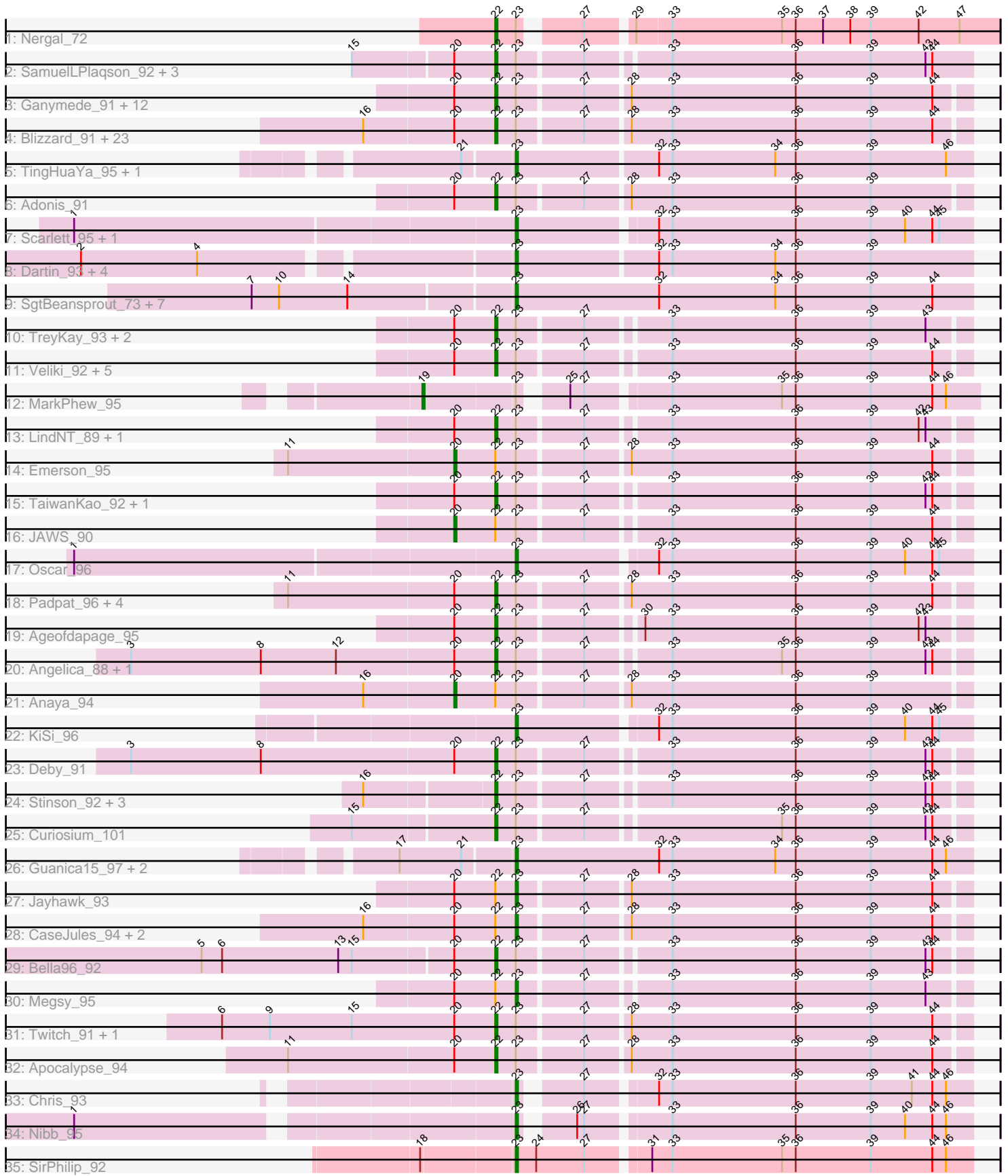


Pham 180374



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 180374 Report

This analysis was run 11/02/24 on database version 579.

Pham number 180374 has 108 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Nergal_72
- Track 2 : SamuelLPlaqson_92, DrHayes_92, TiniBug_90, Urkel_92
- Track 3 : Ganymede_91, Mynx_92, Beezoo_94, YoureAdopted_90, QuincyRose_89, MeaningOfLife_93, BarrelRoll_91, Rapunzel97_93, TruffulaTree_93, Tiri_92, CheetoDust_91, Zavala_93, Slimphazie_93
- Track 4 : Blizzard_91, Belladonna_91, Homura_90, Capricorn_91, Lunahalos_91, ShiaSurprise_93, Jarvi_91, Spock_91, Durfee_91, Rosmarinus_91, Geraldini_92, Piatt_90, Hyperbowlee_90, Llorens_91, Dalmuri_91, Boiiii_91, Asayake_91, CREW_90, BGlluviae_90, BaghaKamala_90, Inky_91, Topper_91, Joy99_92, Jeckyll_91
- Track 5 : TingHuaYa_95, LastHope_97
- Track 6 : Adonis_91
- Track 7 : Scarlett_95, LeMond_95
- Track 8 : Dartin_93, Shaobing_92, McMater_93, Richo_93, Validus_98
- Track 9 : SgtBeansprout_73, Nikao_75, Torres_74, LilPharaoh_73, Enkosi_74, Mdavu_73, Binglebops_72, Amelie_72
- Track 10 : TreyKay_93, Murucutumbu_91, Prithvi_93
- Track 11 : Veliki_92, Adephagia_90, HedwigODU_91, AlishaPH_84, ActinUp_92, Zabiza_87
- Track 12 : MarkPhew_95
- Track 13 : LindNT_89, LaterM_91
- Track 14 : Emerson_95
- Track 15 : TaiwanKao_92, CrimD_91
- Track 16 : JAWS_90
- Track 17 : Oscar_96
- Track 18 : Padpat_96, Tachez_91, Ramen_92, Atiba_92, Pokerus_91
- Track 19 : Ageofdapage_95
- Track 20 : Angelica_88, Sulley_88
- Track 21 : Anaya_94
- Track 22 : KiSi_96
- Track 23 : Deby_91
- Track 24 : Stinson_92, Devera_97, Illumine_95, Dole_94
- Track 25 : Curiosium_101
- Track 26 : Guanica15_97, Efra2_98, Yunkel11_96
- Track 27 : Jayhawk_93
- Track 28 : CaseJules_94, Padfoot_91, BEEST_91
- Track 29 : Bella96_92

- Track 30 : Megsy_95
- Track 31 : Twitch_91, Peel_91
- Track 32 : Apocalypse_94
- Track 33 : Chris_93
- Track 34 : Nibb_95
- Track 35 : SirPhilip_92

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

The start number called the most often in the published annotations is 22, it was called in 73 of the 102 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp_92, Adephagia_90, Adonis_91, Ageofdapage_95, AlishaPH_84, Angelica_88, Apocalypse_94, Asayake_91, Atiba_92, BGlluviae_90, BaghaKamala_90, BarrelRoll_91, Beezoo_94, Bella96_92, Belladonna_91, Blizzard_91, Boiiii_91, CREW_90, Capricorn_91, CheetoDust_91, CrimD_91, Curiosium_101, Dalmuri_91, Deby_91, Devera_97, Dole_94, DrHayes_92, Durfee_91, Ganymede_91, Geraldini_92, HedwigODU_91, Homura_90, Hyperbowlee_90, Illumine_95, Inky_91, Jarvi_91, Jeckyll_91, Joy99_92, LaterM_91, LindNT_89, Llorens_91, Lunahalos_91, MeaningOfLife_93, Murucutumbu_91, Mynx_92, Nergal_72, Padpat_96, Peel_91, Piatt_90, Pokerus_91, Prithvi_93, QuincyRose_89, Ramen_92, Rapunzel97_93, Rosmarinus_91, SamuelLPlaqson_92, ShiaSurprise_93, Slimphazie_93, Spock_91, Stinson_92, Sulley_88, Tachez_91, TaiwanKao_92, TiniBug_90, Tiri_92, Topper_91, TreyKay_93, TruffulaTree_93, Twitch_91, Urkel_92, Veliki_92, YoureAdopted_90, Zabiza_87, Zavala_93,

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

- Anaya_94, BEEST_91, CaseJules_94, Emerson_95, JAWS_90, Jayhawk_93, Megsy_95, Padfoot_91,

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

- Amelie_72, Biglebops_72, Chris_93, Dartin_93, Efra2_98, Enkosi_74, Guanica15_97, KiSi_96, LastHope_97, LeMond_95, LilPharaoh_73, MarkPhew_95, McMater_93, Mdavu_73, Nibb_95, Nikao_75, Oscar_96, Richo_93, Scarlett_95, SgtBeansprout_73, Shaobing_92, SirPhilip_92, TingHuaYa_95, Torres_74, Validus_98, Yunkel11_96,

Summary by start number:

Start 19:

- Found in 1 of 108 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MarkPhew_95 (K1),

Start 20:

- Found in 76 of 108 (70.4%) of genes in pham
- Manual Annotations of this start: 3 of 102
- Called 3.9% of time when present

- Phage (with cluster) where this start called: Anaya_94 (K1), Emerson_95 (K1), JAWS_90 (K1),

Start 22:

- Found in 82 of 108 (75.9%) of genes in pham
- Manual Annotations of this start: 73 of 102
- Called 90.2% of time when present
- Phage (with cluster) where this start called: ActinUp_92 (K1), Adephagia_90 (K1), Adonis_91 (K1), Ageofdapage_95 (K1), AlishaPH_84 (K1), Angelica_88 (K1), Apocalypse_94 (K1), Asayake_91 (K1), Atiba_92 (K1), BGlluviae_90 (K1), BaghaKamala_90 (K1), BarrelRoll_91 (K1), Beezoo_94 (K1), Bella96_92 (K1), Belladonna_91 (K1), Blizzard_91 (K1), Boiiii_91 (K1), CREW_90 (K1), Capricorn_91 (K1), CheetoDust_91 (K1), CrimD_91 (K1), Curiosium_101 (K1), Dalmuri_91 (K1), Deby_91 (K1), Devera_97 (K1), Dole_94 (K1), DrHayes_92 (K1), Durfee_91 (K1), Ganymede_91 (K1), Geraldini_92 (K1), HedwigODU_91 (K1), Homura_90 (K1), Hyperbowlee_90 (K1), Illumine_95 (K1), Inky_91 (K1), Jarvi_91 (K1), Jeckyll_91 (K1), Joy99_92 (K1), LaterM_91 (K1), LindNT_89 (K1), Llorens_91 (K1), Lunahalos_91 (K1), MeaningOfLife_93 (K1), Murucutumbu_91 (K1), Mynx_92 (K1), Nergal_72 (AG), Padpat_96 (K1), Peel_91 (K1), Piatt_90 (K1), Pokerus_91 (K1), Prithvi_93 (K1), QuincyRose_89 (K1), Ramen_92 (K1), Rapunzel97_93 (K1), Rosmarinus_91 (K1), SamuelLPlaqson_92 (K1), ShiaSurprise_93 (K1), Slimphazie_93 (K1), Spock_91 (K1), Stinson_92 (K1), Sulley_88 (K1), Tachez_91 (K1), TaiwanKao_92 (K1), TiniBug_90 (K1), Tiri_92 (K1), Topper_91 (K1), TreyKay_93 (K1), TruffulaTree_93 (K1), Twitch_91 (K1), Urkel_92 (K1), Veliki_92 (K1), YoureAdopted_90 (K1), Zabiza_87 (K1), Zavala_93 (K1),

Start 23:

- Found in 108 of 108 (100.0%) of genes in pham
- Manual Annotations of this start: 25 of 102
- Called 27.8% of time when present
- Phage (with cluster) where this start called: Amelie_72 (K1), BEEST_91 (K1), Binglebops_72 (K1), CaseJules_94 (K1), Chris_93 (K1), Dartin_93 (K1), Efra2_98 (K1), Enkosi_74 (K1), Guanica15_97 (K1), Jayhawk_93 (K1), KiSi_96 (K1), LastHope_97 (K1), LeMond_95 (K1), LilPharaoh_73 (K1), McMater_93 (K1), Mdavu_73 (K1), Megsy_95 (K1), Nibb_95 (K1), Nikao_75 (K1), Oscar_96 (K1), Padfoot_91 (K1), Richo_93 (K1), Scarlett_95 (K1), SgtBeansprout_73 (K1), Shaobing_92 (K1), SirPhilip_92 (K6), TingHuaYa_95 (K1), Torres_74 (K1), Validus_98 (K1), Yunkel11_96 (K1),

Summary by clusters:

There are 3 clusters represented in this pham: K1, K6, AG,

Info for manual annotations of cluster AG:

- Start number 22 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:

- Start number 19 was manually annotated 1 time for cluster K1.
- Start number 20 was manually annotated 3 times for cluster K1.
- Start number 22 was manually annotated 72 times for cluster K1.
- Start number 23 was manually annotated 24 times for cluster K1.

Info for manual annotations of cluster K6:

- Start number 23 was manually annotated 1 time for cluster K6.

Gene Information:

Gene: ActinUp_92 Start: 57651, Stop: 57848, Start Num: 22

Candidate Starts for ActinUp_92:

(Start: 20 @57633 has 3 MA's), (Start: 22 @57651 has 73 MA's), (Start: 23 @57660 has 25 MA's), (27, 57687), (33, 57720), (36, 57774), (39, 57807), (44, 57834),

Gene: Adephagia_90 Start: 57495, Stop: 57692, Start Num: 22

Candidate Starts for Adephagia_90:

(Start: 20 @57477 has 3 MA's), (Start: 22 @57495 has 73 MA's), (Start: 23 @57504 has 25 MA's), (27, 57531), (33, 57564), (36, 57618), (39, 57651), (44, 57678),

Gene: Adonis_91 Start: 57877, Stop: 58077, Start Num: 22

Candidate Starts for Adonis_91:

(Start: 20 @57859 has 3 MA's), (Start: 22 @57877 has 73 MA's), (Start: 23 @57886 has 25 MA's), (27, 57913), (28, 57931), (33, 57949), (36, 58003), (39, 58036),

Gene: Ageofdapage_95 Start: 58498, Stop: 58695, Start Num: 22

Candidate Starts for Ageofdapage_95:

(Start: 20 @58480 has 3 MA's), (Start: 22 @58498 has 73 MA's), (Start: 23 @58507 has 25 MA's), (27, 58534), (30, 58555), (33, 58567), (36, 58621), (39, 58654), (42, 58675), (43, 58678),

Gene: AlishaPH_84 Start: 54883, Stop: 55080, Start Num: 22

Candidate Starts for AlishaPH_84:

(Start: 20 @54865 has 3 MA's), (Start: 22 @54883 has 73 MA's), (Start: 23 @54892 has 25 MA's), (27, 54919), (33, 54952), (36, 55006), (39, 55039), (44, 55066),

Gene: Amelie_72 Start: 53462, Stop: 53662, Start Num: 23

Candidate Starts for Amelie_72:

(7, 53351), (10, 53363), (14, 53393), (Start: 23 @53462 has 25 MA's), (32, 53525), (34, 53576), (36, 53585), (39, 53618), (44, 53645),

Gene: Anaya_94 Start: 58708, Stop: 58926, Start Num: 20

Candidate Starts for Anaya_94:

(16, 58669), (Start: 20 @58708 has 3 MA's), (Start: 22 @58726 has 73 MA's), (Start: 23 @58735 has 25 MA's), (27, 58762), (28, 58780), (33, 58798), (36, 58852), (39, 58885),

Gene: Angelica_88 Start: 57102, Stop: 57299, Start Num: 22

Candidate Starts for Angelica_88:

(3, 56943), (8, 57000), (12, 57033), (Start: 20 @57084 has 3 MA's), (Start: 22 @57102 has 73 MA's), (Start: 23 @57111 has 25 MA's), (27, 57138), (33, 57171), (35, 57219), (36, 57225), (39, 57258), (43, 57282), (44, 57285),

Gene: Apocalypse_94 Start: 57857, Stop: 58057, Start Num: 22

Candidate Starts for Apocalypse_94:

(11, 57767), (Start: 20 @57839 has 3 MA's), (Start: 22 @57857 has 73 MA's), (Start: 23 @57866 has 25 MA's), (27, 57893), (28, 57911), (33, 57929), (36, 57983), (39, 58016), (44, 58043),

Gene: Asayake_91 Start: 57809, Stop: 58009, Start Num: 22

Candidate Starts for Asayake_91:

(16, 57752), (Start: 20 @57791 has 3 MA's), (Start: 22 @57809 has 73 MA's), (Start: 23 @57818 has 25 MA's), (27, 57845), (28, 57863), (33, 57881), (36, 57935), (39, 57968), (44, 57995),

Gene: Atiba_92 Start: 57460, Stop: 57660, Start Num: 22

Candidate Starts for Atiba_92:

(11, 57370), (Start: 20 @57442 has 3 MA's), (Start: 22 @57460 has 73 MA's), (Start: 23 @57469 has 25 MA's), (27, 57496), (28, 57514), (33, 57532), (36, 57586), (39, 57619), (44, 57646),

Gene: BEEST_91 Start: 57819, Stop: 58010, Start Num: 23

Candidate Starts for BEEST_91:

(16, 57753), (Start: 20 @57792 has 3 MA's), (Start: 22 @57810 has 73 MA's), (Start: 23 @57819 has 25 MA's), (27, 57846), (28, 57864), (33, 57882), (36, 57936), (39, 57969), (44, 57996),

Gene: BGlluviae_90 Start: 57201, Stop: 57401, Start Num: 22

Candidate Starts for BGlluviae_90:

(16, 57144), (Start: 20 @57183 has 3 MA's), (Start: 22 @57201 has 73 MA's), (Start: 23 @57210 has 25 MA's), (27, 57237), (28, 57255), (33, 57273), (36, 57327), (39, 57360), (44, 57387),

Gene: BaghaKamala_90 Start: 57037, Stop: 57237, Start Num: 22

Candidate Starts for BaghaKamala_90:

(16, 56980), (Start: 20 @57019 has 3 MA's), (Start: 22 @57037 has 73 MA's), (Start: 23 @57046 has 25 MA's), (27, 57073), (28, 57091), (33, 57109), (36, 57163), (39, 57196), (44, 57223),

Gene: BarrelRoll_91 Start: 57577, Stop: 57777, Start Num: 22

Candidate Starts for BarrelRoll_91:

(Start: 20 @57559 has 3 MA's), (Start: 22 @57577 has 73 MA's), (Start: 23 @57586 has 25 MA's), (27, 57613), (28, 57631), (33, 57649), (36, 57703), (39, 57736), (44, 57763),

Gene: Beezoo_94 Start: 58398, Stop: 58598, Start Num: 22

Candidate Starts for Beezoo_94:

(Start: 20 @58380 has 3 MA's), (Start: 22 @58398 has 73 MA's), (Start: 23 @58407 has 25 MA's), (27, 58434), (28, 58452), (33, 58470), (36, 58524), (39, 58557), (44, 58584),

Gene: Bella96_92 Start: 58255, Stop: 58452, Start Num: 22

Candidate Starts for Bella96_92:

(5, 58129), (6, 58138), (13, 58189), (15, 58195), (Start: 20 @58237 has 3 MA's), (Start: 22 @58255 has 73 MA's), (Start: 23 @58264 has 25 MA's), (27, 58291), (33, 58324), (36, 58378), (39, 58411), (43, 58435), (44, 58438),

Gene: Belladonna_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Belladonna_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: Biglebops_72 Start: 53477, Stop: 53677, Start Num: 23

Candidate Starts for Biglebops_72:

(7, 53366), (10, 53378), (14, 53408), (Start: 23 @53477 has 25 MA's), (32, 53540), (34, 53591), (36, 53600), (39, 53633), (44, 53660),

Gene: Blizzard_91 Start: 57809, Stop: 58009, Start Num: 22

Candidate Starts for Blizzard_91:

(16, 57752), (Start: 20 @57791 has 3 MA's), (Start: 22 @57809 has 73 MA's), (Start: 23 @57818 has 25 MA's), (27, 57845), (28, 57863), (33, 57881), (36, 57935), (39, 57968), (44, 57995),

Gene: Boiiii_91 Start: 57811, Stop: 58011, Start Num: 22

Candidate Starts for Boiiii_91:

(16, 57754), (Start: 20 @57793 has 3 MA's), (Start: 22 @57811 has 73 MA's), (Start: 23 @57820 has 25 MA's), (27, 57847), (28, 57865), (33, 57883), (36, 57937), (39, 57970), (44, 57997),

Gene: CREW_90 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for CREW_90:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: Capricorn_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Capricorn_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: CaseJules_94 Start: 57818, Stop: 58009, Start Num: 23

Candidate Starts for CaseJules_94:

(16, 57752), (Start: 20 @57791 has 3 MA's), (Start: 22 @57809 has 73 MA's), (Start: 23 @57818 has 25 MA's), (27, 57845), (28, 57863), (33, 57881), (36, 57935), (39, 57968), (44, 57995),

Gene: CheetoDust_91 Start: 57207, Stop: 57407, Start Num: 22

Candidate Starts for CheetoDust_91:

(Start: 20 @57189 has 3 MA's), (Start: 22 @57207 has 73 MA's), (Start: 23 @57216 has 25 MA's), (27, 57243), (28, 57261), (33, 57279), (36, 57333), (39, 57366), (44, 57393),

Gene: Chris_93 Start: 58180, Stop: 58365, Start Num: 23

Candidate Starts for Chris_93:

(Start: 23 @58180 has 25 MA's), (27, 58201), (32, 58228), (33, 58234), (36, 58288), (39, 58321), (41, 58339), (44, 58348), (46, 58354),

Gene: CrimD_91 Start: 57660, Stop: 57857, Start Num: 22

Candidate Starts for CrimD_91:

(Start: 20 @57642 has 3 MA's), (Start: 22 @57660 has 73 MA's), (Start: 23 @57669 has 25 MA's), (27, 57696), (33, 57729), (36, 57783), (39, 57816), (43, 57840), (44, 57843),

Gene: Curiosium_101 Start: 59707, Stop: 59904, Start Num: 22

Candidate Starts for Curiosium_101:

(15, 59647), (Start: 22 @59707 has 73 MA's), (Start: 23 @59716 has 25 MA's), (27, 59743), (35, 59824), (36, 59830), (39, 59863), (43, 59887), (44, 59890),

Gene: Dalmuri_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Dalmuri_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: Dartin_93 Start: 59098, Stop: 59295, Start Num: 23

Candidate Starts for Dartin_93:

(2, 58921), (4, 58972), (Start: 23 @59098 has 25 MA's), (32, 59158), (33, 59164), (34, 59209), (36, 59218), (39, 59251),

Gene: Deby_91 Start: 58372, Stop: 58569, Start Num: 22

Candidate Starts for Deby_91:

(3, 58213), (8, 58270), (Start: 20 @58354 has 3 MA's), (Start: 22 @58372 has 73 MA's), (Start: 23 @58381 has 25 MA's), (27, 58408), (33, 58441), (36, 58495), (39, 58528), (43, 58552), (44, 58555),

Gene: Devera_97 Start: 58494, Stop: 58691, Start Num: 22

Candidate Starts for Devera_97:

(16, 58440), (Start: 22 @58494 has 73 MA's), (Start: 23 @58503 has 25 MA's), (27, 58530), (33, 58563), (36, 58617), (39, 58650), (43, 58674), (44, 58677),

Gene: Dole_94 Start: 58497, Stop: 58694, Start Num: 22

Candidate Starts for Dole_94:

(16, 58443), (Start: 22 @58497 has 73 MA's), (Start: 23 @58506 has 25 MA's), (27, 58533), (33, 58566), (36, 58620), (39, 58653), (43, 58677), (44, 58680),

Gene: DrHayes_92 Start: 58057, Stop: 58257, Start Num: 22

Candidate Starts for DrHayes_92:

(15, 57997), (Start: 20 @58039 has 3 MA's), (Start: 22 @58057 has 73 MA's), (Start: 23 @58066 has 25 MA's), (27, 58093), (33, 58126), (36, 58180), (39, 58213), (43, 58237), (44, 58240),

Gene: Durfee_91 Start: 57809, Stop: 58009, Start Num: 22

Candidate Starts for Durfee_91:

(16, 57752), (Start: 20 @57791 has 3 MA's), (Start: 22 @57809 has 73 MA's), (Start: 23 @57818 has 25 MA's), (27, 57845), (28, 57863), (33, 57881), (36, 57935), (39, 57968), (44, 57995),

Gene: Efra2_98 Start: 58876, Stop: 59076, Start Num: 23

Candidate Starts for Efra2_98:

(17, 58828), (21, 58855), (Start: 23 @58876 has 25 MA's), (32, 58939), (33, 58945), (34, 58990), (36, 58999), (39, 59032), (44, 59059), (46, 59065),

Gene: Emerson_95 Start: 58198, Stop: 58416, Start Num: 20

Candidate Starts for Emerson_95:

(11, 58126), (Start: 20 @58198 has 3 MA's), (Start: 22 @58216 has 73 MA's), (Start: 23 @58225 has 25 MA's), (27, 58252), (28, 58270), (33, 58288), (36, 58342), (39, 58375), (44, 58402),

Gene: Enkosi_74 Start: 56075, Stop: 56275, Start Num: 23

Candidate Starts for Enkosi_74:

(7, 55964), (10, 55976), (14, 56006), (Start: 23 @56075 has 25 MA's), (32, 56138), (34, 56189), (36, 56198), (39, 56231), (44, 56258),

Gene: Ganymede_91 Start: 57624, Stop: 57824, Start Num: 22

Candidate Starts for Ganymede_91:

(Start: 20 @57606 has 3 MA's), (Start: 22 @57624 has 73 MA's), (Start: 23 @57633 has 25 MA's), (27, 57660), (28, 57678), (33, 57696), (36, 57750), (39, 57783), (44, 57810),

Gene: Geraldini_92 Start: 57722, Stop: 57922, Start Num: 22

Candidate Starts for Geraldini_92:

(16, 57665), (Start: 20 @57704 has 3 MA's), (Start: 22 @57722 has 73 MA's), (Start: 23 @57731 has 25 MA's), (27, 57758), (28, 57776), (33, 57794), (36, 57848), (39, 57881), (44, 57908),

Gene: Guanica15_97 Start: 58565, Stop: 58765, Start Num: 23

Candidate Starts for Guanica15_97:

(17, 58517), (21, 58544), (Start: 23 @58565 has 25 MA's), (32, 58628), (33, 58634), (34, 58679), (36, 58688), (39, 58721), (44, 58748), (46, 58754),

Gene: HedwigODU_91 Start: 57651, Stop: 57848, Start Num: 22

Candidate Starts for HedwigODU_91:

(Start: 20 @57633 has 3 MA's), (Start: 22 @57651 has 73 MA's), (Start: 23 @57660 has 25 MA's), (27, 57687), (33, 57720), (36, 57774), (39, 57807), (44, 57834),

Gene: Homura_90 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Homura_90:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: Hyperbowlee_90 Start: 57809, Stop: 58009, Start Num: 22

Candidate Starts for Hyperbowlee_90:

(16, 57752), (Start: 20 @57791 has 3 MA's), (Start: 22 @57809 has 73 MA's), (Start: 23 @57818 has 25 MA's), (27, 57845), (28, 57863), (33, 57881), (36, 57935), (39, 57968), (44, 57995),

Gene: Illumine_95 Start: 58496, Stop: 58693, Start Num: 22

Candidate Starts for Illumine_95:

(16, 58442), (Start: 22 @58496 has 73 MA's), (Start: 23 @58505 has 25 MA's), (27, 58532), (33, 58565), (36, 58619), (39, 58652), (43, 58676), (44, 58679),

Gene: Inky_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Inky_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: JAWS_90 Start: 57580, Stop: 57795, Start Num: 20

Candidate Starts for JAWS_90:

(Start: 20 @57580 has 3 MA's), (Start: 22 @57598 has 73 MA's), (Start: 23 @57607 has 25 MA's), (27, 57634), (33, 57667), (36, 57721), (39, 57754), (44, 57781),

Gene: Jarvi_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Jarvi_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: Jayhawk_93 Start: 57646, Stop: 57837, Start Num: 23

Candidate Starts for Jayhawk_93:

(Start: 20 @57619 has 3 MA's), (Start: 22 @57637 has 73 MA's), (Start: 23 @57646 has 25 MA's), (27, 57673), (28, 57691), (33, 57709), (36, 57763), (39, 57796), (44, 57823),

Gene: Jeckyll_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Jeckyll_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: Joy99_92 Start: 57741, Stop: 57941, Start Num: 22

Candidate Starts for Joy99_92:

(16, 57684), (Start: 20 @57723 has 3 MA's), (Start: 22 @57741 has 73 MA's), (Start: 23 @57750 has 25 MA's), (27, 57777), (28, 57795), (33, 57813), (36, 57867), (39, 57900), (44, 57927),

Gene: KiSi_96 Start: 58596, Stop: 58790, Start Num: 23

Candidate Starts for KiSi_96:

(Start: 23 @58596 has 25 MA's), (32, 58653), (33, 58659), (36, 58713), (39, 58746), (40, 58761), (44, 58773), (45, 58776),

Gene: LastHope_97 Start: 58514, Stop: 58711, Start Num: 23

Candidate Starts for LastHope_97:

(21, 58493), (Start: 23 @58514 has 25 MA's), (32, 58574), (33, 58580), (34, 58625), (36, 58634), (39, 58667), (46, 58700),

Gene: LaterM_91 Start: 58027, Stop: 58224, Start Num: 22

Candidate Starts for LaterM_91:

(Start: 20 @58009 has 3 MA's), (Start: 22 @58027 has 73 MA's), (Start: 23 @58036 has 25 MA's), (27, 58063), (33, 58096), (36, 58150), (39, 58183), (42, 58204), (43, 58207),

Gene: LeMond_95 Start: 58553, Stop: 58747, Start Num: 23

Candidate Starts for LeMond_95:

(1, 58364), (Start: 23 @58553 has 25 MA's), (32, 58610), (33, 58616), (36, 58670), (39, 58703), (40, 58718), (44, 58730), (45, 58733),

Gene: LilPharaoh_73 Start: 53190, Stop: 53390, Start Num: 23

Candidate Starts for LilPharaoh_73:

(7, 53079), (10, 53091), (14, 53121), (Start: 23 @53190 has 25 MA's), (32, 53253), (34, 53304), (36, 53313), (39, 53346), (44, 53373),

Gene: LindNT_89 Start: 57914, Stop: 58111, Start Num: 22

Candidate Starts for LindNT_89:

(Start: 20 @57896 has 3 MA's), (Start: 22 @57914 has 73 MA's), (Start: 23 @57923 has 25 MA's), (27, 57950), (33, 57983), (36, 58037), (39, 58070), (42, 58091), (43, 58094),

Gene: Llorens_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Llorens_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: Lunahalos_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Lunahalos_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: MarkPhew_95 Start: 58227, Stop: 58454, Start Num: 19

Candidate Starts for MarkPhew_95:

(Start: 19 @58227 has 1 MA's), (Start: 23 @58266 has 25 MA's), (25, 58281), (27, 58287), (33, 58320), (35, 58368), (36, 58374), (39, 58407), (44, 58434), (46, 58440),

Gene: McMater_93 Start: 59098, Stop: 59295, Start Num: 23

Candidate Starts for McMater_93:

(2, 58921), (4, 58972), (Start: 23 @59098 has 25 MA's), (32, 59158), (33, 59164), (34, 59209), (36, 59218), (39, 59251),

Gene: Mdavu_73 Start: 53466, Stop: 53666, Start Num: 23

Candidate Starts for Mdavu_73:

(7, 53355), (10, 53367), (14, 53397), (Start: 23 @53466 has 25 MA's), (32, 53529), (34, 53580), (36, 53589), (39, 53622), (44, 53649),

Gene: MeaningOfLife_93 Start: 58288, Stop: 58488, Start Num: 22

Candidate Starts for MeaningOfLife_93:

(Start: 20 @58270 has 3 MA's), (Start: 22 @58288 has 73 MA's), (Start: 23 @58297 has 25 MA's), (27, 58324), (28, 58342), (33, 58360), (36, 58414), (39, 58447), (44, 58474),

Gene: Megsy_95 Start: 57961, Stop: 58149, Start Num: 23

Candidate Starts for Megsy_95:

(Start: 20 @57934 has 3 MA's), (Start: 22 @57952 has 73 MA's), (Start: 23 @57961 has 25 MA's), (27, 57988), (33, 58021), (36, 58075), (39, 58108), (43, 58132),

Gene: Murucutumbu_91 Start: 58510, Stop: 58707, Start Num: 22

Candidate Starts for Murucutumbu_91:

(Start: 20 @58492 has 3 MA's), (Start: 22 @58510 has 73 MA's), (Start: 23 @58519 has 25 MA's), (27, 58546), (33, 58579), (36, 58633), (39, 58666), (43, 58690),

Gene: Mynx_92 Start: 57911, Stop: 58111, Start Num: 22

Candidate Starts for Mynx_92:

(Start: 20 @57893 has 3 MA's), (Start: 22 @57911 has 73 MA's), (Start: 23 @57920 has 25 MA's), (27, 57947), (28, 57965), (33, 57983), (36, 58037), (39, 58070), (44, 58097),

Gene: Nergal_72 Start: 49098, Stop: 49304, Start Num: 22

Candidate Starts for Nergal_72:

(Start: 22 @49098 has 73 MA's), (Start: 23 @49107 has 25 MA's), (27, 49128), (29, 49146), (33, 49161), (35, 49209), (36, 49215), (37, 49227), (38, 49239), (39, 49248), (42, 49269), (47, 49287),

Gene: Nibb_95 Start: 57973, Stop: 58158, Start Num: 23

Candidate Starts for Nibb_95:

(1, 57793), (Start: 23 @57973 has 25 MA's), (26, 57991), (27, 57994), (33, 58027), (36, 58081), (39, 58114), (40, 58129), (44, 58141), (46, 58147),

Gene: Nikao_75 Start: 56075, Stop: 56275, Start Num: 23

Candidate Starts for Nikao_75:

(7, 55964), (10, 55976), (14, 56006), (Start: 23 @56075 has 25 MA's), (32, 56138), (34, 56189), (36, 56198), (39, 56231), (44, 56258),

Gene: Oscar_96 Start: 58477, Stop: 58671, Start Num: 23

Candidate Starts for Oscar_96:

(1, 58288), (Start: 23 @58477 has 25 MA's), (32, 58534), (33, 58540), (36, 58594), (39, 58627), (40, 58642), (44, 58654), (45, 58657),

Gene: Padfoot_91 Start: 57818, Stop: 58009, Start Num: 23

Candidate Starts for Padfoot_91:

(16, 57752), (Start: 20 @57791 has 3 MA's), (Start: 22 @57809 has 73 MA's), (Start: 23 @57818 has 25 MA's), (27, 57845), (28, 57863), (33, 57881), (36, 57935), (39, 57968), (44, 57995),

Gene: Padpat_96 Start: 58216, Stop: 58416, Start Num: 22

Candidate Starts for Padpat_96:

(11, 58126), (Start: 20 @58198 has 3 MA's), (Start: 22 @58216 has 73 MA's), (Start: 23 @58225 has 25 MA's), (27, 58252), (28, 58270), (33, 58288), (36, 58342), (39, 58375), (44, 58402),

Gene: Peel_91 Start: 57615, Stop: 57815, Start Num: 22

Candidate Starts for Peel_91:

(6, 57495), (9, 57516), (15, 57552), (Start: 20 @57597 has 3 MA's), (Start: 22 @57615 has 73 MA's), (Start: 23 @57624 has 25 MA's), (27, 57651), (28, 57669), (33, 57687), (36, 57741), (39, 57774), (44, 57801),

Gene: Piatt_90 Start: 57809, Stop: 58009, Start Num: 22

Candidate Starts for Piatt_90:

(16, 57752), (Start: 20 @57791 has 3 MA's), (Start: 22 @57809 has 73 MA's), (Start: 23 @57818 has 25 MA's), (27, 57845), (28, 57863), (33, 57881), (36, 57935), (39, 57968), (44, 57995),

Gene: Pokerus_91 Start: 57621, Stop: 57821, Start Num: 22

Candidate Starts for Pokerus_91:

(11, 57531), (Start: 20 @57603 has 3 MA's), (Start: 22 @57621 has 73 MA's), (Start: 23 @57630 has 25 MA's), (27, 57657), (28, 57675), (33, 57693), (36, 57747), (39, 57780), (44, 57807),

Gene: Prithvi_93 Start: 58221, Stop: 58418, Start Num: 22

Candidate Starts for Prithvi_93:

(Start: 20 @58203 has 3 MA's), (Start: 22 @58221 has 73 MA's), (Start: 23 @58230 has 25 MA's), (27, 58257), (33, 58290), (36, 58344), (39, 58377), (43, 58401),

Gene: QuincyRose_89 Start: 57624, Stop: 57824, Start Num: 22

Candidate Starts for QuincyRose_89:

(Start: 20 @57606 has 3 MA's), (Start: 22 @57624 has 73 MA's), (Start: 23 @57633 has 25 MA's), (27, 57660), (28, 57678), (33, 57696), (36, 57750), (39, 57783), (44, 57810),

Gene: Ramen_92 Start: 57367, Stop: 57567, Start Num: 22

Candidate Starts for Ramen_92:

(11, 57277), (Start: 20 @57349 has 3 MA's), (Start: 22 @57367 has 73 MA's), (Start: 23 @57376 has 25 MA's), (27, 57403), (28, 57421), (33, 57439), (36, 57493), (39, 57526), (44, 57553),

Gene: Rapunzel97_93 Start: 57592, Stop: 57792, Start Num: 22

Candidate Starts for Rapunzel97_93:

(Start: 20 @57574 has 3 MA's), (Start: 22 @57592 has 73 MA's), (Start: 23 @57601 has 25 MA's), (27, 57628), (28, 57646), (33, 57664), (36, 57718), (39, 57751), (44, 57778),

Gene: Richo_93 Start: 59098, Stop: 59295, Start Num: 23

Candidate Starts for Richo_93:

(2, 58921), (4, 58972), (Start: 23 @59098 has 25 MA's), (32, 59158), (33, 59164), (34, 59209), (36, 59218), (39, 59251),

Gene: Rosmarinus_91 Start: 57600, Stop: 57800, Start Num: 22

Candidate Starts for Rosmarinus_91:

(16, 57543), (Start: 20 @57582 has 3 MA's), (Start: 22 @57600 has 73 MA's), (Start: 23 @57609 has 25 MA's), (27, 57636), (28, 57654), (33, 57672), (36, 57726), (39, 57759), (44, 57786),

Gene: SamuelLPlaqson_92 Start: 58057, Stop: 58257, Start Num: 22

Candidate Starts for SamuelLPlaqson_92:

(15, 57997), (Start: 20 @58039 has 3 MA's), (Start: 22 @58057 has 73 MA's), (Start: 23 @58066 has 25 MA's), (27, 58093), (33, 58126), (36, 58180), (39, 58213), (43, 58237), (44, 58240),

Gene: Scarlett_95 Start: 58346, Stop: 58540, Start Num: 23

Candidate Starts for Scarlett_95:

(1, 58157), (Start: 23 @58346 has 25 MA's), (32, 58403), (33, 58409), (36, 58463), (39, 58496), (40, 58511), (44, 58523), (45, 58526),

Gene: SgtBeansprout_73 Start: 53462, Stop: 53662, Start Num: 23

Candidate Starts for SgtBeansprout_73:

(7, 53351), (10, 53363), (14, 53393), (Start: 23 @53462 has 25 MA's), (32, 53525), (34, 53576), (36, 53585), (39, 53618), (44, 53645),

Gene: Shaobing_92 Start: 58740, Stop: 58937, Start Num: 23

Candidate Starts for Shaobing_92:

(2, 58563), (4, 58614), (Start: 23 @58740 has 25 MA's), (32, 58800), (33, 58806), (34, 58851), (36, 58860), (39, 58893),

Gene: ShiaSurprise_93 Start: 57809, Stop: 58009, Start Num: 22

Candidate Starts for ShiaSurprise_93:

(16, 57752), (Start: 20 @57791 has 3 MA's), (Start: 22 @57809 has 73 MA's), (Start: 23 @57818 has 25 MA's), (27, 57845), (28, 57863), (33, 57881), (36, 57935), (39, 57968), (44, 57995),

Gene: SirPhilip_92 Start: 58301, Stop: 58495, Start Num: 23

Candidate Starts for SirPhilip_92:

(18, 58262), (Start: 23 @58301 has 25 MA's), (24, 58310), (27, 58331), (31, 58355), (33, 58364), (35, 58412), (36, 58418), (39, 58451), (44, 58478), (46, 58484),

Gene: Slimphazie_93 Start: 58048, Stop: 58248, Start Num: 22

Candidate Starts for Slimphazie_93:

(Start: 20 @58030 has 3 MA's), (Start: 22 @58048 has 73 MA's), (Start: 23 @58057 has 25 MA's), (27, 58084), (28, 58102), (33, 58120), (36, 58174), (39, 58207), (44, 58234),

Gene: Spock_91 Start: 57613, Stop: 57813, Start Num: 22

Candidate Starts for Spock_91:

(16, 57556), (Start: 20 @57595 has 3 MA's), (Start: 22 @57613 has 73 MA's), (Start: 23 @57622 has 25 MA's), (27, 57649), (28, 57667), (33, 57685), (36, 57739), (39, 57772), (44, 57799),

Gene: Stinson_92 Start: 57794, Stop: 57991, Start Num: 22

Candidate Starts for Stinson_92:

(16, 57740), (Start: 22 @57794 has 73 MA's), (Start: 23 @57803 has 25 MA's), (27, 57830), (33, 57863), (36, 57917), (39, 57950), (43, 57974), (44, 57977),

Gene: Sulley_88 Start: 57378, Stop: 57575, Start Num: 22

Candidate Starts for Sulley_88:

(3, 57219), (8, 57276), (12, 57309), (Start: 20 @57360 has 3 MA's), (Start: 22 @57378 has 73 MA's), (Start: 23 @57387 has 25 MA's), (27, 57414), (33, 57447), (35, 57495), (36, 57501), (39, 57534), (43, 57558), (44, 57561),

Gene: Tachez_91 Start: 57460, Stop: 57660, Start Num: 22

Candidate Starts for Tachez_91:

(11, 57370), (Start: 20 @57442 has 3 MA's), (Start: 22 @57460 has 73 MA's), (Start: 23 @57469 has 25 MA's), (27, 57496), (28, 57514), (33, 57532), (36, 57586), (39, 57619), (44, 57646),

Gene: TaiwanKao_92 Start: 57861, Stop: 58058, Start Num: 22

Candidate Starts for TaiwanKao_92:

(Start: 20 @57843 has 3 MA's), (Start: 22 @57861 has 73 MA's), (Start: 23 @57870 has 25 MA's), (27, 57897), (33, 57930), (36, 57984), (39, 58017), (43, 58041), (44, 58044),

Gene: TingHuaYa_95 Start: 58843, Stop: 59040, Start Num: 23

Candidate Starts for TingHuaYa_95:

(21, 58822), (Start: 23 @58843 has 25 MA's), (32, 58903), (33, 58909), (34, 58954), (36, 58963), (39, 58996), (46, 59029),

Gene: TiniBug_90 Start: 58175, Stop: 58372, Start Num: 22

Candidate Starts for TiniBug_90:

(15, 58115), (Start: 20 @58157 has 3 MA's), (Start: 22 @58175 has 73 MA's), (Start: 23 @58184 has 25 MA's), (27, 58211), (33, 58244), (36, 58298), (39, 58331), (43, 58355), (44, 58358),

Gene: Tiri_92 Start: 57354, Stop: 57554, Start Num: 22

Candidate Starts for Tiri_92:

(Start: 20 @57336 has 3 MA's), (Start: 22 @57354 has 73 MA's), (Start: 23 @57363 has 25 MA's), (27, 57390), (28, 57408), (33, 57426), (36, 57480), (39, 57513), (44, 57540),

Gene: Topper_91 Start: 57612, Stop: 57812, Start Num: 22

Candidate Starts for Topper_91:

(16, 57555), (Start: 20 @57594 has 3 MA's), (Start: 22 @57612 has 73 MA's), (Start: 23 @57621 has 25 MA's), (27, 57648), (28, 57666), (33, 57684), (36, 57738), (39, 57771), (44, 57798),

Gene: Torres_74 Start: 56076, Stop: 56276, Start Num: 23

Candidate Starts for Torres_74:

(7, 55965), (10, 55977), (14, 56007), (Start: 23 @56076 has 25 MA's), (32, 56139), (34, 56190), (36, 56199), (39, 56232), (44, 56259),

Gene: TreyKay_93 Start: 58221, Stop: 58418, Start Num: 22

Candidate Starts for TreyKay_93:

(Start: 20 @58203 has 3 MA's), (Start: 22 @58221 has 73 MA's), (Start: 23 @58230 has 25 MA's), (27, 58257), (33, 58290), (36, 58344), (39, 58377), (43, 58401),

Gene: TruffulaTree_93 Start: 58014, Stop: 58214, Start Num: 22

Candidate Starts for TruffulaTree_93:

(Start: 20 @57996 has 3 MA's), (Start: 22 @58014 has 73 MA's), (Start: 23 @58023 has 25 MA's), (27, 58050), (28, 58068), (33, 58086), (36, 58140), (39, 58173), (44, 58200),

Gene: Twitch_91 Start: 57615, Stop: 57815, Start Num: 22

Candidate Starts for Twitch_91:

(6, 57495), (9, 57516), (15, 57552), (Start: 20 @57597 has 3 MA's), (Start: 22 @57615 has 73 MA's), (Start: 23 @57624 has 25 MA's), (27, 57651), (28, 57669), (33, 57687), (36, 57741), (39, 57774), (44, 57801),

Gene: Urkel_92 Start: 58057, Stop: 58257, Start Num: 22

Candidate Starts for Urkel_92:

(15, 57997), (Start: 20 @58039 has 3 MA's), (Start: 22 @58057 has 73 MA's), (Start: 23 @58066 has 25 MA's), (27, 58093), (33, 58126), (36, 58180), (39, 58213), (43, 58237), (44, 58240),

Gene: Validus_98 Start: 59635, Stop: 59832, Start Num: 23

Candidate Starts for Validus_98:

(2, 59458), (4, 59509), (Start: 23 @59635 has 25 MA's), (32, 59695), (33, 59701), (34, 59746), (36, 59755), (39, 59788),

Gene: Veliki_92 Start: 57583, Stop: 57780, Start Num: 22

Candidate Starts for Veliki_92:

(Start: 20 @57565 has 3 MA's), (Start: 22 @57583 has 73 MA's), (Start: 23 @57592 has 25 MA's),
(27, 57619), (33, 57652), (36, 57706), (39, 57739), (44, 57766),

Gene: YoureAdopted_90 Start: 57409, Stop: 57609, Start Num: 22

Candidate Starts for YoureAdopted_90:

(Start: 20 @57391 has 3 MA's), (Start: 22 @57409 has 73 MA's), (Start: 23 @57418 has 25 MA's),
(27, 57445), (28, 57463), (33, 57481), (36, 57535), (39, 57568), (44, 57595),

Gene: Yunkel11_96 Start: 58346, Stop: 58546, Start Num: 23

Candidate Starts for Yunkel11_96:

(17, 58298), (21, 58325), (Start: 23 @58346 has 25 MA's), (32, 58409), (33, 58415), (34, 58460), (36,
58469), (39, 58502), (44, 58529), (46, 58535),

Gene: Zabiza_87 Start: 53956, Stop: 54153, Start Num: 22

Candidate Starts for Zabiza_87:

(Start: 20 @53938 has 3 MA's), (Start: 22 @53956 has 73 MA's), (Start: 23 @53965 has 25 MA's),
(27, 53992), (33, 54025), (36, 54079), (39, 54112), (44, 54139),

Gene: Zavala_93 Start: 57874, Stop: 58074, Start Num: 22

Candidate Starts for Zavala_93:

(Start: 20 @57856 has 3 MA's), (Start: 22 @57874 has 73 MA's), (Start: 23 @57883 has 25 MA's),
(27, 57910), (28, 57928), (33, 57946), (36, 58000), (39, 58033), (44, 58060),