num: 6
Candidate Starts for Shapes_47:
(Start: 6 @29355 has 161 MA's), (8, 29343), (10, 29337), (17, 29250), (19, 29226),

Gene: SheldonCooper_46 Start: 30146, Stop: 29976, Start Num: 6
Candidate Starts for SheldonCooper_46:
(5, 30197), (Start: 6 @30146 has 161 MA's), (11, 30119), (19, 30014), (21, 29987),

Gene: Shep_43 Start: 28346, Stop: 28185, Start Num: 7
Candidate Starts for Shep_43:
(4, 28436), (Start: 7 @28346 has 23 MA's), (11, 28322), (13, 28301), (19, 28220),

Gene: Shygu2_43 Start: 29672, Stop: 29505, Start Num: 6
Candidate Starts for Shygu2_43:
(5, 29723), (Start: 6 @29672 has 161 MA's), (11, 29645), (15, 29582), (19, 29543), (21, 29516),

Gene: Skadoosh_45 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Skadoosh_45:

(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: Skipitt_43 Start: 29717, Stop: 29550, Start Num: 6
Candidate Starts for Skipitt_43:
(1, 29957), (3, 29855), (5, 29768), (Start: 6 @29717 has 161 MA's), (16, 29621), (19, 29588), (21, 29561),

Gene: Sparxx_45 Start: 29718, Stop: 29548, Start Num: 6
Candidate Starts for Sparxx_45:
(1, 29958), (3, 29856), (5, 29769), (Start: 6 @29718 has 161 MA's), (19, 29583), (20, 29571),

Gene: Spino_43 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Spino_43:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Stasia_43 Start: 29592, Stop: 29422, Start Num: 6
Candidate Starts for Stasia_43:
(5, 29643), (Start: 6 @29592 has 161 MA's), (8, 29577), (19, 29457), (20, 29445),

Gene: SteMason_43 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for SteMason_43:
(3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (16, 29624), (19, 29591), (21, 29564),

Gene: Stink_44 Start: 30140, Stop: 29970, Start Num: 6
Candidate Starts for Stink_44:
(5, 30191), (Start: 6 @30140 has 161 MA's), (11, 30113), (19, 30008), (21, 29981),

Gene: Sultana_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for Sultana_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: TNguyen7_43 Start: 29292, Stop: 29131, Start Num: 7
Candidate Starts for TNguyen7_43:
(4, 29382), (Start: 7 @29292 has 23 MA's), (11, 29268), (19, 29166),

Gene: Taquarus_44 Start: 29726, Stop: 29556, Start Num: 6
Candidate Starts for Taquarus_44:
(1, 29966), (3, 29864), (5, 29777), (Start: 6 @29726 has 161 MA's), (19, 29591), (20, 29579),

Gene: Thanksgivukkah_43 Start: 29721, Stop: 29554, Start Num: 6
Candidate Starts for Thanksgivukkah_43:
(1, 29961), (3, 29859), (5, 29772), (Start: 6 @29721 has 161 MA's), (16, 29625), (19, 29592), (21, 29565),

Gene: TinaFeyge_44 Start: 29718, Stop: 29548, Start Num: 6
Candidate Starts for TinaFeyge_44:
(1, 29958), (3, 29856), (5, 29769), (Start: 6 @29718 has 161 MA's), (19, 29583), (20, 29571),

Gene: Tinybot_43 Start: 29750, Stop: 29583, Start Num: 6
Candidate Starts for Tinybot_43:
(1, 29990), (3, 29888), (5, 29801), (Start: 6 @29750 has 161 MA's), (16, 29654), (19, 29621), (21, 29594),

Gene: TiroTheta9_44 Start: 29717, Stop: 29550, Start Num: 6
Candidate Starts for TiroTheta9_44:
(3, 29855), (5, 29768), (Start: 6 @29717 has 161 MA's), (16, 29621), (19, 29588), (21, 29561),

Gene: Topanga_41 Start: 29297, Stop: 29130, Start Num: 6
Candidate Starts for Topanga_41:
(Start: 6 @29297 has 161 MA's), (8, 29285), (10, 29279), (17, 29192), (19, 29168),

Gene: Trike_40 Start: 28376, Stop: 28206, Start Num: 6
Candidate Starts for Trike_40:
(2, 28532), (Start: 6 @28376 has 161 MA's), (12, 28328), (19, 28244),

Gene: TroyPia_45 Start: 29721, Stop: 29551, Start Num: 6
Candidate Starts for TroyPia_45:
(1, 29961), (3, 29859), (5, 29772), (Start: 6 @29721 has 161 MA's), (19, 29586), (20, 29574),

Gene: Twister_41 Start: 29208, Stop: 29041, Start Num: 6
Candidate Starts for Twister_41:
(Start: 6 @29208 has 161 MA's), (8, 29196), (10, 29190), (17, 29103), (19, 29079),

Gene: TygerBlood_44 Start: 29723, Stop: 29553, Start Num: 6
Candidate Starts for TygerBlood_44:
(1, 29963), (3, 29861), (5, 29774), (Start: 6 @29723 has 161 MA's), (19, 29588), (20, 29576),

Gene: Ulysses_43 Start: 29400, Stop: 29233, Start Num: 6
Candidate Starts for Ulysses_43:
(5, 29451), (Start: 6 @29400 has 161 MA's), (16, 29304), (19, 29271), (21, 29244),

Gene: WalterMcMickey_41 Start: 29208, Stop: 29041, Start Num: 6
Candidate Starts for WalterMcMickey_41:
(Start: 6 @29208 has 161 MA's), (8, 29196), (10, 29190), (17, 29103), (19, 29079),

Gene: Wander_44 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Wander_44:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: Wilbur_44 Start: 29720, Stop: 29553, Start Num: 6
Candidate Starts for Wilbur_44:
(1, 29960), (3, 29858), (5, 29771), (Start: 6 @29720 has 161 MA's), (11, 29693), (16, 29624), (19, 29591), (21, 29564),

Gene: Wile_43 Start: 29703, Stop: 29533, Start Num: 6
Candidate Starts for Wile_43:
(5, 29754), (Start: 6 @29703 has 161 MA's), (9, 29685), (11, 29676), (19, 29571), (21, 29544),

Gene: Wizard007_44 Start: 29728, Stop: 29558, Start Num: 6
Candidate Starts for Wizard007_44:
(1, 29968), (3, 29866), (5, 29779), (Start: 6 @29728 has 161 MA's), (19, 29593), (20, 29581),

Gene: Xena_42 Start: 29669, Stop: 29499, Start Num: 6
Candidate Starts for Xena_42:

(5, 29720), (Start: 6 @29669 has 161 MA's), (9, 29651), (11, 29642), (19, 29537), (21, 29510),

Gene: YoSam321_44 Start: 29717, Stop: 29550, Start Num: 6
Candidate Starts for YoSam321_44:
(1, 29957), (3, 29855), (5, 29768), (Start: 6 @29717 has 161 MA's), (16, 29621), (19, 29588), (21, 29561),

Gene: Zarafa_43 Start: 29394, Stop: 29233, Start Num: 7
Candidate Starts for Zarafa_43:
(4, 29484), (Start: 7 @29394 has 23 MA's), (11, 29370), (13, 29349), (19, 29268),