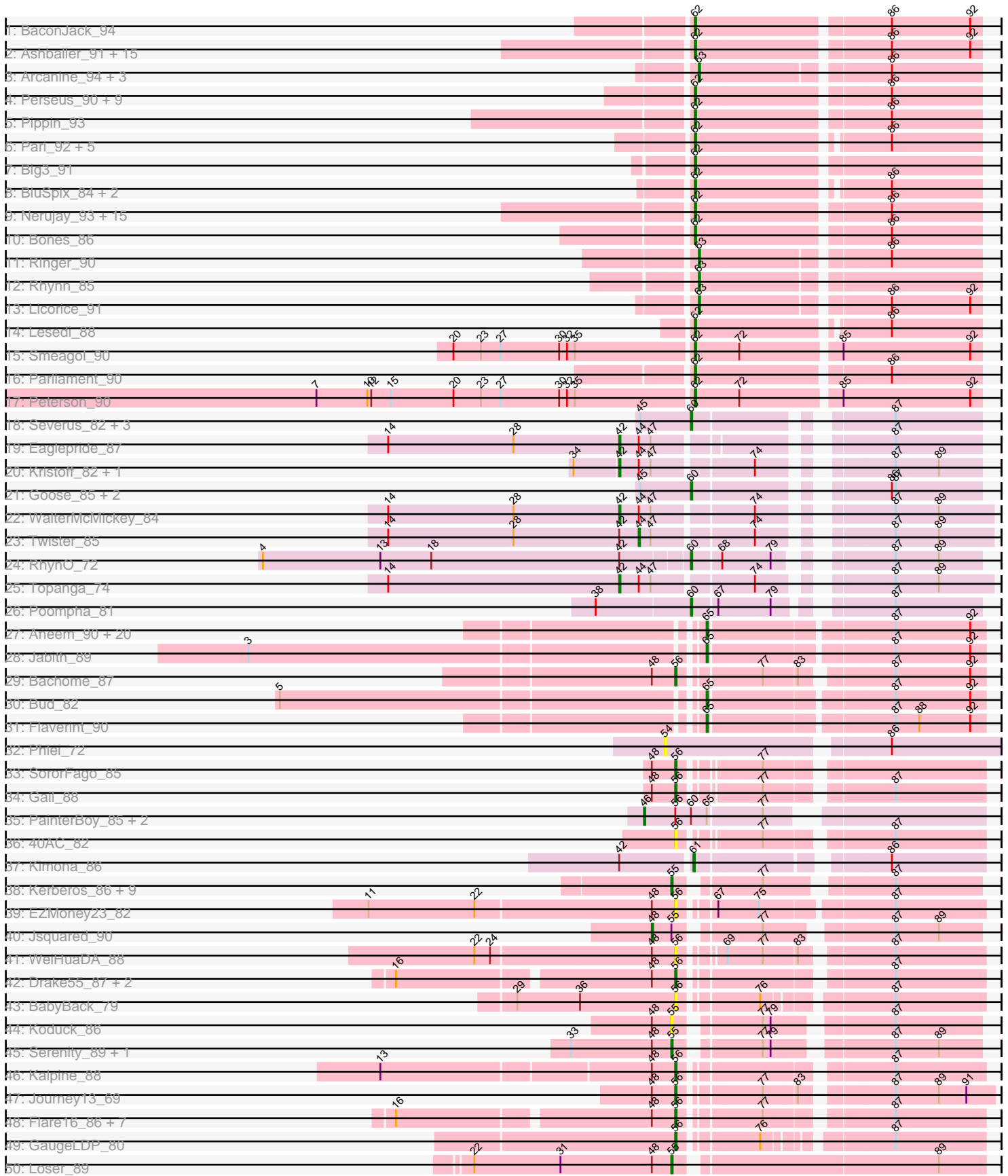
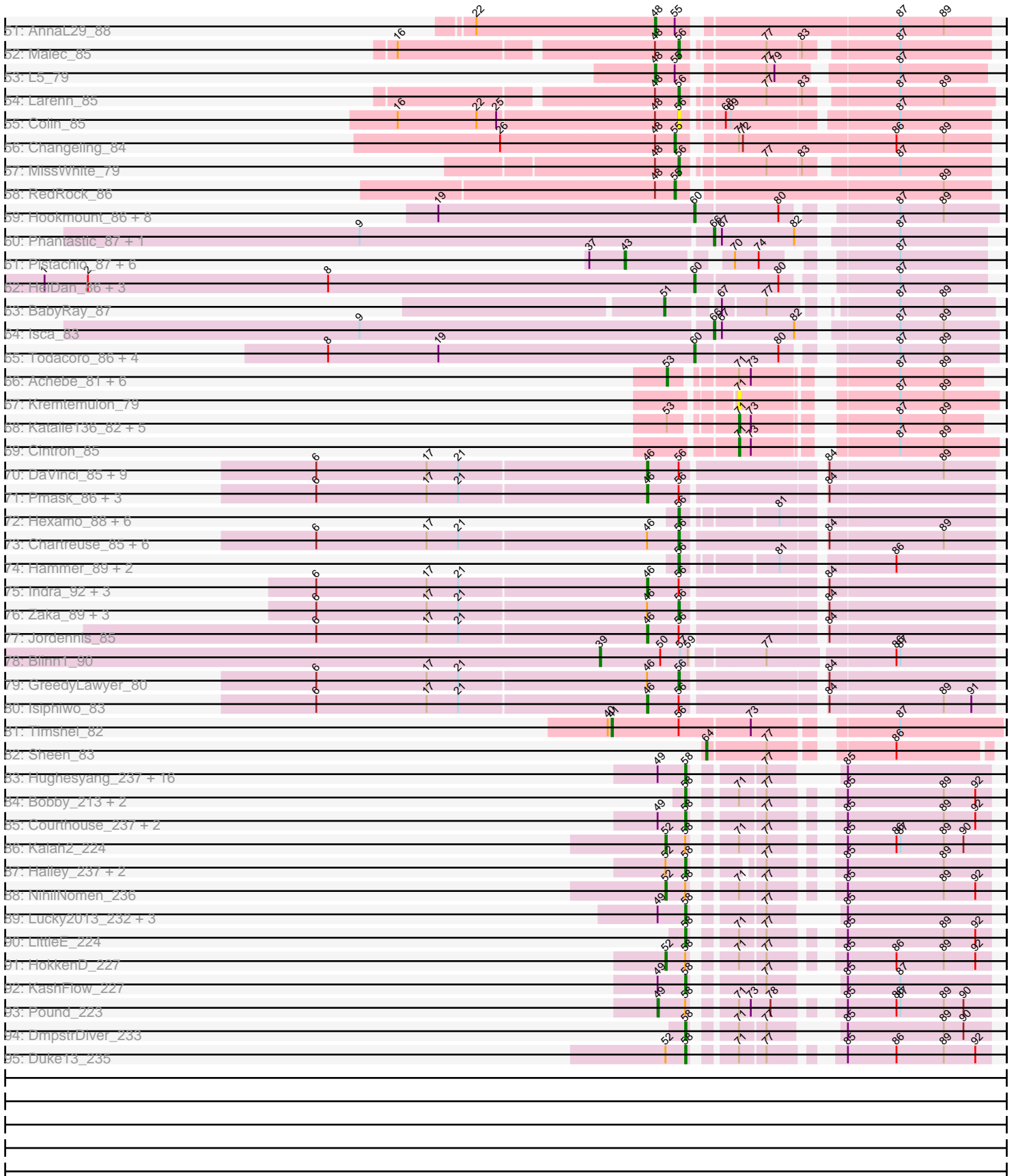


Pham 157529



Pham 157529



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 157529 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157529 has 281 members, 26 are drafts.

Phages represented in each track:

- Track 1 : BaconJack_94
- Track 2 : Ashballer_91, Applejack_89, Edtherson_87, Bob3_90, Abrogate_880, Sunshine924_93, Jorgensen_100, Gandalf20_90, Wilkins_90, StewieG_86, SkiPole_98, Topgun_89, RidgeCB_89, Rutherford_91, Solon_83, Paraselene_87
- Track 3 : Arcanine_94, Ciao_94, Rajelicia_89, BigPaolini_85
- Track 4 : Perseus_90, Mule_92, PhrostyMug_94, Smairt_97, Trouble_90, Tasp14_87, StrongArm_88, JackSparrow_92, Beatrix_89, Bexan_87
- Track 5 : Pippin_93
- Track 6 : Pari_92, A6_85, PherrisBueller_88, Killigrew_87, Zeeculate_91, BK1_85
- Track 7 : Big3_91
- Track 8 : BluSpix_84, IgnatiusPatJac_87, Alsfro_94
- Track 9 : Nerujay_93, Lamina13_93, HermioneGrange_94, Nhonho_87, JC27_94, Jerm2_90, Marsha_93, BigMau_91, HarryOW_91, Sagefire_86, Rohr_92, Barriga_101, Sumter_87, Marge_87, Aeneas_96, MPlant7149_90
- Track 10 : Bones_86
- Track 11 : Ringer_90
- Track 12 : Rhynn_85
- Track 13 : Licorice_91
- Track 14 : Lesedi_88
- Track 15 : Smeagol_90
- Track 16 : Parliament_90
- Track 17 : Peterson_90
- Track 18 : Severus_82, PeaceMeal1_81, KittenMittens_79, Drake94_81
- Track 19 : Eaglepride_87
- Track 20 : Kristoff_82, Rebeuca_85
- Track 21 : Goose_85, Chupacabra_81, OKCentral2016_83
- Track 22 : WalterMcMickey_84
- Track 23 : Twister_85
- Track 24 : RhynO_72
- Track 25 : Topanga_74
- Track 26 : Poompha_81
- Track 27 : Aneem_90, Lucivia_90, MaCh_89, TinyTimmy_87, Salz_85, Munch_88, Bowtie_85, Et2Brutus_89, Joselito_87, Sham4_86, Insomnia_88, Ebony_88, Mulciber_88, Petersenfast_83, Orange_89, Gilberta_87, Hutc2_86, Timothy_89, Mabel_89, Snape_89, Fibonacci_89
- Track 28 : Jabith_89
- Track 29 : Bachome_87

- Track 30 : Bud_82
- Track 31 : Flaverint_90
- Track 32 : Phlei_72
- Track 33 : SororFago_85
- Track 34 : Gail_88
- Track 35 : PainterBoy_85, Lucyedi_86, EagleEye_87
- Track 36 : 40AC_82
- Track 37 : Kimona_86
- Track 38 : Kerberos_86, Tomathan_86, Duplo_87, StarStuff_86, DBQu4n_86, ANI8_85, Pomar16_86, VC3_84, AN9_85, C3_78
- Track 39 : EZMoney23_82
- Track 40 : Jsquared_90
- Track 41 : WeiHuaDA_88
- Track 42 : Drake55_87, HarryHoudini_86, Piro94_85
- Track 43 : BabyBack_79
- Track 44 : Koduck_86
- Track 45 : Serenity_89, TipsytheTRex_85
- Track 46 : Kalpine_88
- Track 47 : Journey13_69
- Track 48 : Flare16_86, WideWale_87, Baehexic_85, Equemioh13_86, MiculUcigas_86, Updawg_87, NaSiaTalie_87, Centaur_86
- Track 49 : GaugeLDP_80
- Track 50 : Loser_89
- Track 51 : AnnaL29_88
- Track 52 : Malec_85
- Track 53 : L5_79
- Track 54 : Larenn_85
- Track 55 : Colin_85
- Track 56 : Changeling_84
- Track 57 : MissWhite_79
- Track 58 : RedRock_86
- Track 59 : Hookmount_86, Poppicle_86, Caviar_75, ResDef_84, Noella_87, Panamaxus_82, Pocahontas_85, Norbert_82, Texage_84
- Track 60 : Phantastic_87, Rockstar_75
- Track 61 : Pistachio_87, SaturnRing_88, TNguyen7_88, BlueBird_89, Puppy_88, Giroux_85, Bugatti_88
- Track 62 : HelDan_86, Heathen_86, Fred313_84, Scout_86
- Track 63 : BabyRay_87
- Track 64 : Isca_83
- Track 65 : Todacoro_86, Veracruz_83, Margo_86, QuinnKiro_85, Lambert1_86
- Track 66 : Achebe_81, Backyardigan_80, Badger_81, Cici_82, Wile_81, Wizard007_82, Druantia_84
- Track 67 : Kremtemulon_79
- Track 68 : Katalie136_82, PetiteSangsue_82, Perplexer_82, Bumblebee11_81, Morpher26_82, AbbysRanger_82
- Track 69 : Cintron_85
- Track 70 : DaVinci_85, Kazan_88, Zulu_90, McFly_87, Hoot_82, Cookiedough_87, SmellyB_87, BABullseye_80, Kipper29_87, VohminGhazi_87
- Track 71 : Pmask_86, SuperAwesome_87, JewelBug_79, Newrala_86
- Track 72 : Hexamo_88, CloudWang3_89, Roksolana_89, Rifter_89, Gruunaga_88, Artemis2UCLA_88, Gladiator_85
- Track 73 : Chartreuse_85, SuperCallie99_83, EricB_85, Dorothea_84, Neeharika16_86, Candra_85, Priamo_88

- Track 74 : Hammer_89, ToneTone_86, Tucker_89
- Track 75 : Indra_92, Wiks_88, Koko_90, Blue7_90
- Track 76 : Zaka_89, Garak_90, Helmet_90, Yokurt_88
- Track 77 : Jordennis_85
- Track 78 : Blinn1_90
- Track 79 : GreedyLawyer_80
- Track 80 : Isiphiwo_83
- Track 81 : Timshel_82
- Track 82 : Sheen_83
- Track 83 : Hughesyang_237, Beem_238, Phoebus_233, Bombitas_219, Klein_242, JuicyJay_230, Hannaconda_225, ThreeRngTarjay_234, Schatzie_227, Yeet_229, EricMillard_232, Redno2_226, Ejimix_226, Zelink_228, Squint_233, Odette_234, Dove_226
- Track 84 : Bobby_213, Constella_224, Thibault_209
- Track 85 : Courthouse_237, Ariel_241, Superphikiman_233
- Track 86 : Kalah2_224
- Track 87 : Halley_237, Dallas_233, Minerva_233
- Track 88 : NihilNomen_236
- Track 89 : Lucky2013_232, Porcelain_236, MiaZeal_245, Wanda_234
- Track 90 : LittleE_224
- Track 91 : HokkenD_227
- Track 92 : KashFlow_227
- Track 93 : Pound_223
- Track 94 : DmpstrDiver_233
- Track 95 : Duke13_235

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

The start number called the most often in the published annotations is 62, it was called in 56 of the 255 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- A6_85, Abrogate_880, Aeneas_96, Alsfro_94, Applejack_89, Ashballer_91, BK1_85, BaconJack_94, Barriga_101, Beatrix_89, Bexan_87, Big3_91, BigMau_91, BluSpix_84, Bob3_90, Bones_86, Edtherson_87, Gandalf20_90, HarryOW_91, HermioneGrange_94, IgnatiusPatJac_87, JC27_94, JackSparrow_92, Jerm2_90, Jorgensen_100, Killigrew_87, Lamina13_93, Lesedi_88, MPlant7149_90, Marge_87, Marsha_93, Mule_92, Nerujay_93, Nhonho_87, Paraselene_87, Pari_92, Parliament_90, Perseus_90, Peterson_90, PherrisBueller_88, PhrostyMug_94, Pippin_93, RidgeCB_89, Rohr_92, Rutherferd_91, Sagefire_86, SkiPole_98, Smairt_97, Smeagol_90, Solon_83, StewieG_86, StrongArm_88, Sumter_87, Sunshine924_93, Tasp14_87, Topgun_89, Trouble_90, Wilkins_90, Zeeculate_91,

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

-

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

- 40AC_82, AN9_85, ANI8_85, AbbysRanger_82, Achebe_81, Aneem_90, AnnaL29_88, Arcanine_94, Ariel_241, Artemis2UCLA_88, BABullseye_80, BabyBack_79, BabyRay_87, Bachome_87, Backyardigan_80, Badger_81,

Baehexic_85, Beem_238, BigPaolini_85, Blinn1_90, Blue7_90, BlueBird_89, Bobby_213, Bombitas_219, Bowtie_85, Bud_82, Bugatti_88, Bumblebee11_81, C3_78, Candra_85, Caviar_75, Centaur_86, Changeling_84, Chartreuse_85, Chupacabra_81, Ciao_94, Cici_82, Cintron_85, CloudWang3_89, Colin_85, Constella_224, Cookiedough_87, Courthouse_237, DBQu4n_86, DaVinci_85, Dallas_233, DmpstrDiver_233, Dorothea_84, Dove_226, Drake55_87, Drake94_81, Druantia_84, Duke13_235, Duplo_87, EZMoney23_82, EagleEye_87, Eaglepride_87, Ebony_88, Ejimix_226, Equemioh13_86, EricB_85, EricMillard_232, Et2Brutus_89, Fibonacci_89, Flare16_86, Flaverint_90, Fred313_84, Gail_88, Garak_90, GaugeLDP_80, Gilberta_87, Giroux_85, Gladiator_85, Goose_85, GreedyLawyer_80, Gruunaga_88, Halley_237, Hammer_89, Hannaconda_225, HarryHoudini_86, Heathen_86, HelDan_86, Helmet_90, Hexamo_88, HokkenD_227, Hookmount_86, Hoot_82, Hughesyang_237, Hutc2_86, Indra_92, Insomnia_88, Isca_83, Isiphiwo_83, Jabith_89, JewelBug_79, Jordennis_85, Joselito_87, Journey13_69, Jsquared_90, JuicyJay_230, Kalah2_224, Kalpine_88, KashFlow_227, Katalie136_82, Kazan_88, Kerberos_86, Kimona_86, Kipper29_87, KittenMittens_79, Klein_242, Koduck_86, Koko_90, Kremtemulon_79, Kristoff_82, L5_79, Lambert1_86, Larenn_85, Licorice_91, LittleE_224, Loser_89, Lucivia_90, Lucky2013_232, Lucyedi_86, MaCh_89, Mabel_89, Malec_85, Margo_86, McFly_87, MiaZeal_245, MiculUcigas_86, Minerva_233, MissWhite_79, Morpher26_82, Mulciber_88, Munch_88, NaSiaTalie_87, Neeharika16_86, Newrala_86, NihilNomen_236, Noella_87, Norbert_82, OKCentral2016_83, Odette_234, Orange_89, PainterBoy_85, Panamaxus_82, PeaceMeal1_81, Perplexer_82, Petersenfast_83, PetiteSangsue_82, Phantastic_87, Phlei_72, Phoebus_233, Piro94_85, Pistachio_87, Pmask_86, Pocahontas_85, Pomar16_86, Poompha_81, Popcicle_86, Porcelain_236, Pound_223, Priamo_88, Puppy_88, QuinnKiro_85, Rajelicia_89, Rebeuca_85, RedRock_86, Redno2_226, ResDef_84, RhynO_72, Rhynn_85, Rifter_89, Ringer_90, Rockstar_75, Roksolana_89, Salz_85, SaturnRing_88, Schatzie_227, Scout_86, Serenity_89, Severus_82, Sham4_86, Sheen_83, SmellyB_87, Snape_89, SororFago_85, Squint_233, StarStuff_86, SuperAwesome_87, SuperCallie99_83, Superphikiman_233, TNguyen7_88, Texage_84, Thibault_209, ThreeRngTarjay_234, Timothy_89, Timshel_82, TinyTimmy_87, TipsytheTRex_85, Todacoro_86, Tomathan_86, ToneTone_86, Topanga_74, Tucker_89, Twister_85, Updawg_87, VC3_84, Veracruz_83, VohminGhazi_87, WalterMcMickey_84, Wanda_234, WeiHuaDA_88, WideWale_87, Wiks_88, Wile_81, Wizard007_82, Yeet_229, Yokurt_88, Zaka_89, Zelink_228, Zulu_90,

Summary by start number:

Start 39:

- Found in 1 of 281 (0.4%) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Blinn1_90 (A6),

Start 41:

- Found in 1 of 281 (0.4%) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Timshel_82 (A7),

Start 42:

- Found in 8 of 281 (2.8%) of genes in pham
- Manual Annotations of this start: 5 of 255
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Eaglepride_87 (A10), Kristoff_82 (A10), Rebeuca_85 (A10), Topanga_74 (A10), WalterMcMickey_84 (A10),

Start 43:

- Found in 7 of 281 (2.5%) of genes in pham
- Manual Annotations of this start: 4 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueBird_89 (A3), Bugatti_88 (A3), Giroux_85 (A3), Pistachio_87 (A3), Puppy_88 (A3), SaturnRing_88 (A3), TNguyen7_88 (A3),

Start 44:

- Found in 6 of 281 (2.1%) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Twister_85 (A10),

Start 46:

- Found in 35 of 281 (12.5%) of genes in pham
- Manual Annotations of this start: 23 of 255
- Called 65.7% of time when present
- Phage (with cluster) where this start called: BABullseye_80 (A6), Blue7_90 (A6), Cookiedough_87 (A6), DaVinci_85 (A6), EagleEye_87 (A16), Hoot_82 (A6), Indra_92 (A6), Isiphiwo_83 (A6), JewelBug_79 (A6), Jordennis_85 (A6), Kazan_88 (A6), Kipper29_87 (A6), Koko_90 (A6), Lucyedi_86 (A16), McFly_87 (A6), Newrala_86 (A6), PainterBoy_85 (A16), Pmask_86 (A6), SmellyB_87 (A6), SuperAwesome_87 (A6), VohminGhazi_87 (A6), Wiks_88 (A6), Zulu_90 (A6),

Start 48:

- Found in 31 of 281 (11.0%) of genes in pham
- Manual Annotations of this start: 3 of 255
- Called 9.7% of time when present
- Phage (with cluster) where this start called: AnnaL29_88 (A2), Jsquared_90 (A2), L5_79 (A2),

Start 49:

- Found in 26 of 281 (9.3%) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 3.8% of time when present
- Phage (with cluster) where this start called: Pound_223 (J),

Start 51:

- Found in 1 of 281 (0.4%) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BabyRay_87 (A3),

Start 52:

- Found in 7 of 281 (2.5%) of genes in pham
- Manual Annotations of this start: 3 of 255

- Called 42.9% of time when present
- Phage (with cluster) where this start called: HokkenD_227 (J), Kalah2_224 (J), NihilNomen_236 (J),

Start 53:

- Found in 13 of 281 (4.6%) of genes in pham
- Manual Annotations of this start: 7 of 255
- Called 53.8% of time when present
- Phage (with cluster) where this start called: Achebe_81 (A4), Backyardigan_80 (A4), Badger_81 (A4), Cici_82 (A4), Druantia_84 (A4), Wile_81 (A4), Wizard007_82 (A4),

Start 54:

- Found in 1 of 281 (0.4%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phlei_72 (A13),

Start 55:

- Found in 19 of 281 (6.8%) of genes in pham
- Manual Annotations of this start: 15 of 255
- Called 84.2% of time when present
- Phage (with cluster) where this start called: AN9_85 (A2), ANI8_85 (A2), C3_78 (A2), Changeling_84 (A2), DBQu4n_86 (A2), Duplo_87 (A2), Kerberos_86 (A2), Koduck_86 (A2), Loser_89 (A2), Pomar16_86 (A2), RedRock_86 (A2), Serenity_89 (A2), StarStuff_86 (A2), TipsytheTRex_85 (A2), Tomathan_86 (A2), VC3_84 (A2),

Start 56:

- Found in 71 of 281 (25.3%) of genes in pham
- Manual Annotations of this start: 36 of 255
- Called 66.2% of time when present
- Phage (with cluster) where this start called: 40AC_82 (A17), Artemis2UCLA_88 (A6), BabyBack_79 (A2), Bachome_87 (A11), Baehexic_85 (A2), Candra_85 (A6), Centaur_86 (A2), Chartreuse_85 (A6), CloudWang3_89 (A6), Colin_85 (A2), Dorothea_84 (A6), Drake55_87 (A2), EZMoney23_82 (A2), Equemioh13_86 (A2), EricB_85 (A6), Flare16_86 (A2), Gail_88 (A14), Garak_90 (A6), GaugeLDP_80 (A2), Gladiator_85 (A6), GreedyLawyer_80 (A6), Gruunaga_88 (A6), Hammer_89 (A6), HarryHoudini_86 (A2), Helmet_90 (A6), Hexamo_88 (A6), Journey13_69 (A2), Kalpine_88 (A2), Larenn_85 (A2), Malec_85 (A2), MiculUcigas_86 (A2), MissWhite_79 (A2), NaSiaTalie_87 (A2), Neeharika16_86 (A6), Piro94_85 (A2), Priamo_88 (A6), Rifter_89 (A6), Roksolana_89 (A6), SororFago_85 (A14), SuperCallie99_83 (A6), ToneTone_86 (A6), Tucker_89 (A6), Updawg_87 (A2), WeiHuaDA_88 (A2), WideWale_87 (A2), Yokurt_88 (A6), Zaka_89 (A6),

Start 58:

- Found in 38 of 281 (13.5%) of genes in pham
- Manual Annotations of this start: 32 of 255
- Called 89.5% of time when present
- Phage (with cluster) where this start called: Ariel_241 (J), Beem_238 (J), Bobby_213 (J), Bombitas_219 (J), Constella_224 (J), Courthouse_237 (J), Dallas_233 (J), DmpstrDiver_233 (J), Dove_226 (J), Duke13_235 (J), Ejimix_226 (J), EricMillard_232 (J), Halley_237 (J), Hannaconda_225 (J), Hughesyang_237 (J), JuicyJay_230 (J), KashFlow_227 (J), Klein_242 (J), LittleE_224 (J), Lucky2013_232 (J), MiaZeal_245 (J), Minerva_233 (J), Odette_234 (J), Phoebus_233 (J),

Porcelain_236 (J), Redno2_226 (J), Schatzie_227 (J), Squint_233 (J), Superphikiman_233 (J), Thibault_209 (J), ThreeRngTarjay_234 (J), Wanda_234 (J), Yeet_229 (J), Zelink_228 (J),

Start 60:

- Found in 30 of 281 (10.7%) of genes in pham
- Manual Annotations of this start: 26 of 255
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Caviar_75 (A3), Chupacabra_81 (A10), Drake94_81 (A10), Fred313_84 (A3), Goose_85 (A10), Heathen_86 (A3), HelDan_86 (A3), Hookmount_86 (A3), KittenMittens_79 (A10), Lambert1_86 (A3), Margo_86 (A3), Noella_87 (A3), Norbert_82 (A3), OKCentral2016_83 (A10), Panamaxus_82 (A3), PeaceMeal1_81 (A10), Pocahontas_85 (A3), Poompha_81 (A10), Popcicle_86 (A3), QuinnKiro_85 (A3), ResDef_84 (A3), RhynO_72 (A10), Scout_86 (A3), Severus_82 (A10), Texage_84 (A3), Todacoro_86 (A3), Veracruz_83 (A3),

Start 61:

- Found in 1 of 281 (0.4%) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kimona_86 (A19),

Start 62:

- Found in 59 of 281 (21.0%) of genes in pham
- Manual Annotations of this start: 56 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A6_85 (A1), Abrogate_880 (A1), Aeneas_96 (A1), Alsfro_94 (A1), Applejack_89 (A1), Ashballer_91 (A1), BK1_85 (A1), BaconJack_94 (A1), Barriga_101 (A1), Beatrix_89 (A1), Bexan_87 (A1), Big3_91 (A1), BigMau_91 (A1), BluSpix_84 (A1), Bob3_90 (A1), Bones_86 (A1), Edtherson_87 (A1), Gandalf20_90 (A1), HarryOW_91 (A1), HermioneGrange_94 (A1), IgnatiusPatJac_87 (A1), JC27_94 (A1), JackSparrow_92 (A1), Jerm2_90 (A1), Jorgensen_100 (A1), Killigrew_87 (A1), Lamina13_93 (A1), Lesedi_88 (A1), MPlant7149_90 (A1), Marge_87 (A1), Marsha_93 (A1), Mule_92 (A1), Nerujay_93 (A1), Nhonho_87 (A1), Paraselene_87 (A1), Pari_92 (A1), Parliament_90 (A1), Perseus_90 (A1), Peterson_90 (A1), PherrisBueller_88 (A1), PhrostyMug_94 (A1), Pippin_93 (A1), RidgeCB_89 (A1), Rohr_92 (A1), Rutherford_91 (A1), Sagefire_86 (A1), SkiPole_98 (A1), Smairt_97 (A1), Smeagol_90 (A1), Solon_83 (A1), StewieG_86 (A1), StrongArm_88 (A1), Sumter_87 (A1), Sunshine924_93 (A1), Tasp14_87 (A1), Topgun_89 (A1), Trouble_90 (A1), Wilkins_90 (A1), Zeeculate_91 (A1),

Start 63:

- Found in 7 of 281 (2.5%) of genes in pham
- Manual Annotations of this start: 7 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arcanine_94 (A1), BigPaolini_85 (A1), Ciao_94 (A1), Licorice_91 (A1), Rajelicia_89 (A1), Rhynn_85 (A1), Ringer_90 (A1),

Start 64:

- Found in 1 of 281 (0.4%) of genes in pham
- Manual Annotations of this start: 1 of 255
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Sheen_83 (A7),

Start 65:

- Found in 27 of 281 (9.6%) of genes in pham
- Manual Annotations of this start: 21 of 255
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Aneem_90 (A11), Bowtie_85 (A11), Bud_82 (A11), Ebony_88 (A11), Et2Brutus_89 (A11), Fibonacci_89 (A11), Flaverint_90 (A11), Gilberta_87 (A11), Hutc2_86 (A11), Insomnia_88 (A11), Jabith_89 (A11), Joselito_87 (A11), Lucivia_90 (A11), MaCh_89 (A11), Mabel_89 (A11), Mulciber_88 (A11), Munch_88 (A11), Orange_89 (A11), Petersenfast_83 (A11), Salz_85 (A11), Sham4_86 (A11), Snape_89 (A11), Timothy_89 (A11), TinyTimmy_87 (A11),

Start 66:

- Found in 3 of 281 (1.1%) of genes in pham
- Manual Annotations of this start: 3 of 255
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Isca_83 (A3), Phantastic_87 (A3), Rockstar_75 (A3),

Start 71:

- Found in 26 of 281 (9.3%) of genes in pham
- Manual Annotations of this start: 7 of 255
- Called 30.8% of time when present
- Phage (with cluster) where this start called: AbbysRanger_82 (A4), Bumblebee11_81 (A4), Cintron_85 (A4), Katalie136_82 (A4), Kremtemulon_79 (A4), Morpher26_82 (A4), Perplexer_82 (A4), PetiteSangsue_82 (A4),

Summary by clusters:

There are 14 clusters represented in this pham: A14, A17, A16, A11, A10, A13, J, A19, A1, A3, A2, A4, A7, A6,

Info for manual annotations of cluster A1:

- Start number 62 was manually annotated 56 times for cluster A1.
- Start number 63 was manually annotated 7 times for cluster A1.

Info for manual annotations of cluster A10:

- Start number 42 was manually annotated 5 times for cluster A10.
- Start number 44 was manually annotated 1 time for cluster A10.
- Start number 60 was manually annotated 9 times for cluster A10.

Info for manual annotations of cluster A11:

- Start number 56 was manually annotated 1 time for cluster A11.
- Start number 65 was manually annotated 21 times for cluster A11.

Info for manual annotations of cluster A14:

- Start number 56 was manually annotated 2 times for cluster A14.

Info for manual annotations of cluster A16:

- Start number 46 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A19:

- Start number 61 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A2:

- Start number 48 was manually annotated 3 times for cluster A2.
- Start number 55 was manually annotated 15 times for cluster A2.
- Start number 56 was manually annotated 17 times for cluster A2.

Info for manual annotations of cluster A3:

- Start number 43 was manually annotated 4 times for cluster A3.
- Start number 51 was manually annotated 1 time for cluster A3.
- Start number 60 was manually annotated 17 times for cluster A3.
- Start number 66 was manually annotated 3 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 53 was manually annotated 7 times for cluster A4.
- Start number 71 was manually annotated 7 times for cluster A4.

Info for manual annotations of cluster A6:

- Start number 39 was manually annotated 1 time for cluster A6.
- Start number 46 was manually annotated 20 times for cluster A6.
- Start number 56 was manually annotated 16 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 41 was manually annotated 1 time for cluster A7.
- Start number 64 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster J:

- Start number 49 was manually annotated 1 time for cluster J.
- Start number 52 was manually annotated 3 times for cluster J.
- Start number 58 was manually annotated 32 times for cluster J.

Gene Information:

Gene: 40AC_82 Start: 48479, Stop: 48276, Start Num: 56

Candidate Starts for 40AC_82:

(Start: 56 @48479 has 36 MA's), (77, 48428), (87, 48344),

Gene: A6_85 Start: 49336, Stop: 49130, Start Num: 62

Candidate Starts for A6_85:

(Start: 62 @49336 has 56 MA's), (86, 49198),

Gene: AN9_85 Start: 47253, Stop: 47056, Start Num: 55

Candidate Starts for AN9_85:

(Start: 55 @47253 has 15 MA's), (77, 47199), (87, 47121),

Gene: ANI8_85 Start: 47253, Stop: 47056, Start Num: 55

Candidate Starts for ANI8_85:

(Start: 55 @47253 has 15 MA's), (77, 47199), (87, 47121),

Gene: AbbysRanger_82 Start: 48599, Stop: 48441, Start Num: 71
Candidate Starts for AbbysRanger_82:
(Start: 53 @48638 has 7 MA's), (Start: 71 @48599 has 7 MA's), (73, 48590), (87, 48503), (89, 48470),

Gene: Abrogate_880 Start: 50891, Stop: 51097, Start Num: 62
Candidate Starts for Abrogate_880:
(Start: 62 @50891 has 56 MA's), (86, 51029), (92, 51089),

Gene: Achebe_81 Start: 48782, Stop: 48585, Start Num: 53
Candidate Starts for Achebe_81:
(Start: 53 @48782 has 7 MA's), (Start: 71 @48743 has 7 MA's), (73, 48734), (87, 48647), (89, 48614),

Gene: Aeneas_96 Start: 52191, Stop: 52397, Start Num: 62
Candidate Starts for Aeneas_96:
(Start: 62 @52191 has 56 MA's), (86, 52329),

Gene: Alsfro_94 Start: 49646, Stop: 49846, Start Num: 62
Candidate Starts for Alsfro_94:
(Start: 62 @49646 has 56 MA's), (86, 49778),

Gene: Aneem_90 Start: 48299, Stop: 48102, Start Num: 65
Candidate Starts for Aneem_90:
(Start: 65 @48299 has 21 MA's), (87, 48170), (92, 48113),

Gene: AnnaL29_88 Start: 49242, Stop: 49006, Start Num: 48
Candidate Starts for AnnaL29_88:
(22, 49371), (Start: 48 @49242 has 3 MA's), (Start: 55 @49227 has 15 MA's), (87, 49074), (89, 49041),

Gene: Applejack_89 Start: 48130, Stop: 48336, Start Num: 62
Candidate Starts for Applejack_89:
(Start: 62 @48130 has 56 MA's), (86, 48268), (92, 48328),

Gene: Arcanine_94 Start: 51887, Stop: 51687, Start Num: 63
Candidate Starts for Arcanine_94:
(Start: 63 @51887 has 7 MA's), (86, 51755),

Gene: Ariel_241 Start: 107734, Stop: 107546, Start Num: 58
Candidate Starts for Ariel_241:
(Start: 49 @107755 has 1 MA's), (Start: 58 @107734 has 32 MA's), (77, 107692), (85, 107653), (89, 107581), (92, 107557),

Gene: Artemis2UCLA_88 Start: 46537, Stop: 46328, Start Num: 56
Candidate Starts for Artemis2UCLA_88:
(Start: 56 @46537 has 36 MA's), (81, 46477),

Gene: Ashballer_91 Start: 50593, Stop: 50799, Start Num: 62
Candidate Starts for Ashballer_91:
(Start: 62 @50593 has 56 MA's), (86, 50731), (92, 50791),

Gene: BABullseye_80 Start: 44890, Stop: 44648, Start Num: 46
Candidate Starts for BABullseye_80:

(6, 45139), (17, 45055), (21, 45031), (Start: 46 @44890 has 23 MA's), (Start: 56 @44866 has 36 MA's), (84, 44770), (89, 44686),

Gene: BK1_85 Start: 49336, Stop: 49130, Start Num: 62

Candidate Starts for BK1_85:

(Start: 62 @49336 has 56 MA's), (86, 49198),

Gene: BabyBack_79 Start: 48271, Stop: 48068, Start Num: 56

Candidate Starts for BabyBack_79:

(29, 48391), (36, 48343), (Start: 56 @48271 has 36 MA's), (76, 48220), (87, 48136),

Gene: BabyRay_87 Start: 47952, Stop: 47743, Start Num: 51

Candidate Starts for BabyRay_87:

(Start: 51 @47952 has 1 MA's), (67, 47919), (77, 47889), (87, 47814), (89, 47781),

Gene: Bachome_87 Start: 47191, Stop: 46985, Start Num: 56

Candidate Starts for Bachome_87:

(Start: 48 @47206 has 3 MA's), (Start: 56 @47191 has 36 MA's), (77, 47137), (83, 47113), (87, 47053), (92, 46996),

Gene: Backyardigan_80 Start: 48654, Stop: 48457, Start Num: 53

Candidate Starts for Backyardigan_80:

(Start: 53 @48654 has 7 MA's), (Start: 71 @48615 has 7 MA's), (73, 48606), (87, 48519), (89, 48486),

Gene: BaconJack_94 Start: 52144, Stop: 52350, Start Num: 62

Candidate Starts for BaconJack_94:

(Start: 62 @52144 has 56 MA's), (86, 52282), (92, 52342),

Gene: Badger_81 Start: 48620, Stop: 48423, Start Num: 53

Candidate Starts for Badger_81:

(Start: 53 @48620 has 7 MA's), (Start: 71 @48581 has 7 MA's), (73, 48572), (87, 48485), (89, 48452),

Gene: Baehexic_85 Start: 48457, Stop: 48251, Start Num: 56

Candidate Starts for Baehexic_85:

(16, 48655), (Start: 48 @48472 has 3 MA's), (Start: 56 @48457 has 36 MA's), (77, 48403), (87, 48319),

Gene: Barriga_101 Start: 51933, Stop: 52139, Start Num: 62

Candidate Starts for Barriga_101:

(Start: 62 @51933 has 56 MA's), (86, 52071),

Gene: Beatrix_89 Start: 50789, Stop: 50995, Start Num: 62

Candidate Starts for Beatrix_89:

(Start: 62 @50789 has 56 MA's), (86, 50927),

Gene: Beem_238 Start: 110940, Stop: 110764, Start Num: 58

Candidate Starts for Beem_238:

(Start: 49 @110961 has 1 MA's), (Start: 58 @110940 has 32 MA's), (77, 110898), (85, 110871),

Gene: Bexan_87 Start: 50565, Stop: 50771, Start Num: 62

Candidate Starts for Bexan_87:

(Start: 62 @50565 has 56 MA's), (86, 50703),

Gene: Big3_91 Start: 53046, Stop: 52840, Start Num: 62
Candidate Starts for Big3_91:
(Start: 62 @53046 has 56 MA's),

Gene: BigMau_91 Start: 51153, Stop: 51362, Start Num: 62
Candidate Starts for BigMau_91:
(Start: 62 @51153 has 56 MA's), (86, 51291),

Gene: BigPaolini_85 Start: 49205, Stop: 49005, Start Num: 63
Candidate Starts for BigPaolini_85:
(Start: 63 @49205 has 7 MA's), (86, 49073),

Gene: Blinn1_90 Start: 47426, Stop: 47145, Start Num: 39
Candidate Starts for Blinn1_90:
(Start: 39 @47426 has 1 MA's), (50, 47381), (57, 47366), (59, 47360), (77, 47309), (86, 47219), (87, 47216),

Gene: BluSpix_84 Start: 44982, Stop: 45182, Start Num: 62
Candidate Starts for BluSpix_84:
(Start: 62 @44982 has 56 MA's), (86, 45114),

Gene: Blue7_90 Start: 46789, Stop: 46547, Start Num: 46
Candidate Starts for Blue7_90:
(6, 47038), (17, 46954), (21, 46930), (Start: 46 @46789 has 23 MA's), (Start: 56 @46765 has 36 MA's), (84, 46669),

Gene: BlueBird_89 Start: 48203, Stop: 47985, Start Num: 43
Candidate Starts for BlueBird_89:
(37, 48230), (Start: 43 @48203 has 4 MA's), (70, 48140), (74, 48122), (87, 48050),

Gene: Bob3_90 Start: 50587, Stop: 50793, Start Num: 62
Candidate Starts for Bob3_90:
(Start: 62 @50587 has 56 MA's), (86, 50725), (92, 50785),

Gene: Bobby_213 Start: 108407, Stop: 108219, Start Num: 58
Candidate Starts for Bobby_213:
(Start: 58 @108407 has 32 MA's), (Start: 71 @108383 has 7 MA's), (77, 108365), (85, 108326), (89, 108254), (92, 108230),

Gene: Bombitas_219 Start: 107223, Stop: 107050, Start Num: 58
Candidate Starts for Bombitas_219:
(Start: 49 @107244 has 1 MA's), (Start: 58 @107223 has 32 MA's), (77, 107181), (85, 107154),

Gene: Bones_86 Start: 51038, Stop: 51244, Start Num: 62
Candidate Starts for Bones_86:
(Start: 62 @51038 has 56 MA's), (86, 51176),

Gene: Bowtie_85 Start: 46906, Stop: 46709, Start Num: 65
Candidate Starts for Bowtie_85:
(Start: 65 @46906 has 21 MA's), (87, 46777), (92, 46720),

Gene: Bud_82 Start: 46736, Stop: 46539, Start Num: 65
Candidate Starts for Bud_82:

(5, 47042), (Start: 65 @46736 has 21 MA's), (87, 46607), (92, 46550),

Gene: Bugatti_88 Start: 48203, Stop: 47985, Start Num: 43

Candidate Starts for Bugatti_88:

(37, 48230), (Start: 43 @48203 has 4 MA's), (70, 48140), (74, 48122), (87, 48050),

Gene: Bumblebee11_81 Start: 48581, Stop: 48423, Start Num: 71

Candidate Starts for Bumblebee11_81:

(Start: 53 @48620 has 7 MA's), (Start: 71 @48581 has 7 MA's), (73, 48572), (87, 48485), (89, 48452),

Gene: C3_78 Start: 47253, Stop: 47056, Start Num: 55

Candidate Starts for C3_78:

(Start: 55 @47253 has 15 MA's), (77, 47199), (87, 47121),

Gene: Candra_85 Start: 46570, Stop: 46352, Start Num: 56

Candidate Starts for Candra_85:

(6, 46843), (17, 46759), (21, 46735), (Start: 46 @46594 has 23 MA's), (Start: 56 @46570 has 36 MA's), (84, 46474), (89, 46390),

Gene: Caviar_75 Start: 44830, Stop: 44630, Start Num: 60

Candidate Starts for Caviar_75:

(19, 45019), (Start: 60 @44830 has 26 MA's), (80, 44770), (87, 44704), (89, 44671),

Gene: Centaur_86 Start: 48324, Stop: 48118, Start Num: 56

Candidate Starts for Centaur_86:

(16, 48522), (Start: 48 @48339 has 3 MA's), (Start: 56 @48324 has 36 MA's), (77, 48270), (87, 48186),

Gene: Changeling_84 Start: 49033, Stop: 48812, Start Num: 55

Candidate Starts for Changeling_84:

(26, 49165), (Start: 48 @49048 has 3 MA's), (Start: 55 @49033 has 15 MA's), (Start: 71 @49000 has 7 MA's), (72, 48997), (86, 48883), (89, 48847),

Gene: Chartreuse_85 Start: 45871, Stop: 45653, Start Num: 56

Candidate Starts for Chartreuse_85:

(6, 46144), (17, 46060), (21, 46036), (Start: 46 @45895 has 23 MA's), (Start: 56 @45871 has 36 MA's), (84, 45775), (89, 45691),

Gene: Chupacabra_81 Start: 48564, Stop: 48376, Start Num: 60

Candidate Starts for Chupacabra_81:

(45, 48597), (Start: 60 @48564 has 26 MA's), (86, 48444), (87, 48441),

Gene: Ciao_94 Start: 50559, Stop: 50362, Start Num: 63

Candidate Starts for Ciao_94:

(Start: 63 @50559 has 7 MA's), (86, 50430),

Gene: Cici_82 Start: 48633, Stop: 48436, Start Num: 53

Candidate Starts for Cici_82:

(Start: 53 @48633 has 7 MA's), (Start: 71 @48594 has 7 MA's), (73, 48585), (87, 48498), (89, 48465),

Gene: Cintron_85 Start: 48872, Stop: 48702, Start Num: 71

Candidate Starts for Cintron_85:

(Start: 71 @48872 has 7 MA's), (73, 48863), (87, 48776), (89, 48743),

Gene: CloudWang3_89 Start: 47066, Stop: 46857, Start Num: 56

Candidate Starts for CloudWang3_89:

(Start: 56 @47066 has 36 MA's), (81, 47006),

Gene: Colin_85 Start: 49399, Stop: 49190, Start Num: 56

Candidate Starts for Colin_85:

(16, 49606), (22, 49546), (25, 49531), (Start: 48 @49414 has 3 MA's), (Start: 56 @49399 has 36 MA's), (68, 49375), (69, 49372), (87, 49258),

Gene: Constella_224 Start: 108319, Stop: 108131, Start Num: 58

Candidate Starts for Constella_224:

(Start: 58 @108319 has 32 MA's), (Start: 71 @108295 has 7 MA's), (77, 108277), (85, 108238), (89, 108166), (92, 108142),

Gene: Cookiedough_87 Start: 47203, Stop: 46961, Start Num: 46

Candidate Starts for Cookiedough_87:

(6, 47452), (17, 47368), (21, 47344), (Start: 46 @47203 has 23 MA's), (Start: 56 @47179 has 36 MA's), (84, 47083), (89, 46999),

Gene: Courthouse_237 Start: 108498, Stop: 108310, Start Num: 58

Candidate Starts for Courthouse_237:

(Start: 49 @108519 has 1 MA's), (Start: 58 @108498 has 32 MA's), (77, 108456), (85, 108417), (89, 108345), (92, 108321),

Gene: DBQu4n_86 Start: 48304, Stop: 48101, Start Num: 55

Candidate Starts for DBQu4n_86:

(Start: 55 @48304 has 15 MA's), (77, 48250), (87, 48166),

Gene: DaVinci_85 Start: 45949, Stop: 45707, Start Num: 46

Candidate Starts for DaVinci_85:

(6, 46198), (17, 46114), (21, 46090), (Start: 46 @45949 has 23 MA's), (Start: 56 @45925 has 36 MA's), (84, 45829), (89, 45745),

Gene: Dallas_233 Start: 109177, Stop: 108995, Start Num: 58

Candidate Starts for Dallas_233:

(Start: 52 @109192 has 3 MA's), (Start: 58 @109177 has 32 MA's), (77, 109141), (85, 109102), (89, 109030),

Gene: DmpstrDiver_233 Start: 109198, Stop: 109022, Start Num: 58

Candidate Starts for DmpstrDiver_233:

(Start: 58 @109198 has 32 MA's), (Start: 71 @109174 has 7 MA's), (77, 109156), (85, 109129), (89, 109057), (90, 109042),

Gene: Dorothea_84 Start: 47171, Stop: 46953, Start Num: 56

Candidate Starts for Dorothea_84:

(6, 47444), (17, 47360), (21, 47336), (Start: 46 @47195 has 23 MA's), (Start: 56 @47171 has 36 MA's), (84, 47075), (89, 46991),

Gene: Dove_226 Start: 105704, Stop: 105528, Start Num: 58

Candidate Starts for Dove_226:

(Start: 49 @105725 has 1 MA's), (Start: 58 @105704 has 32 MA's), (77, 105662), (85, 105635),

Gene: Drake55_87 Start: 48575, Stop: 48369, Start Num: 56
Candidate Starts for Drake55_87:
(16, 48773), (Start: 48 @48590 has 3 MA's), (Start: 56 @48575 has 36 MA's), (87, 48437),

Gene: Drake94_81 Start: 47718, Stop: 47530, Start Num: 60
Candidate Starts for Drake94_81:
(45, 47751), (Start: 60 @47718 has 26 MA's), (87, 47595),

Gene: Druantia_84 Start: 48829, Stop: 48632, Start Num: 53
Candidate Starts for Druantia_84:
(Start: 53 @48829 has 7 MA's), (Start: 71 @48790 has 7 MA's), (73, 48781), (87, 48694), (89, 48661),

Gene: Duke13_235 Start: 110008, Stop: 109820, Start Num: 58
Candidate Starts for Duke13_235:
(Start: 52 @110023 has 3 MA's), (Start: 58 @110008 has 32 MA's), (Start: 71 @109984 has 7 MA's),
(77, 109966), (85, 109927), (86, 109891), (89, 109855), (92, 109831),

Gene: Duplo_87 Start: 48361, Stop: 48158, Start Num: 55
Candidate Starts for Duplo_87:
(Start: 55 @48361 has 15 MA's), (77, 48307), (87, 48223),

Gene: EZMoney23_82 Start: 48034, Stop: 47822, Start Num: 56
Candidate Starts for EZMoney23_82:
(11, 48262), (22, 48181), (Start: 48 @48049 has 3 MA's), (Start: 56 @48034 has 36 MA's), (67,
48013), (75, 47983), (87, 47890),

Gene: EagleEye_87 Start: 48171, Stop: 47941, Start Num: 46
Candidate Starts for EagleEye_87:
(Start: 46 @48171 has 23 MA's), (Start: 56 @48147 has 36 MA's), (Start: 60 @48135 has 26 MA's),
(Start: 65 @48123 has 21 MA's), (77, 48084),

Gene: Eaglepride_87 Start: 48695, Stop: 48462, Start Num: 42
Candidate Starts for Eaglepride_87:
(14, 48872), (28, 48776), (Start: 42 @48695 has 5 MA's), (Start: 44 @48680 has 1 MA's), (47, 48671),
(87, 48527),

Gene: Ebony_88 Start: 47870, Stop: 47673, Start Num: 65
Candidate Starts for Ebony_88:
(Start: 65 @47870 has 21 MA's), (87, 47741), (92, 47684),

Gene: Edtherson_87 Start: 49832, Stop: 50038, Start Num: 62
Candidate Starts for Edtherson_87:
(Start: 62 @49832 has 56 MA's), (86, 49970), (92, 50030),

Gene: Ejimix_226 Start: 109183, Stop: 109007, Start Num: 58
Candidate Starts for Ejimix_226:
(Start: 49 @109204 has 1 MA's), (Start: 58 @109183 has 32 MA's), (77, 109141), (85, 109114),

Gene: Equemioh13_86 Start: 48553, Stop: 48347, Start Num: 56
Candidate Starts for Equemioh13_86:
(16, 48751), (Start: 48 @48568 has 3 MA's), (Start: 56 @48553 has 36 MA's), (77, 48499), (87,
48415),

Gene: EricB_85 Start: 46068, Stop: 45850, Start Num: 56
Candidate Starts for EricB_85:
(6, 46341), (17, 46257), (21, 46233), (Start: 46 @46092 has 23 MA's), (Start: 56 @46068 has 36 MA's), (84, 45972), (89, 45888),

Gene: EricMillard_232 Start: 111027, Stop: 110851, Start Num: 58
Candidate Starts for EricMillard_232:
(Start: 49 @111048 has 1 MA's), (Start: 58 @111027 has 32 MA's), (77, 110985), (85, 110958),

Gene: Et2Brutus_89 Start: 48147, Stop: 47950, Start Num: 65
Candidate Starts for Et2Brutus_89:
(Start: 65 @48147 has 21 MA's), (87, 48018), (92, 47961),

Gene: Fibonacci_89 Start: 48153, Stop: 47956, Start Num: 65
Candidate Starts for Fibonacci_89:
(Start: 65 @48153 has 21 MA's), (87, 48024), (92, 47967),

Gene: Flare16_86 Start: 48368, Stop: 48162, Start Num: 56
Candidate Starts for Flare16_86:
(16, 48566), (Start: 48 @48383 has 3 MA's), (Start: 56 @48368 has 36 MA's), (77, 48314), (87, 48230),

Gene: Flaverint_90 Start: 48297, Stop: 48100, Start Num: 65
Candidate Starts for Flaverint_90:
(Start: 65 @48297 has 21 MA's), (87, 48168), (88, 48150), (92, 48111),

Gene: Fred313_84 Start: 47806, Stop: 47615, Start Num: 60
Candidate Starts for Fred313_84:
(1, 48295), (2, 48262), (8, 48079), (Start: 60 @47806 has 26 MA's), (80, 47746), (87, 47680),

Gene: Gail_88 Start: 48344, Stop: 48141, Start Num: 56
Candidate Starts for Gail_88:
(Start: 48 @48359 has 3 MA's), (Start: 56 @48344 has 36 MA's), (77, 48293), (87, 48209),

Gene: Gandalf20_90 Start: 50084, Stop: 50290, Start Num: 62
Candidate Starts for Gandalf20_90:
(Start: 62 @50084 has 56 MA's), (86, 50222), (92, 50282),

Gene: Garak_90 Start: 47008, Stop: 46790, Start Num: 56
Candidate Starts for Garak_90:
(6, 47281), (17, 47197), (21, 47173), (Start: 46 @47032 has 23 MA's), (Start: 56 @47008 has 36 MA's), (84, 46912),

Gene: GaugeLDP_80 Start: 47824, Stop: 47624, Start Num: 56
Candidate Starts for GaugeLDP_80:
(Start: 56 @47824 has 36 MA's), (76, 47773), (87, 47692),

Gene: Gilberta_87 Start: 47173, Stop: 46976, Start Num: 65
Candidate Starts for Gilberta_87:
(Start: 65 @47173 has 21 MA's), (87, 47044), (92, 46987),

Gene: Giroux_85 Start: 48202, Stop: 47984, Start Num: 43
Candidate Starts for Giroux_85:

(37, 48229), (Start: 43 @48202 has 4 MA's), (70, 48139), (74, 48121), (87, 48049),

Gene: Gladiator_85 Start: 46722, Stop: 46513, Start Num: 56

Candidate Starts for Gladiator_85:

(Start: 56 @46722 has 36 MA's), (81, 46662),

Gene: Goose_85 Start: 48375, Stop: 48187, Start Num: 60

Candidate Starts for Goose_85:

(45, 48408), (Start: 60 @48375 has 26 MA's), (86, 48255), (87, 48252),

Gene: GreedyLawyer_80 Start: 46501, Stop: 46283, Start Num: 56

Candidate Starts for GreedyLawyer_80:

(6, 46774), (17, 46690), (21, 46666), (Start: 46 @46525 has 23 MA's), (Start: 56 @46501 has 36 MA's), (84, 46405),

Gene: Gruunaga_88 Start: 46677, Stop: 46468, Start Num: 56

Candidate Starts for Gruunaga_88:

(Start: 56 @46677 has 36 MA's), (81, 46617),

Gene: Halley_237 Start: 109664, Stop: 109482, Start Num: 58

Candidate Starts for Halley_237:

(Start: 52 @109679 has 3 MA's), (Start: 58 @109664 has 32 MA's), (77, 109628), (85, 109589), (89, 109517),

Gene: Hammer_89 Start: 46384, Stop: 46175, Start Num: 56

Candidate Starts for Hammer_89:

(Start: 56 @46384 has 36 MA's), (81, 46324), (86, 46249),

Gene: Hannaconda_225 Start: 109232, Stop: 109056, Start Num: 58

Candidate Starts for Hannaconda_225:

(Start: 49 @109253 has 1 MA's), (Start: 58 @109232 has 32 MA's), (77, 109190), (85, 109163),

Gene: HarryHoudini_86 Start: 48578, Stop: 48372, Start Num: 56

Candidate Starts for HarryHoudini_86:

(16, 48776), (Start: 48 @48593 has 3 MA's), (Start: 56 @48578 has 36 MA's), (87, 48440),

Gene: HarryOW_91 Start: 51434, Stop: 51640, Start Num: 62

Candidate Starts for HarryOW_91:

(Start: 62 @51434 has 56 MA's), (86, 51572),

Gene: Heathen_86 Start: 47894, Stop: 47703, Start Num: 60

Candidate Starts for Heathen_86:

(1, 48383), (2, 48350), (8, 48167), (Start: 60 @47894 has 26 MA's), (80, 47834), (87, 47768),

Gene: HelDan_86 Start: 48117, Stop: 47926, Start Num: 60

Candidate Starts for HelDan_86:

(1, 48606), (2, 48573), (8, 48390), (Start: 60 @48117 has 26 MA's), (80, 48057), (87, 47991),

Gene: Helmet_90 Start: 47008, Stop: 46790, Start Num: 56

Candidate Starts for Helmet_90:

(6, 47281), (17, 47197), (21, 47173), (Start: 46 @47032 has 23 MA's), (Start: 56 @47008 has 36 MA's), (84, 46912),

Gene: HermioneGrange_94 Start: 51648, Stop: 51857, Start Num: 62
Candidate Starts for HermioneGrange_94:
(Start: 62 @51648 has 56 MA's), (86, 51786),

Gene: Hexamo_88 Start: 46552, Stop: 46343, Start Num: 56
Candidate Starts for Hexamo_88:
(Start: 56 @46552 has 36 MA's), (81, 46492),

Gene: HokkenD_227 Start: 110994, Stop: 110791, Start Num: 52
Candidate Starts for HokkenD_227:
(Start: 52 @110994 has 3 MA's), (Start: 58 @110979 has 32 MA's), (Start: 71 @110955 has 7 MA's),
(77, 110937), (85, 110898), (86, 110862), (89, 110826), (92, 110802),

Gene: Hookmount_86 Start: 47833, Stop: 47633, Start Num: 60
Candidate Starts for Hookmount_86:
(19, 48022), (Start: 60 @47833 has 26 MA's), (80, 47773), (87, 47707), (89, 47674),

Gene: Hoot_82 Start: 44409, Stop: 44167, Start Num: 46
Candidate Starts for Hoot_82:
(6, 44658), (17, 44574), (21, 44550), (Start: 46 @44409 has 23 MA's), (Start: 56 @44385 has 36
MA's), (84, 44289), (89, 44205),

Gene: Hughesyang_237 Start: 110914, Stop: 110738, Start Num: 58
Candidate Starts for Hughesyang_237:
(Start: 49 @110935 has 1 MA's), (Start: 58 @110914 has 32 MA's), (77, 110872), (85, 110845),

Gene: Hutc2_86 Start: 47037, Stop: 46840, Start Num: 65
Candidate Starts for Hutc2_86:
(Start: 65 @47037 has 21 MA's), (87, 46908), (92, 46851),

Gene: IgnatiusPatJac_87 Start: 48927, Stop: 49127, Start Num: 62
Candidate Starts for IgnatiusPatJac_87:
(Start: 62 @48927 has 56 MA's), (86, 49059),

Gene: Indra_92 Start: 47033, Stop: 46791, Start Num: 46
Candidate Starts for Indra_92:
(6, 47282), (17, 47198), (21, 47174), (Start: 46 @47033 has 23 MA's), (Start: 56 @47009 has 36
MA's), (84, 46913),

Gene: Insomnia_88 Start: 48331, Stop: 48134, Start Num: 65
Candidate Starts for Insomnia_88:
(Start: 65 @48331 has 21 MA's), (87, 48202), (92, 48145),

Gene: Isca_83 Start: 47223, Stop: 47023, Start Num: 66
Candidate Starts for Isca_83:
(9, 47487), (Start: 66 @47223 has 3 MA's), (67, 47217), (82, 47163), (87, 47097), (89, 47064),

Gene: Isiphiwo_83 Start: 46120, Stop: 45878, Start Num: 46
Candidate Starts for Isiphiwo_83:
(6, 46369), (17, 46285), (21, 46261), (Start: 46 @46120 has 23 MA's), (Start: 56 @46096 has 36
MA's), (84, 46000), (89, 45916), (91, 45895),

Gene: JC27_94 Start: 50665, Stop: 50871, Start Num: 62

Candidate Starts for JC27_94:
(Start: 62 @50665 has 56 MA's), (86, 50803),

Gene: Jabith_89 Start: 48345, Stop: 48148, Start Num: 65
Candidate Starts for Jabith_89:
(3, 48675), (Start: 65 @48345 has 21 MA's), (87, 48216), (92, 48159),

Gene: JackSparrow_92 Start: 50104, Stop: 50310, Start Num: 62
Candidate Starts for JackSparrow_92:
(Start: 62 @50104 has 56 MA's), (86, 50242),

Gene: Jerm2_90 Start: 51717, Stop: 51926, Start Num: 62
Candidate Starts for Jerm2_90:
(Start: 62 @51717 has 56 MA's), (86, 51855),

Gene: JewelBug_79 Start: 44888, Stop: 44646, Start Num: 46
Candidate Starts for JewelBug_79:
(6, 45137), (17, 45053), (21, 45029), (Start: 46 @44888 has 23 MA's), (Start: 56 @44864 has 36 MA's), (84, 44768),

Gene: Jordennis_85 Start: 46792, Stop: 46550, Start Num: 46
Candidate Starts for Jordennis_85:
(6, 47041), (17, 46957), (21, 46933), (Start: 46 @46792 has 23 MA's), (Start: 56 @46768 has 36 MA's), (84, 46672),

Gene: Jorgensen_100 Start: 52124, Stop: 52330, Start Num: 62
Candidate Starts for Jorgensen_100:
(Start: 62 @52124 has 56 MA's), (86, 52262), (92, 52322),

Gene: Joselito_87 Start: 48051, Stop: 47854, Start Num: 65
Candidate Starts for Joselito_87:
(Start: 65 @48051 has 21 MA's), (87, 47922), (92, 47865),

Gene: Journey13_69 Start: 43468, Stop: 43256, Start Num: 56
Candidate Starts for Journey13_69:
(Start: 48 @43483 has 3 MA's), (Start: 56 @43468 has 36 MA's), (77, 43414), (83, 43390), (87, 43330), (89, 43297), (91, 43276),

Gene: Jsquared_90 Start: 48187, Stop: 47969, Start Num: 48
Candidate Starts for Jsquared_90:
(Start: 48 @48187 has 3 MA's), (Start: 55 @48172 has 15 MA's), (77, 48118), (87, 48034), (89, 48001),

Gene: JuicyJay_230 Start: 110889, Stop: 110713, Start Num: 58
Candidate Starts for JuicyJay_230:
(Start: 49 @110910 has 1 MA's), (Start: 58 @110889 has 32 MA's), (77, 110847), (85, 110820),

Gene: Kalah2_224 Start: 108578, Stop: 108375, Start Num: 52
Candidate Starts for Kalah2_224:
(Start: 52 @108578 has 3 MA's), (Start: 58 @108563 has 32 MA's), (Start: 71 @108539 has 7 MA's), (77, 108521), (85, 108482), (86, 108446), (87, 108443), (89, 108410), (90, 108395),

Gene: Kalpine_88 Start: 49294, Stop: 49088, Start Num: 56

Candidate Starts for Kalpine_88:

(13, 49507), (Start: 48 @49309 has 3 MA's), (Start: 56 @49294 has 36 MA's), (87, 49156),

Gene: KashFlow_227 Start: 109125, Stop: 108949, Start Num: 58

Candidate Starts for KashFlow_227:

(Start: 49 @109146 has 1 MA's), (Start: 58 @109125 has 32 MA's), (77, 109083), (85, 109056), (87, 109017),

Gene: Katalie136_82 Start: 48581, Stop: 48423, Start Num: 71

Candidate Starts for Katalie136_82:

(Start: 53 @48620 has 7 MA's), (Start: 71 @48581 has 7 MA's), (73, 48572), (87, 48485), (89, 48452),

Gene: Kazan_88 Start: 46564, Stop: 46322, Start Num: 46

Candidate Starts for Kazan_88:

(6, 46813), (17, 46729), (21, 46705), (Start: 46 @46564 has 23 MA's), (Start: 56 @46540 has 36 MA's), (84, 46444), (89, 46360),

Gene: Kerberos_86 Start: 48324, Stop: 48121, Start Num: 55

Candidate Starts for Kerberos_86:

(Start: 55 @48324 has 15 MA's), (77, 48270), (87, 48186),

Gene: Killigrew_87 Start: 50774, Stop: 50574, Start Num: 62

Candidate Starts for Killigrew_87:

(Start: 62 @50774 has 56 MA's), (86, 50642),

Gene: Kimona_86 Start: 47954, Stop: 47757, Start Num: 61

Candidate Starts for Kimona_86:

(Start: 42 @48005 has 5 MA's), (Start: 61 @47954 has 1 MA's), (86, 47828),

Gene: Kipper29_87 Start: 46567, Stop: 46325, Start Num: 46

Candidate Starts for Kipper29_87:

(6, 46816), (17, 46732), (21, 46708), (Start: 46 @46567 has 23 MA's), (Start: 56 @46543 has 36 MA's), (84, 46447), (89, 46363),

Gene: KittenMittens_79 Start: 47725, Stop: 47537, Start Num: 60

Candidate Starts for KittenMittens_79:

(45, 47758), (Start: 60 @47725 has 26 MA's), (87, 47602),

Gene: Klein_242 Start: 109911, Stop: 109735, Start Num: 58

Candidate Starts for Klein_242:

(Start: 49 @109932 has 1 MA's), (Start: 58 @109911 has 32 MA's), (77, 109869), (85, 109842),

Gene: Koduck_86 Start: 47511, Stop: 47308, Start Num: 55

Candidate Starts for Koduck_86:

(Start: 48 @47526 has 3 MA's), (Start: 55 @47511 has 15 MA's), (77, 47457), (79, 47451), (87, 47373),

Gene: Koko_90 Start: 47422, Stop: 47180, Start Num: 46

Candidate Starts for Koko_90:

(6, 47671), (17, 47587), (21, 47563), (Start: 46 @47422 has 23 MA's), (Start: 56 @47398 has 36 MA's), (84, 47302),

Gene: Kremtemulon_79 Start: 48636, Stop: 48466, Start Num: 71

Candidate Starts for Kremtemulon_79:
(Start: 71 @48636 has 7 MA's), (87, 48540), (89, 48507),

Gene: Kristoff_82 Start: 49033, Stop: 48797, Start Num: 42
Candidate Starts for Kristoff_82:
(34, 49066), (Start: 42 @49033 has 5 MA's), (Start: 44 @49018 has 1 MA's), (47, 49009), (74, 48940),
(87, 48862), (89, 48829),

Gene: L5_79 Start: 47417, Stop: 47199, Start Num: 48
Candidate Starts for L5_79:
(Start: 48 @47417 has 3 MA's), (Start: 55 @47402 has 15 MA's), (77, 47348), (79, 47342), (87,
47264),

Gene: Lambert1_86 Start: 47834, Stop: 47634, Start Num: 60
Candidate Starts for Lambert1_86:
(8, 48107), (19, 48023), (Start: 60 @47834 has 26 MA's), (80, 47774), (87, 47708), (89, 47675),

Gene: Lamina13_93 Start: 51757, Stop: 51963, Start Num: 62
Candidate Starts for Lamina13_93:
(Start: 62 @51757 has 56 MA's), (86, 51895),

Gene: Larenn_85 Start: 48736, Stop: 48527, Start Num: 56
Candidate Starts for Larenn_85:
(Start: 48 @48751 has 3 MA's), (Start: 56 @48736 has 36 MA's), (77, 48682), (83, 48658), (87,
48598), (89, 48565),

Gene: Lesedi_88 Start: 50089, Stop: 49889, Start Num: 62
Candidate Starts for Lesedi_88:
(Start: 62 @50089 has 56 MA's), (86, 49957),

Gene: Licorice_91 Start: 52878, Stop: 52678, Start Num: 63
Candidate Starts for Licorice_91:
(Start: 63 @52878 has 7 MA's), (86, 52746), (92, 52686),

Gene: LittleE_224 Start: 106916, Stop: 106728, Start Num: 58
Candidate Starts for LittleE_224:
(Start: 58 @106916 has 32 MA's), (Start: 71 @106892 has 7 MA's), (77, 106874), (85, 106835), (89,
106763), (92, 106739),

Gene: Loser_89 Start: 49477, Stop: 49256, Start Num: 55
Candidate Starts for Loser_89:
(22, 49621), (31, 49558), (Start: 48 @49492 has 3 MA's), (Start: 55 @49477 has 15 MA's), (89,
49291),

Gene: Lucivia_90 Start: 48330, Stop: 48133, Start Num: 65
Candidate Starts for Lucivia_90:
(Start: 65 @48330 has 21 MA's), (87, 48201), (92, 48144),

Gene: Lucky2013_232 Start: 106413, Stop: 106237, Start Num: 58
Candidate Starts for Lucky2013_232:
(Start: 49 @106434 has 1 MA's), (Start: 58 @106413 has 32 MA's), (77, 106371), (85, 106344),

Gene: Lucyedi_86 Start: 48370, Stop: 48140, Start Num: 46

Candidate Starts for Lucyedi_86:

(Start: 46 @48370 has 23 MA's), (Start: 56 @48346 has 36 MA's), (Start: 60 @48334 has 26 MA's),
(Start: 65 @48322 has 21 MA's), (77, 48283),

Gene: MPlant7149_90 Start: 49878, Stop: 50087, Start Num: 62

Candidate Starts for MPlant7149_90:

(Start: 62 @49878 has 56 MA's), (86, 50016),

Gene: MaCh_89 Start: 48294, Stop: 48097, Start Num: 65

Candidate Starts for MaCh_89:

(Start: 65 @48294 has 21 MA's), (87, 48165), (92, 48108),

Gene: Mabel_89 Start: 48295, Stop: 48098, Start Num: 65

Candidate Starts for Mabel_89:

(Start: 65 @48295 has 21 MA's), (87, 48166), (92, 48109),

Gene: Malec_85 Start: 49144, Stop: 48938, Start Num: 56

Candidate Starts for Malec_85:

(16, 49342), (Start: 48 @49159 has 3 MA's), (Start: 56 @49144 has 36 MA's), (77, 49090), (83,
49066), (87, 49006),

Gene: Marge_87 Start: 49768, Stop: 49974, Start Num: 62

Candidate Starts for Marge_87:

(Start: 62 @49768 has 56 MA's), (86, 49906),

Gene: Margo_86 Start: 47859, Stop: 47659, Start Num: 60

Candidate Starts for Margo_86:

(8, 48132), (19, 48048), (Start: 60 @47859 has 26 MA's), (80, 47799), (87, 47733), (89, 47700),

Gene: Marsha_93 Start: 52954, Stop: 53160, Start Num: 62

Candidate Starts for Marsha_93:

(Start: 62 @52954 has 56 MA's), (86, 53092),

Gene: McFly_87 Start: 46903, Stop: 46661, Start Num: 46

Candidate Starts for McFly_87:

(6, 47152), (17, 47068), (21, 47044), (Start: 46 @46903 has 23 MA's), (Start: 56 @46879 has 36
MA's), (84, 46783), (89, 46699),

Gene: MiaZeal_245 Start: 108550, Stop: 108374, Start Num: 58

Candidate Starts for MiaZeal_245:

(Start: 49 @108571 has 1 MA's), (Start: 58 @108550 has 32 MA's), (77, 108508), (85, 108481),

Gene: MiculUcigas_86 Start: 48271, Stop: 48065, Start Num: 56

Candidate Starts for MiculUcigas_86:

(16, 48469), (Start: 48 @48286 has 3 MA's), (Start: 56 @48271 has 36 MA's), (77, 48217), (87,
48133),

Gene: Minerva_233 Start: 107908, Stop: 107726, Start Num: 58

Candidate Starts for Minerva_233:

(Start: 52 @107923 has 3 MA's), (Start: 58 @107908 has 32 MA's), (77, 107872), (85, 107833), (89,
107761),

Gene: MissWhite_79 Start: 45139, Stop: 44933, Start Num: 56

Candidate Starts for MissWhite_79:

(Start: 48 @45154 has 3 MA's), (Start: 56 @45139 has 36 MA's), (77, 45085), (83, 45061), (87, 45001),

Gene: Morpher26_82 Start: 48602, Stop: 48444, Start Num: 71

Candidate Starts for Morpher26_82:

(Start: 53 @48641 has 7 MA's), (Start: 71 @48602 has 7 MA's), (73, 48593), (87, 48506), (89, 48473),

Gene: Mulciber_88 Start: 48150, Stop: 47953, Start Num: 65

Candidate Starts for Mulciber_88:

(Start: 65 @48150 has 21 MA's), (87, 48021), (92, 47964),

Gene: Mule_92 Start: 49973, Stop: 50179, Start Num: 62

Candidate Starts for Mule_92:

(Start: 62 @49973 has 56 MA's), (86, 50111),

Gene: Munch_88 Start: 48299, Stop: 48102, Start Num: 65

Candidate Starts for Munch_88:

(Start: 65 @48299 has 21 MA's), (87, 48170), (92, 48113),

Gene: NaSiaTalie_87 Start: 48558, Stop: 48352, Start Num: 56

Candidate Starts for NaSiaTalie_87:

(16, 48756), (Start: 48 @48573 has 3 MA's), (Start: 56 @48558 has 36 MA's), (77, 48504), (87, 48420),

Gene: Neeharika16_86 Start: 46630, Stop: 46412, Start Num: 56

Candidate Starts for Neeharika16_86:

(6, 46903), (17, 46819), (21, 46795), (Start: 46 @46654 has 23 MA's), (Start: 56 @46630 has 36 MA's), (84, 46534), (89, 46450),

Gene: Nerujay_93 Start: 51720, Stop: 51926, Start Num: 62

Candidate Starts for Nerujay_93:

(Start: 62 @51720 has 56 MA's), (86, 51858),

Gene: Newrala_86 Start: 47000, Stop: 46758, Start Num: 46

Candidate Starts for Newrala_86:

(6, 47249), (17, 47165), (21, 47141), (Start: 46 @47000 has 23 MA's), (Start: 56 @46976 has 36 MA's), (84, 46880),

Gene: Nhonho_87 Start: 50646, Stop: 50852, Start Num: 62

Candidate Starts for Nhonho_87:

(Start: 62 @50646 has 56 MA's), (86, 50784),

Gene: NihilNomen_236 Start: 108748, Stop: 108545, Start Num: 52

Candidate Starts for NihilNomen_236:

(Start: 52 @108748 has 3 MA's), (Start: 58 @108733 has 32 MA's), (Start: 71 @108709 has 7 MA's), (77, 108691), (85, 108652), (89, 108580), (92, 108556),

Gene: Noella_87 Start: 47835, Stop: 47635, Start Num: 60

Candidate Starts for Noella_87:

(19, 48024), (Start: 60 @47835 has 26 MA's), (80, 47775), (87, 47709), (89, 47676),

Gene: Norbert_82 Start: 47832, Stop: 47632, Start Num: 60

Candidate Starts for Norbert_82:

(19, 48021), (Start: 60 @47832 has 26 MA's), (80, 47772), (87, 47706), (89, 47673),

Gene: OKCentral2016_83 Start: 47802, Stop: 47614, Start Num: 60

Candidate Starts for OKCentral2016_83:

(45, 47835), (Start: 60 @47802 has 26 MA's), (86, 47682), (87, 47679),

Gene: Odette_234 Start: 110012, Stop: 109836, Start Num: 58

Candidate Starts for Odette_234:

(Start: 49 @110033 has 1 MA's), (Start: 58 @110012 has 32 MA's), (77, 109970), (85, 109943),

Gene: Orange_89 Start: 47849, Stop: 47652, Start Num: 65

Candidate Starts for Orange_89:

(Start: 65 @47849 has 21 MA's), (87, 47720), (92, 47663),

Gene: PainterBoy_85 Start: 48081, Stop: 47851, Start Num: 46

Candidate Starts for PainterBoy_85:

(Start: 46 @48081 has 23 MA's), (Start: 56 @48057 has 36 MA's), (Start: 60 @48045 has 26 MA's),
(Start: 65 @48033 has 21 MA's), (77, 47994),

Gene: Panamaxus_82 Start: 47834, Stop: 47634, Start Num: 60

Candidate Starts for Panamaxus_82:

(19, 48023), (Start: 60 @47834 has 26 MA's), (80, 47774), (87, 47708), (89, 47675),

Gene: Paraselene_87 Start: 49509, Stop: 49715, Start Num: 62

Candidate Starts for Paraselene_87:

(Start: 62 @49509 has 56 MA's), (86, 49647), (92, 49707),

Gene: Pari_92 Start: 50227, Stop: 50027, Start Num: 62

Candidate Starts for Pari_92:

(Start: 62 @50227 has 56 MA's), (86, 50095),

Gene: Parliament_90 Start: 52239, Stop: 52445, Start Num: 62

Candidate Starts for Parliament_90:

(Start: 62 @52239 has 56 MA's), (86, 52377),

Gene: PeaceMeal1_81 Start: 47729, Stop: 47541, Start Num: 60

Candidate Starts for PeaceMeal1_81:

(45, 47762), (Start: 60 @47729 has 26 MA's), (87, 47606),

Gene: Perplexer_82 Start: 48582, Stop: 48424, Start Num: 71

Candidate Starts for Perplexer_82:

(Start: 53 @48621 has 7 MA's), (Start: 71 @48582 has 7 MA's), (73, 48573), (87, 48486), (89, 48453),

Gene: Perseus_90 Start: 51769, Stop: 51975, Start Num: 62

Candidate Starts for Perseus_90:

(Start: 62 @51769 has 56 MA's), (86, 51907),

Gene: Petersenfast_83 Start: 46730, Stop: 46533, Start Num: 65

Candidate Starts for Petersenfast_83:

(Start: 65 @46730 has 21 MA's), (87, 46601), (92, 46544),

Gene: Peterson_90 Start: 51816, Stop: 51607, Start Num: 62

Candidate Starts for Peterson_90:

(7, 52101), (10, 52062), (12, 52059), (15, 52044), (20, 51996), (23, 51975), (27, 51960), (30, 51915), (32, 51909), (35, 51903), (Start: 62 @51816 has 56 MA's), (72, 51783), (85, 51711), (92, 51615),

Gene: PetiteSangusue_82 Start: 48585, Stop: 48427, Start Num: 71

Candidate Starts for PetiteSangusue_82:

(Start: 53 @48624 has 7 MA's), (Start: 71 @48585 has 7 MA's), (73, 48576), (87, 48489), (89, 48456),

Gene: Phantastic_87 Start: 47341, Stop: 47150, Start Num: 66

Candidate Starts for Phantastic_87:

(9, 47605), (Start: 66 @47341 has 3 MA's), (67, 47335), (82, 47281), (87, 47215),

Gene: PherrisBueller_88 Start: 48812, Stop: 48612, Start Num: 62

Candidate Starts for PherrisBueller_88:

(Start: 62 @48812 has 56 MA's), (86, 48680),

Gene: Phlei_72 Start: 46175, Stop: 45936, Start Num: 54

Candidate Starts for Phlei_72:

(54, 46175), (86, 46019),

Gene: Phoebus_233 Start: 112122, Stop: 111946, Start Num: 58

Candidate Starts for Phoebus_233:

(Start: 49 @112143 has 1 MA's), (Start: 58 @112122 has 32 MA's), (77, 112080), (85, 112053),

Gene: PhrostyMug_94 Start: 52143, Stop: 52349, Start Num: 62

Candidate Starts for PhrostyMug_94:

(Start: 62 @52143 has 56 MA's), (86, 52281),

Gene: Pippin_93 Start: 50646, Stop: 50852, Start Num: 62

Candidate Starts for Pippin_93:

(Start: 62 @50646 has 56 MA's), (86, 50784),

Gene: Piro94_85 Start: 48506, Stop: 48300, Start Num: 56

Candidate Starts for Piro94_85:

(16, 48704), (Start: 48 @48521 has 3 MA's), (Start: 56 @48506 has 36 MA's), (87, 48368),

Gene: Pistachio_87 Start: 47750, Stop: 47532, Start Num: 43

Candidate Starts for Pistachio_87:

(37, 47777), (Start: 43 @47750 has 4 MA's), (70, 47687), (74, 47669), (87, 47597),

Gene: Pmask_86 Start: 47201, Stop: 46959, Start Num: 46

Candidate Starts for Pmask_86:

(6, 47450), (17, 47366), (21, 47342), (Start: 46 @47201 has 23 MA's), (Start: 56 @47177 has 36 MA's), (84, 47081),

Gene: Pocahontas_85 Start: 47830, Stop: 47630, Start Num: 60

Candidate Starts for Pocahontas_85:

(19, 48019), (Start: 60 @47830 has 26 MA's), (80, 47770), (87, 47704), (89, 47671),

Gene: Pomar16_86 Start: 48397, Stop: 48194, Start Num: 55

Candidate Starts for Pomar16_86:

(Start: 55 @48397 has 15 MA's), (77, 48343), (87, 48259),

Gene: Poompha_81 Start: 47730, Stop: 47539, Start Num: 60
Candidate Starts for Poompha_81:
(38, 47796), (Start: 60 @47730 has 26 MA's), (67, 47712), (79, 47673), (87, 47604),

Gene: Popcicle_86 Start: 47830, Stop: 47630, Start Num: 60
Candidate Starts for Popcicle_86:
(19, 48019), (Start: 60 @47830 has 26 MA's), (80, 47770), (87, 47704), (89, 47671),

Gene: Porcelain_236 Start: 107360, Stop: 107184, Start Num: 58
Candidate Starts for Porcelain_236:
(Start: 49 @107381 has 1 MA's), (Start: 58 @107360 has 32 MA's), (77, 107318), (85, 107291),

Gene: Pound_223 Start: 107829, Stop: 107617, Start Num: 49
Candidate Starts for Pound_223:
(Start: 49 @107829 has 1 MA's), (Start: 58 @107808 has 32 MA's), (Start: 71 @107784 has 7 MA's),
(73, 107775), (78, 107760), (85, 107724), (86, 107688), (87, 107685), (89, 107652), (90, 107637),

Gene: Priamo_88 Start: 46420, Stop: 46202, Start Num: 56
Candidate Starts for Priamo_88:
(6, 46693), (17, 46609), (21, 46585), (Start: 46 @46444 has 23 MA's), (Start: 56 @46420 has 36
MA's), (84, 46324), (89, 46240),

Gene: Puppy_88 Start: 47820, Stop: 47602, Start Num: 43
Candidate Starts for Puppy_88:
(37, 47847), (Start: 43 @47820 has 4 MA's), (70, 47757), (74, 47739), (87, 47667),

Gene: QuinnKiro_85 Start: 47833, Stop: 47633, Start Num: 60
Candidate Starts for QuinnKiro_85:
(8, 48106), (19, 48022), (Start: 60 @47833 has 26 MA's), (80, 47773), (87, 47707), (89, 47674),

Gene: Rajelicia_89 Start: 52457, Stop: 52257, Start Num: 63
Candidate Starts for Rajelicia_89:
(Start: 63 @52457 has 7 MA's), (86, 52325),

Gene: Rebeuca_85 Start: 49034, Stop: 48798, Start Num: 42
Candidate Starts for Rebeuca_85:
(34, 49067), (Start: 42 @49034 has 5 MA's), (Start: 44 @49019 has 1 MA's), (47, 49010), (74, 48941),
(87, 48863), (89, 48830),

Gene: RedRock_86 Start: 49130, Stop: 48909, Start Num: 55
Candidate Starts for RedRock_86:
(Start: 48 @49145 has 3 MA's), (Start: 55 @49130 has 15 MA's), (89, 48944),

Gene: Redno2_226 Start: 106231, Stop: 106055, Start Num: 58
Candidate Starts for Redno2_226:
(Start: 49 @106252 has 1 MA's), (Start: 58 @106231 has 32 MA's), (77, 106189), (85, 106162),

Gene: ResDef_84 Start: 47836, Stop: 47636, Start Num: 60
Candidate Starts for ResDef_84:
(19, 48025), (Start: 60 @47836 has 26 MA's), (80, 47776), (87, 47710), (89, 47677),

Gene: RhynO_72 Start: 44427, Stop: 44242, Start Num: 60
Candidate Starts for RhynO_72:

(4, 44745), (13, 44655), (18, 44616), (Start: 42 @44472 has 5 MA's), (Start: 60 @44427 has 26 MA's), (68, 44406), (79, 44370), (87, 44307), (89, 44274),

Gene: Rhynn_85 Start: 50726, Stop: 50926, Start Num: 63
Candidate Starts for Rhynn_85:
(Start: 63 @50726 has 7 MA's),

Gene: RidgeCB_89 Start: 49216, Stop: 49422, Start Num: 62
Candidate Starts for RidgeCB_89:
(Start: 62 @49216 has 56 MA's), (86, 49354), (92, 49414),

Gene: Rifter_89 Start: 46179, Stop: 45970, Start Num: 56
Candidate Starts for Rifter_89:
(Start: 56 @46179 has 36 MA's), (81, 46119),

Gene: Ringer_90 Start: 51410, Stop: 51210, Start Num: 63
Candidate Starts for Ringer_90:
(Start: 63 @51410 has 7 MA's), (86, 51278),

Gene: Rockstar_75 Start: 45031, Stop: 44831, Start Num: 66
Candidate Starts for Rockstar_75:
(9, 45295), (Start: 66 @45031 has 3 MA's), (67, 45025), (82, 44971), (87, 44905),

Gene: Rohr_92 Start: 51968, Stop: 52177, Start Num: 62
Candidate Starts for Rohr_92:
(Start: 62 @51968 has 56 MA's), (86, 52106),

Gene: Roksolana_89 Start: 46895, Stop: 46686, Start Num: 56
Candidate Starts for Roksolana_89:
(Start: 56 @46895 has 36 MA's), (81, 46835),

Gene: Rutherferd_91 Start: 50676, Stop: 50882, Start Num: 62
Candidate Starts for Rutherferd_91:
(Start: 62 @50676 has 56 MA's), (86, 50814), (92, 50874),

Gene: Sagefire_86 Start: 50112, Stop: 50318, Start Num: 62
Candidate Starts for Sagefire_86:
(Start: 62 @50112 has 56 MA's), (86, 50250),

Gene: Salz_85 Start: 46959, Stop: 46762, Start Num: 65
Candidate Starts for Salz_85:
(Start: 65 @46959 has 21 MA's), (87, 46830), (92, 46773),

Gene: SaturnRing_88 Start: 48203, Stop: 47985, Start Num: 43
Candidate Starts for SaturnRing_88:
(37, 48230), (Start: 43 @48203 has 4 MA's), (70, 48140), (74, 48122), (87, 48050),

Gene: Schatzie_227 Start: 109153, Stop: 108977, Start Num: 58
Candidate Starts for Schatzie_227:
(Start: 49 @109174 has 1 MA's), (Start: 58 @109153 has 32 MA's), (77, 109111), (85, 109084),

Gene: Scout_86 Start: 47357, Stop: 47166, Start Num: 60
Candidate Starts for Scout_86:

(1, 47846), (2, 47813), (8, 47630), (Start: 60 @47357 has 26 MA's), (80, 47297), (87, 47231),

Gene: Serenity_89 Start: 47970, Stop: 47767, Start Num: 55

Candidate Starts for Serenity_89:

(33, 48045), (Start: 48 @47985 has 3 MA's), (Start: 55 @47970 has 15 MA's), (77, 47916), (79, 47910), (87, 47832), (89, 47799),

Gene: Severus_82 Start: 47724, Stop: 47536, Start Num: 60

Candidate Starts for Severus_82:

(45, 47757), (Start: 60 @47724 has 26 MA's), (87, 47601),

Gene: Sham4_86 Start: 47045, Stop: 46848, Start Num: 65

Candidate Starts for Sham4_86:

(Start: 65 @47045 has 21 MA's), (87, 46916), (92, 46859),

Gene: Sheen_83 Start: 50900, Stop: 50715, Start Num: 64

Candidate Starts for Sheen_83:

(Start: 64 @50900 has 1 MA's), (77, 50858), (86, 50783),

Gene: SkiPole_98 Start: 51505, Stop: 51711, Start Num: 62

Candidate Starts for SkiPole_98:

(Start: 62 @51505 has 56 MA's), (86, 51643), (92, 51703),

Gene: Smairt_97 Start: 53160, Stop: 53366, Start Num: 62

Candidate Starts for Smairt_97:

(Start: 62 @53160 has 56 MA's), (86, 53298),

Gene: Smeagol_90 Start: 52545, Stop: 52336, Start Num: 62

Candidate Starts for Smeagol_90:

(20, 52725), (23, 52704), (27, 52689), (30, 52644), (32, 52638), (35, 52632), (Start: 62 @52545 has 56 MA's), (72, 52512), (85, 52440), (92, 52344),

Gene: SmellyB_87 Start: 46558, Stop: 46316, Start Num: 46

Candidate Starts for SmellyB_87:

(6, 46807), (17, 46723), (21, 46699), (Start: 46 @46558 has 23 MA's), (Start: 56 @46534 has 36 MA's), (84, 46438), (89, 46354),

Gene: Snape_89 Start: 47838, Stop: 47641, Start Num: 65

Candidate Starts for Snape_89:

(Start: 65 @47838 has 21 MA's), (87, 47709), (92, 47652),

Gene: Solon_83 Start: 47822, Stop: 48028, Start Num: 62

Candidate Starts for Solon_83:

(Start: 62 @47822 has 56 MA's), (86, 47960), (92, 48020),

Gene: SororFago_85 Start: 48106, Stop: 47903, Start Num: 56

Candidate Starts for SororFago_85:

(Start: 48 @48121 has 3 MA's), (Start: 56 @48106 has 36 MA's), (77, 48055),

Gene: Squint_233 Start: 108166, Stop: 107990, Start Num: 58

Candidate Starts for Squint_233:

(Start: 49 @108187 has 1 MA's), (Start: 58 @108166 has 32 MA's), (77, 108124), (85, 108097),

Gene: StarStuff_86 Start: 48359, Stop: 48156, Start Num: 55
Candidate Starts for StarStuff_86:
(Start: 55 @48359 has 15 MA's), (77, 48305), (87, 48221),

Gene: StewieG_86 Start: 47748, Stop: 47954, Start Num: 62
Candidate Starts for StewieG_86:
(Start: 62 @47748 has 56 MA's), (86, 47886), (92, 47946),

Gene: StrongArm_88 Start: 50693, Stop: 50899, Start Num: 62
Candidate Starts for StrongArm_88:
(Start: 62 @50693 has 56 MA's), (86, 50831),

Gene: Sumter_87 Start: 51154, Stop: 51363, Start Num: 62
Candidate Starts for Sumter_87:
(Start: 62 @51154 has 56 MA's), (86, 51292),

Gene: Sunshine924_93 Start: 49690, Stop: 49896, Start Num: 62
Candidate Starts for Sunshine924_93:
(Start: 62 @49690 has 56 MA's), (86, 49828), (92, 49888),

Gene: SuperAwesome_87 Start: 47240, Stop: 46998, Start Num: 46
Candidate Starts for SuperAwesome_87:
(6, 47489), (17, 47405), (21, 47381), (Start: 46 @47240 has 23 MA's), (Start: 56 @47216 has 36 MA's), (84, 47120),

Gene: SuperCallie99_83 Start: 46597, Stop: 46379, Start Num: 56
Candidate Starts for SuperCallie99_83:
(6, 46870), (17, 46786), (21, 46762), (Start: 46 @46621 has 23 MA's), (Start: 56 @46597 has 36 MA's), (84, 46501), (89, 46417),

Gene: Superphikiman_233 Start: 107294, Stop: 107106, Start Num: 58
Candidate Starts for Superphikiman_233:
(Start: 49 @107315 has 1 MA's), (Start: 58 @107294 has 32 MA's), (77, 107252), (85, 107213), (89, 107141), (92, 107117),

Gene: TNguyen7_88 Start: 48161, Stop: 47943, Start Num: 43
Candidate Starts for TNguyen7_88:
(37, 48188), (Start: 43 @48161 has 4 MA's), (70, 48098), (74, 48080), (87, 48008),

Gene: Tasp14_87 Start: 49921, Stop: 50127, Start Num: 62
Candidate Starts for Tasp14_87:
(Start: 62 @49921 has 56 MA's), (86, 50059),

Gene: Texage_84 Start: 47834, Stop: 47634, Start Num: 60
Candidate Starts for Texage_84:
(19, 48023), (Start: 60 @47834 has 26 MA's), (80, 47774), (87, 47708), (89, 47675),

Gene: Thibault_209 Start: 104098, Stop: 103910, Start Num: 58
Candidate Starts for Thibault_209:
(Start: 58 @104098 has 32 MA's), (Start: 71 @104074 has 7 MA's), (77, 104056), (85, 104017), (89, 103945), (92, 103921),

Gene: ThreeRngTarjay_234 Start: 111335, Stop: 111162, Start Num: 58

Candidate Starts for ThreeRngTarjay_234:

(Start: 49 @111356 has 1 MA's), (Start: 58 @111335 has 32 MA's), (77, 111293), (85, 111266),

Gene: Timothy_89 Start: 47815, Stop: 47618, Start Num: 65

Candidate Starts for Timothy_89:

(Start: 65 @47815 has 21 MA's), (87, 47686), (92, 47629),

Gene: Timshel_82 Start: 50786, Stop: 50517, Start Num: 41

Candidate Starts for Timshel_82:

(40, 50789), (Start: 41 @50786 has 1 MA's), (Start: 56 @50735 has 36 MA's), (73, 50684), (87, 50594),

Gene: TinyTimmy_87 Start: 47544, Stop: 47347, Start Num: 65

Candidate Starts for TinyTimmy_87:

(Start: 65 @47544 has 21 MA's), (87, 47415), (92, 47358),

Gene: TipsytheTRex_85 Start: 47972, Stop: 47769, Start Num: 55

Candidate Starts for TipsytheTRex_85:

(33, 48047), (Start: 48 @47987 has 3 MA's), (Start: 55 @47972 has 15 MA's), (77, 47918), (79, 47912), (87, 47834), (89, 47801),

Gene: Todacoro_86 Start: 47833, Stop: 47633, Start Num: 60

Candidate Starts for Todacoro_86:

(8, 48106), (19, 48022), (Start: 60 @47833 has 26 MA's), (80, 47773), (87, 47707), (89, 47674),

Gene: Tomathan_86 Start: 48437, Stop: 48234, Start Num: 55

Candidate Starts for Tomathan_86:

(Start: 55 @48437 has 15 MA's), (77, 48383), (87, 48299),

Gene: ToneTone_86 Start: 46559, Stop: 46350, Start Num: 56

Candidate Starts for ToneTone_86:

(Start: 56 @46559 has 36 MA's), (81, 46499), (86, 46424),

Gene: Topanga_74 Start: 45508, Stop: 45263, Start Num: 42

Candidate Starts for Topanga_74:

(14, 45685), (Start: 42 @45508 has 5 MA's), (Start: 44 @45493 has 1 MA's), (47, 45484), (74, 45415), (87, 45337), (89, 45304),

Gene: Topgun_89 Start: 49318, Stop: 49524, Start Num: 62

Candidate Starts for Topgun_89:

(Start: 62 @49318 has 56 MA's), (86, 49456), (92, 49516),

Gene: Trouble_90 Start: 50598, Stop: 50804, Start Num: 62

Candidate Starts for Trouble_90:

(Start: 62 @50598 has 56 MA's), (86, 50736),

Gene: Tucker_89 Start: 46762, Stop: 46553, Start Num: 56

Candidate Starts for Tucker_89:

(Start: 56 @46762 has 36 MA's), (81, 46702), (86, 46627),

Gene: Twister_85 Start: 48707, Stop: 48477, Start Num: 44

Candidate Starts for Twister_85:

(14, 48899), (28, 48803), (Start: 42 @48722 has 5 MA's), (Start: 44 @48707 has 1 MA's), (47, 48698), (74, 48629), (87, 48551), (89, 48518),

Gene: Updawg_87 Start: 48553, Stop: 48347, Start Num: 56

Candidate Starts for Updawg_87:

(16, 48751), (Start: 48 @48568 has 3 MA's), (Start: 56 @48553 has 36 MA's), (77, 48499), (87, 48415),

Gene: VC3_84 Start: 47253, Stop: 47056, Start Num: 55

Candidate Starts for VC3_84:

(Start: 55 @47253 has 15 MA's), (77, 47199), (87, 47121),

Gene: Veracruz_83 Start: 47834, Stop: 47634, Start Num: 60

Candidate Starts for Veracruz_83:

(8, 48107), (19, 48023), (Start: 60 @47834 has 26 MA's), (80, 47774), (87, 47708), (89, 47675),

Gene: VohminGhazi_87 Start: 46559, Stop: 46317, Start Num: 46

Candidate Starts for VohminGhazi_87:

(6, 46808), (17, 46724), (21, 46700), (Start: 46 @46559 has 23 MA's), (Start: 56 @46535 has 36 MA's), (84, 46439), (89, 46355),

Gene: WalterMcMickey_84 Start: 48722, Stop: 48477, Start Num: 42

Candidate Starts for WalterMcMickey_84:

(14, 48899), (28, 48803), (Start: 42 @48722 has 5 MA's), (Start: 44 @48707 has 1 MA's), (47, 48698), (74, 48629), (87, 48551), (89, 48518),

Gene: Wanda_234 Start: 107541, Stop: 107365, Start Num: 58

Candidate Starts for Wanda_234:

(Start: 49 @107562 has 1 MA's), (Start: 58 @107541 has 32 MA's), (77, 107499), (85, 107472),

Gene: WeiHuaDA_88 Start: 49575, Stop: 49372, Start Num: 56

Candidate Starts for WeiHuaDA_88:

(22, 49722), (24, 49710), (Start: 48 @49590 has 3 MA's), (Start: 56 @49575 has 36 MA's), (69, 49551), (77, 49524), (83, 49500), (87, 49440),

Gene: WideWale_87 Start: 48553, Stop: 48347, Start Num: 56

Candidate Starts for WideWale_87:

(16, 48751), (Start: 48 @48568 has 3 MA's), (Start: 56 @48553 has 36 MA's), (77, 48499), (87, 48415),

Gene: Wiks_88 Start: 46663, Stop: 46421, Start Num: 46

Candidate Starts for Wiks_88:

(6, 46912), (17, 46828), (21, 46804), (Start: 46 @46663 has 23 MA's), (Start: 56 @46639 has 36 MA's), (84, 46543),

Gene: Wile_81 Start: 48650, Stop: 48453, Start Num: 53

Candidate Starts for Wile_81:

(Start: 53 @48650 has 7 MA's), (Start: 71 @48611 has 7 MA's), (73, 48602), (87, 48515), (89, 48482),

Gene: Wilkins_90 Start: 49248, Stop: 49454, Start Num: 62

Candidate Starts for Wilkins_90:

(Start: 62 @49248 has 56 MA's), (86, 49386), (92, 49446),

Gene: Wizard007_82 Start: 48376, Stop: 48179, Start Num: 53
Candidate Starts for Wizard007_82:
(Start: 53 @48376 has 7 MA's), (Start: 71 @48337 has 7 MA's), (73, 48328), (87, 48241), (89, 48208),

Gene: Yeet_229 Start: 109251, Stop: 109075, Start Num: 58
Candidate Starts for Yeet_229:
(Start: 49 @109272 has 1 MA's), (Start: 58 @109251 has 32 MA's), (77, 109209), (85, 109182),

Gene: Yokurt_88 Start: 46639, Stop: 46421, Start Num: 56
Candidate Starts for Yokurt_88:
(6, 46912), (17, 46828), (21, 46804), (Start: 46 @46663 has 23 MA's), (Start: 56 @46639 has 36 MA's), (84, 46543),

Gene: Zaka_89 Start: 46639, Stop: 46421, Start Num: 56
Candidate Starts for Zaka_89:
(6, 46912), (17, 46828), (21, 46804), (Start: 46 @46663 has 23 MA's), (Start: 56 @46639 has 36 MA's), (84, 46543),

Gene: Zeeculate_91 Start: 53471, Stop: 53271, Start Num: 62
Candidate Starts for Zeeculate_91:
(Start: 62 @53471 has 56 MA's), (86, 53339),

Gene: Zelink_228 Start: 108839, Stop: 108663, Start Num: 58
Candidate Starts for Zelink_228:
(Start: 49 @108860 has 1 MA's), (Start: 58 @108839 has 32 MA's), (77, 108797), (85, 108770),

Gene: Zulu_90 Start: 47040, Stop: 46798, Start Num: 46
Candidate Starts for Zulu_90:
(6, 47289), (17, 47205), (21, 47181), (Start: 46 @47040 has 23 MA's), (Start: 56 @47016 has 36 MA's), (84, 46920), (89, 46836),