



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 202817 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202817 has 106 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Nergal_51
- Track 2 : Dole_57, Illumine_57, Devera_59
- Track 3 : Homura_54, Jarvi_54, Peel_54, CREW_54, Boiii_54, Topper_54, Dalmuri_54, BGIlluvia_54, Tiri_55, Hyperbowlee_54, Asayake_54, Jeckyll_54, AlishaPH_54, Atiba_55, BEEST_54, Rosmarinus_54, Joy99_54, Inky_54, Lunahalos_54, Capricorn_54, Blizzard_54, Belladonna_54, CallaLilly_56, Durfee_54, Adephagia_54, Tachez_54, Padpat_56, Spock_54, Twitch_54, Emerson_55, ShiaSurprise_55, Piatt_54, Padfoot_54, Llorens_54, CaseJules_56
- Track 4 : Prithvi_55, LindNT_53, TreyKay_55
- Track 5 : DrHayes_55, Bella96_55, Urkel_55, SamuelLPlaqson_55
- Track 6 : Peanam_57
- Track 7 : TruffulaTree_54, Slimphazie_54, Rapunzel97_55, Jayhawk_55, BarrelRoll_54
- Track 8 : Megsy_56, Murucutumbu_55
- Track 9 : Geraldini_57, Pokerus_53
- Track 10 : Ageofdapage_56
- Track 11 : LaterM_55
- Track 12 : MacKat_49, Clipper_58
- Track 13 : Bern_55, CheetoDust_53
- Track 14 : TiniBug_55
- Track 15 : ActinUp_54, Zavala_56, Zabiza_49, Mynx_55, HedwigODU_54, Ramen_55
- Track 16 : Apocalypse_57
- Track 17 : BaghaKamala_53
- Track 18 : Shaobing_57, Dartin_57, Richo_57, McMater_57, Niklas_57
- Track 19 : JAWS_54, Veliki_55
- Track 20 : Adonis_54, MeaningOfLife_55, YoureAdopted_53
- Track 21 : Beezoo_56
- Track 22 : TaiwanKao_56
- Track 23 : Angelica_54
- Track 24 : Anaya_56
- Track 25 : CrimD_54
- Track 26 : Deby_54
- Track 27 : Ganymede_55, QuincyRose_53
- Track 28 : Curiosium_56
- Track 29 : Sulley_54
- Track 30 : Stinson_55

- Track 31 : Ximenita_61, Syra333_60
- Track 32 : Bryler_58, Tierra_58, Cain_58, Phrank_58
- Track 33 : Unicorn_56, Krueger_61, PhelpsODU_56
- Track 34 : Shadow1_60, Sunflower1121_61
- Track 35 : SirPhilip_56
- Track 36 : Marshawn_56
- Track 37 : TClif_57

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

The start number called the most often in the published annotations is 12, it was called in 84 of the 98 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp_54, Adephegia_54, Adonis_54, Ageofdapage_56, AlishaPH_54, Anaya_56, Angelica_54, Apocalypse_57, Asayake_54, Atiba_55, BEEST_54, BGlluviae_54, BaghaKamala_53, BarrelRoll_54, Beezoo_56, Bella96_55, Belladonna_54, Bern_55, Blizzard_54, Boiiii_54, CREW_54, CallaLilly_56, Capricorn_54, CaseJules_56, CheetoDust_53, Clipper_58, CrimD_54, Curiosium_56, Dalmuri_54, Dartin_57, Deby_54, Devera_59, Dole_57, DrHayes_55, Durfee_54, Emerson_55, Ganymede_55, Geraldini_57, HedwigODU_54, Homura_54, Hyperbowlee_54, Illumine_57, Inky_54, JAWS_54, Jarvi_54, Jayhawk_55, Jeckyll_54, Joy99_54, LaterM_55, LindNT_53, Llorens_54, Lunahalos_54, MacKat_49, McMater_57, MeaningOfLife_55, Megsy_56, Murucutumbu_55, Mynx_55, Nergal_51, Niklas_57, Padfoot_54, Padpat_56, Peanam_57, Peel_54, Piatt_54, Pokerus_53, Prithvi_55, QuincyRose_53, Ramen_55, Rapunzel97_55, Richo_57, Rosmarinus_54, SamuelLPlaqson_55, Shaobing_57, ShiaSurprise_55, Slimphazie_54, Spock_54, Stinson_55, Sulley_54, Tachez_54, TaiwanKao_56, TiniBug_55, Tiri_55, Topper_54, TreyKay_55, TruffulaTree_54, Twitch_54, Urkel_55, Veliki_55, YoureAdopted_53, Zabiza_49, Zavala_56,

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

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

- Bryler_58, Cain_58, Krueger_61, Marshawn_56, PhelpsODU_56, Phrank_58, Shadow1_60, SirPhilip_56, Sunflower1121_61, Syra333_60, TClif_57, Tierra_58, Unicorn_56, Ximenita_61,

Summary by start number:

Start 8:

- Found in 4 of 106 (3.8%) of genes in pham
- Manual Annotations of this start: 4 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Krueger_61 (K6), PhelpsODU_56 (K6), TClif_57 (K6), Unicorn_56 (K6),

Start 9:

- Found in 4 of 106 (3.8%) of genes in pham

- Manual Annotations of this start: 4 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bryler_58 (K6), Cain_58 (K6), Phrank_58 (K6), Tierra_58 (K6),

Start 10:

- Found in 4 of 106 (3.8%) of genes in pham
- Manual Annotations of this start: 4 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shadow1_60 (K6), Sunflower1121_61 (K6), Syra333_60 (K6), Ximenita_61 (K6),

Start 12:

- Found in 92 of 106 (86.8%) of genes in pham
- Manual Annotations of this start: 84 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ActinUp_54 (K1), Adephagia_54 (K1), Adonis_54 (K1), Ageofdapage_56 (K1), AlishaPH_54 (K1), Anaya_56 (K1), Angelica_54 (K1), Apocalypse_57 (K1), Asayake_54 (K1), Atiba_55 (K1), BEEST_54 (K1), BGIluviae_54 (K1), BaghaKamala_53 (K1), BarrelRoll_54 (K1), Beezoo_56 (K1), Bella96_55 (K1), Belladonna_54 (K1), Bern_55 (K1), Blizzard_54 (K1), Boiiii_54 (K1), CREW_54 (K1), CallaLilly_56 (K1), Capricorn_54 (K1), CaseJules_56 (K1), CheetoDust_53 (K1), Clipper_58 (K1), CrimD_54 (K1), Curiosium_56 (K1), Dalmuri_54 (K1), Dartin_57 (K1), Deby_54 (K1), Devera_59 (K1), Dole_57 (K1), DrHayes_55 (K1), Durfee_54 (K1), Emerson_55 (K1), Ganymede_55 (K1), Geraldini_57 (K1), HedwigODU_54 (K1), Homura_54 (K1), Hyperbowlee_54 (K1), Illumine_57 (K1), Inky_54 (K1), JAWS_54 (K1), Jarvi_54 (K1), Jayhawk_55 (K1), Jeckyll_54 (K1), Joy99_54 (K1), LaterM_55 (K1), LindNT_53 (K1), Llorens_54 (K1), Lunahalos_54 (K1), MacKat_49 (K1), McMater_57 (K1), MeaningOfLife_55 (K1), Megsy_56 (K1), Murucutumbu_55 (K1), Mynx_55 (K1), Nergal_51 (AG), Niklas_57 (K1), Padfoot_54 (K1), Padpat_56 (K1), Peanam_57 (K1), Peel_54 (K1), Piatt_54 (K1), Pokerus_53 (K1), Prithvi_55 (K1), QuincyRose_53 (K1), Ramen_55 (K1), Rapunzel97_55 (K1), Richo_57 (K1), Rosmarinus_54 (K1), SamuelLPlaqson_55 (K1), Shaobing_57 (K1), ShiaSurprise_55 (K1), Slimphazie_54 (K1), Spock_54 (K1), Stinson_55 (K1), Sulley_54 (K1), Tachez_54 (K1), TaiwanKao_56 (K1), TiniBug_55 (K1), Tiri_55 (K1), Topper_54 (K1), TreyKay_55 (K1), TruffulaTree_54 (K1), Twitch_54 (K1), Urkel_55 (K1), Veliki_55 (K1), YoureAdopted_53 (K1), Zabiza_49 (K1), Zavala_56 (K1),

Start 13:

- Found in 2 of 106 (1.9%) of genes in pham
- Manual Annotations of this start: 2 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marshawn_56 (K6), SirPhilip_56 (K6),

Summary by clusters:

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

Info for manual annotations of cluster AG:

- Start number 12 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:

- Start number 12 was manually annotated 83 times for cluster K1.

Info for manual annotations of cluster K6:

- Start number 8 was manually annotated 4 times for cluster K6.
- Start number 9 was manually annotated 4 times for cluster K6.
- Start number 10 was manually annotated 4 times for cluster K6.
- Start number 13 was manually annotated 2 times for cluster K6.

Gene Information:

Gene: ActinUp_54 Start: 39118, Stop: 39498, Start Num: 12

Candidate Starts for ActinUp_54:

(4, 38953), (6, 39004), (Start: 12 @39118 has 84 MA's), (33, 39364), (35, 39379), (39, 39418), (41, 39436),

Gene: Adephagia_54 Start: 39115, Stop: 39498, Start Num: 12

Candidate Starts for Adephagia_54:

(2, 38860), (3, 38872), (4, 38950), (6, 39001), (Start: 12 @39115 has 84 MA's), (21, 39265), (33, 39361), (35, 39376), (39, 39415), (40, 39424),

Gene: Adonis_54 Start: 39359, Stop: 39742, Start Num: 12

Candidate Starts for Adonis_54:

(2, 39104), (3, 39116), (4, 39194), (6, 39245), (Start: 12 @39359 has 84 MA's), (33, 39605), (35, 39620), (39, 39659), (40, 39668),

Gene: Ageofdapage_56 Start: 40108, Stop: 40389, Start Num: 12

Candidate Starts for Ageofdapage_56:

(4, 39943), (6, 39994), (Start: 12 @40108 has 84 MA's), (33, 40354),

Gene: AlishaPH_54 Start: 39376, Stop: 39759, Start Num: 12

Candidate Starts for AlishaPH_54:

(2, 39121), (3, 39133), (4, 39211), (6, 39262), (Start: 12 @39376 has 84 MA's), (21, 39526), (33, 39622), (35, 39637), (39, 39676), (40, 39685),

Gene: Anaya_56 Start: 39634, Stop: 40017, Start Num: 12

Candidate Starts for Anaya_56:

(4, 39469), (6, 39520), (Start: 12 @39634 has 84 MA's), (29, 39850), (33, 39880), (35, 39895), (39, 39934), (40, 39943), (41, 39952),

Gene: Angelica_54 Start: 39265, Stop: 39633, Start Num: 12

Candidate Starts for Angelica_54:

(2, 39010), (3, 39022), (4, 39100), (6, 39151), (Start: 12 @39265 has 84 MA's), (33, 39511), (35, 39526), (39, 39565), (41, 39583),

Gene: Apocalypse_57 Start: 40045, Stop: 40428, Start Num: 12

Candidate Starts for Apocalypse_57:

(2, 39790), (3, 39802), (4, 39880), (6, 39931), (7, 39940), (Start: 12 @40045 has 84 MA's), (21, 40195), (33, 40291), (35, 40306), (39, 40345), (40, 40354),

Gene: Asayake_54 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for Asayake_54:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: Atiba_55 Start: 39078, Stop: 39461, Start Num: 12

Candidate Starts for Atiba_55:

(2, 38823), (3, 38835), (4, 38913), (6, 38964), (Start: 12 @39078 has 84 MA's), (21, 39228), (33, 39324), (35, 39339), (39, 39378), (40, 39387),

Gene: BEEST_54 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for BEEST_54:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: BGlluviae_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for BGlluviae_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: BaghaKamala_53 Start: 38477, Stop: 38860, Start Num: 12

Candidate Starts for BaghaKamala_53:

(4, 38312), (6, 38363), (7, 38372), (Start: 12 @38477 has 84 MA's), (21, 38627), (33, 38723), (35, 38738), (39, 38777), (40, 38786),

Gene: BarrelRoll_54 Start: 39101, Stop: 39481, Start Num: 12

Candidate Starts for BarrelRoll_54:

(4, 38936), (6, 38987), (Start: 12 @39101 has 84 MA's), (21, 39251), (33, 39347), (35, 39362), (39, 39401), (41, 39419),

Gene: Beezoo_56 Start: 40076, Stop: 40459, Start Num: 12

Candidate Starts for Beezoo_56:

(2, 39821), (3, 39833), (4, 39911), (6, 39962), (Start: 12 @40076 has 84 MA's), (33, 40322), (35, 40337), (40, 40385),

Gene: Bella96_55 Start: 39857, Stop: 40222, Start Num: 12

Candidate Starts for Bella96_55:

(4, 39692), (6, 39743), (Start: 12 @39857 has 84 MA's), (15, 39908), (19, 39947), (28, 40070), (33, 40100), (35, 40115), (39, 40154), (40, 40163), (41, 40172),

Gene: Belladonna_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Belladonna_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: Bern_55 Start: 38067, Stop: 38450, Start Num: 12

Candidate Starts for Bern_55:

(2, 37812), (3, 37824), (4, 37902), (6, 37953), (7, 37962), (Start: 12 @38067 has 84 MA's), (21, 38217), (33, 38313), (35, 38328), (39, 38367), (40, 38376),

Gene: Blizzard_54 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for Blizzard_54:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: Boiiii_54 Start: 39432, Stop: 39815, Start Num: 12

Candidate Starts for Boiiii_54:

(2, 39177), (3, 39189), (4, 39267), (6, 39318), (Start: 12 @39432 has 84 MA's), (21, 39582), (33, 39678), (35, 39693), (39, 39732), (40, 39741),

Gene: Bryler_58 Start: 38878, Stop: 39183, Start Num: 9

Candidate Starts for Bryler_58:

(Start: 9 @38878 has 4 MA's), (23, 39082), (24, 39085),

Gene: CREW_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for CREW_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: Cain_58 Start: 38866, Stop: 39171, Start Num: 9

Candidate Starts for Cain_58:

(Start: 9 @38866 has 4 MA's), (23, 39070), (24, 39073),

Gene: CallaLilly_56 Start: 39156, Stop: 39539, Start Num: 12

Candidate Starts for CallaLilly_56:

(2, 38901), (3, 38913), (4, 38991), (6, 39042), (Start: 12 @39156 has 84 MA's), (21, 39306), (33, 39402), (35, 39417), (39, 39456), (40, 39465),

Gene: Capricorn_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Capricorn_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: CaseJules_56 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for CaseJules_56:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: CheetoDust_53 Start: 38521, Stop: 38904, Start Num: 12

Candidate Starts for CheetoDust_53:

(2, 38266), (3, 38278), (4, 38356), (6, 38407), (7, 38416), (Start: 12 @38521 has 84 MA's), (21, 38671), (33, 38767), (35, 38782), (39, 38821), (40, 38830),

Gene: Clipper_58 Start: 39697, Stop: 40077, Start Num: 12

Candidate Starts for Clipper_58:

(2, 39442), (3, 39454), (4, 39532), (6, 39583), (Start: 12 @39697 has 84 MA's), (33, 39943), (35, 39958), (39, 39997), (41, 40015),

Gene: CrimD_54 Start: 39353, Stop: 39733, Start Num: 12

Candidate Starts for CrimD_54:

(2, 39098), (3, 39110), (4, 39188), (6, 39239), (Start: 12 @39353 has 84 MA's), (22, 39521), (33, 39599), (35, 39614), (39, 39653), (40, 39662), (41, 39671),

Gene: Curiosium_56 Start: 38035, Stop: 38376, Start Num: 12

Candidate Starts for Curiosium_56:

(Start: 12 @38035 has 84 MA's), (26, 38242), (38, 38320),

Gene: Dalmuri_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Dalmuri_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: Dartin_57 Start: 39804, Stop: 40115, Start Num: 12

Candidate Starts for Dartin_57:

(2, 39549), (4, 39639), (6, 39690), (Start: 12 @39804 has 84 MA's), (21, 39954), (33, 40047),

Gene: Deby_54 Start: 39292, Stop: 39672, Start Num: 12

Candidate Starts for Deby_54:

(2, 39037), (3, 39049), (4, 39127), (6, 39178), (Start: 12 @39292 has 84 MA's), (21, 39442), (35, 39553), (39, 39592), (40, 39601),

Gene: Devera_59 Start: 39872, Stop: 40252, Start Num: 12

Candidate Starts for Devera_59:

(Start: 12 @39872 has 84 MA's), (28, 40085), (33, 40115), (35, 40130), (39, 40169), (40, 40178),

Gene: Dole_57 Start: 39875, Stop: 40255, Start Num: 12

Candidate Starts for Dole_57:

(Start: 12 @39875 has 84 MA's), (28, 40088), (33, 40118), (35, 40133), (39, 40172), (40, 40181),

Gene: DrHayes_55 Start: 40012, Stop: 40377, Start Num: 12

Candidate Starts for DrHayes_55:

(4, 39847), (6, 39898), (Start: 12 @40012 has 84 MA's), (15, 40063), (19, 40102), (28, 40225), (33, 40255), (35, 40270), (39, 40309), (40, 40318), (41, 40327),

Gene: Durfee_54 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for Durfee_54:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: Emerson_55 Start: 39112, Stop: 39495, Start Num: 12

Candidate Starts for Emerson_55:

(2, 38857), (3, 38869), (4, 38947), (6, 38998), (Start: 12 @39112 has 84 MA's), (21, 39262), (33, 39358), (35, 39373), (39, 39412), (40, 39421),

Gene: Ganymede_55 Start: 39494, Stop: 39874, Start Num: 12

Candidate Starts for Ganymede_55:

(2, 39239), (3, 39251), (4, 39329), (6, 39380), (Start: 12 @39494 has 84 MA's), (21, 39644), (33, 39740), (35, 39755), (39, 39794),

Gene: Geraldini_57 Start: 40165, Stop: 40548, Start Num: 12

Candidate Starts for Geraldini_57:

(4, 40000), (6, 40051), (Start: 12 @40165 has 84 MA's), (21, 40315), (33, 40411), (35, 40426), (39, 40465), (40, 40474),

Gene: HedwigODU_54 Start: 39118, Stop: 39498, Start Num: 12

Candidate Starts for HedwigODU_54:

(4, 38953), (6, 39004), (Start: 12 @39118 has 84 MA's), (33, 39364), (35, 39379), (39, 39418), (41, 39436),

Gene: Homura_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Homura_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: Hyperbowlee_54 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for Hyperbowlee_54:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: Illumine_57 Start: 39874, Stop: 40254, Start Num: 12

Candidate Starts for Illumine_57:

(Start: 12 @39874 has 84 MA's), (28, 40087), (33, 40117), (35, 40132), (39, 40171), (40, 40180),

Gene: Inky_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Inky_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: JAWS_54 Start: 39107, Stop: 39487, Start Num: 12

Candidate Starts for JAWS_54:

(2, 38852), (3, 38864), (4, 38942), (6, 38993), (Start: 12 @39107 has 84 MA's), (33, 39353), (35, 39368), (39, 39407), (41, 39425),

Gene: Jarvi_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Jarvi_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: Jayhawk_55 Start: 39116, Stop: 39496, Start Num: 12

Candidate Starts for Jayhawk_55:

(4, 38951), (6, 39002), (Start: 12 @39116 has 84 MA's), (21, 39266), (33, 39362), (35, 39377), (39, 39416), (41, 39434),

Gene: Jeckyll_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Jeckyll_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: Joy99_54 Start: 39162, Stop: 39545, Start Num: 12

Candidate Starts for Joy99_54:

(2, 38907), (3, 38919), (4, 38997), (6, 39048), (Start: 12 @39162 has 84 MA's), (21, 39312), (33, 39408), (35, 39423), (39, 39462), (40, 39471),

Gene: Krueger_61 Start: 39855, Stop: 40163, Start Num: 8

Candidate Starts for Krueger_61:

(Start: 8 @39855 has 4 MA's), (23, 40062), (24, 40065),

Gene: LaterM_55 Start: 39999, Stop: 40379, Start Num: 12

Candidate Starts for LaterM_55:

(4, 39834), (6, 39885), (Start: 12 @39999 has 84 MA's), (20, 40134), (33, 40245), (35, 40260), (39, 40299), (40, 40308), (41, 40317),

Gene: LindNT_53 Start: 39321, Stop: 39701, Start Num: 12

Candidate Starts for LindNT_53:

(2, 39066), (3, 39078), (4, 39156), (6, 39207), (Start: 12 @39321 has 84 MA's), (22, 39489), (33, 39567), (35, 39582), (39, 39621), (40, 39630), (41, 39639),

Gene: Llorens_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Llorens_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: Lunahalos_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Lunahalos_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: MacKat_49 Start: 34581, Stop: 34961, Start Num: 12

Candidate Starts for MacKat_49:

(2, 34326), (3, 34338), (4, 34416), (6, 34467), (Start: 12 @34581 has 84 MA's), (33, 34827), (35, 34842), (39, 34881), (41, 34899),

Gene: Marshawn_56 Start: 39609, Stop: 39935, Start Num: 13

Candidate Starts for Marshawn_56:

(5, 39453), (Start: 13 @39609 has 2 MA's), (18, 39690), (21, 39759), (25, 39810), (33, 39861), (34, 39870), (37, 39888),

Gene: McMater_57 Start: 39804, Stop: 40115, Start Num: 12

Candidate Starts for McMater_57:

(2, 39549), (4, 39639), (6, 39690), (Start: 12 @39804 has 84 MA's), (21, 39954), (33, 40047),

Gene: MeaningOfLife_55 Start: 39988, Stop: 40371, Start Num: 12

Candidate Starts for MeaningOfLife_55:

(2, 39733), (3, 39745), (4, 39823), (6, 39874), (Start: 12 @39988 has 84 MA's), (33, 40234), (35, 40249), (39, 40288), (40, 40297),

Gene: Megsy_56 Start: 39389, Stop: 39769, Start Num: 12

Candidate Starts for Megsy_56:

(4, 39224), (6, 39275), (Start: 12 @39389 has 84 MA's), (33, 39635), (35, 39650), (39, 39689), (40, 39698), (41, 39707),

Gene: Murucutumbu_55 Start: 40098, Stop: 40478, Start Num: 12

Candidate Starts for Murucutumbu_55:

(4, 39933), (6, 39984), (Start: 12 @40098 has 84 MA's), (33, 40344), (35, 40359), (39, 40398), (40, 40407), (41, 40416),

Gene: Mynx_55 Start: 39437, Stop: 39817, Start Num: 12

Candidate Starts for Mynx_55:

(4, 39272), (6, 39323), (Start: 12 @39437 has 84 MA's), (33, 39683), (35, 39698), (39, 39737), (41, 39755),

Gene: Nergal_51 Start: 37133, Stop: 37462, Start Num: 12

Candidate Starts for Nergal_51:

(Start: 12 @37133 has 84 MA's), (14, 37175), (17, 37211), (31, 37373), (32, 37379),

Gene: Niklas_57 Start: 39865, Stop: 40176, Start Num: 12

Candidate Starts for Niklas_57:

(2, 39610), (4, 39700), (6, 39751), (Start: 12 @39865 has 84 MA's), (21, 40015), (33, 40108),

Gene: Padfoot_54 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for Padfoot_54:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: Padpat_56 Start: 39112, Stop: 39495, Start Num: 12

Candidate Starts for Padpat_56:

(2, 38857), (3, 38869), (4, 38947), (6, 38998), (Start: 12 @39112 has 84 MA's), (21, 39262), (33, 39358), (35, 39373), (39, 39412), (40, 39421),

Gene: Peanam_57 Start: 39823, Stop: 40134, Start Num: 12

Candidate Starts for Peanam_57:

(1, 39547), (2, 39568), (4, 39658), (6, 39709), (Start: 12 @39823 has 84 MA's), (21, 39973), (33, 40066),

Gene: Peel_54 Start: 39235, Stop: 39618, Start Num: 12

Candidate Starts for Peel_54:

(2, 38980), (3, 38992), (4, 39070), (6, 39121), (Start: 12 @39235 has 84 MA's), (21, 39385), (33, 39481), (35, 39496), (39, 39535), (40, 39544),

Gene: PhelpsODU_56 Start: 38793, Stop: 39101, Start Num: 8

Candidate Starts for PhelpsODU_56:

(Start: 8 @38793 has 4 MA's), (23, 39000), (24, 39003),

Gene: Phrank_58 Start: 38856, Stop: 39161, Start Num: 9

Candidate Starts for Phrank_58:

(Start: 9 @38856 has 4 MA's), (23, 39060), (24, 39063),

Gene: Piatt_54 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for Piatt_54:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: Pokerus_53 Start: 39165, Stop: 39548, Start Num: 12

Candidate Starts for Pokerus_53:

(4, 39000), (6, 39051), (Start: 12 @39165 has 84 MA's), (21, 39315), (33, 39411), (35, 39426), (39, 39465), (40, 39474),

Gene: Prithvi_55 Start: 39321, Stop: 39701, Start Num: 12

Candidate Starts for Prithvi_55:

(2, 39066), (3, 39078), (4, 39156), (6, 39207), (Start: 12 @39321 has 84 MA's), (22, 39489), (33, 39567), (35, 39582), (39, 39621), (40, 39630), (41, 39639),

Gene: QuincyRose_53 Start: 39494, Stop: 39874, Start Num: 12

Candidate Starts for QuincyRose_53:

(2, 39239), (3, 39251), (4, 39329), (6, 39380), (Start: 12 @39494 has 84 MA's), (21, 39644), (33, 39740), (35, 39755), (39, 39794),

Gene: Ramen_55 Start: 39120, Stop: 39500, Start Num: 12

Candidate Starts for Ramen_55:

(4, 38955), (6, 39006), (Start: 12 @39120 has 84 MA's), (33, 39366), (35, 39381), (39, 39420), (41, 39438),

Gene: Rapunzel97_55 Start: 39116, Stop: 39496, Start Num: 12

Candidate Starts for Rapunzel97_55:

(4, 38951), (6, 39002), (Start: 12 @39116 has 84 MA's), (21, 39266), (33, 39362), (35, 39377), (39, 39416), (41, 39434),

Gene: Richo_57 Start: 39804, Stop: 40115, Start Num: 12

Candidate Starts for Richo_57:

(2, 39549), (4, 39639), (6, 39690), (Start: 12 @39804 has 84 MA's), (21, 39954), (33, 40047),

Gene: Rosmarinus_54 Start: 39221, Stop: 39604, Start Num: 12

Candidate Starts for Rosmarinus_54:

(2, 38966), (3, 38978), (4, 39056), (6, 39107), (Start: 12 @39221 has 84 MA's), (21, 39371), (33, 39467), (35, 39482), (39, 39521), (40, 39530),

Gene: SamuelLPlaqson_55 Start: 40012, Stop: 40377, Start Num: 12

Candidate Starts for SamuelLPlaqson_55:

(4, 39847), (6, 39898), (Start: 12 @40012 has 84 MA's), (15, 40063), (19, 40102), (28, 40225), (33, 40255), (35, 40270), (39, 40309), (40, 40318), (41, 40327),

Gene: Shadow1_60 Start: 39700, Stop: 40008, Start Num: 10

Candidate Starts for Shadow1_60:

(Start: 10 @39700 has 4 MA's), (11, 39721), (23, 39913), (24, 39916), (30, 39946),

Gene: Shaobing_57 Start: 39841, Stop: 40152, Start Num: 12

Candidate Starts for Shaobing_57:

(2, 39586), (4, 39676), (6, 39727), (Start: 12 @39841 has 84 MA's), (21, 39991), (33, 40084),

Gene: ShiaSurprise_55 Start: 39430, Stop: 39813, Start Num: 12

Candidate Starts for ShiaSurprise_55:

(2, 39175), (3, 39187), (4, 39265), (6, 39316), (Start: 12 @39430 has 84 MA's), (21, 39580), (33, 39676), (35, 39691), (39, 39730), (40, 39739),

Gene: SirPhilip_56 Start: 40093, Stop: 40404, Start Num: 13

Candidate Starts for SirPhilip_56:

(Start: 13 @40093 has 2 MA's), (21, 40243), (29, 40312), (36, 40366),

Gene: Slimphazie_54 Start: 39116, Stop: 39496, Start Num: 12

Candidate Starts for Slimphazie_54:

(4, 38951), (6, 39002), (Start: 12 @39116 has 84 MA's), (21, 39266), (33, 39362), (35, 39377), (39, 39416), (41, 39434),

Gene: Spock_54 Start: 39234, Stop: 39617, Start Num: 12

Candidate Starts for Spock_54:

(2, 38979), (3, 38991), (4, 39069), (6, 39120), (Start: 12 @39234 has 84 MA's), (21, 39384), (33, 39480), (35, 39495), (39, 39534), (40, 39543),

Gene: Stinson_55 Start: 39621, Stop: 40001, Start Num: 12

Candidate Starts for Stinson_55:

(4, 39456), (6, 39507), (Start: 12 @39621 has 84 MA's), (28, 39834), (33, 39864), (35, 39879), (39, 39918), (40, 39927), (41, 39936),

Gene: Sulley_54 Start: 39280, Stop: 39666, Start Num: 12

Candidate Starts for Sulley_54:

(4, 39115), (6, 39166), (7, 39175), (Start: 12 @39280 has 84 MA's), (21, 39430), (33, 39526), (35, 39541), (39, 39580), (40, 39589), (41, 39598), (42, 39640),

Gene: Sunflower1121_61 Start: 39846, Stop: 40154, Start Num: 10

Candidate Starts for Sunflower1121_61:

(Start: 10 @39846 has 4 MA's), (11, 39867), (23, 40059), (24, 40062), (30, 40092),

Gene: Syra333_60 Start: 39867, Stop: 40175, Start Num: 10

Candidate Starts for Syra333_60:

(Start: 10 @39867 has 4 MA's), (11, 39888), (23, 40080), (24, 40083), (30, 40113),

Gene: TClif_57 Start: 39529, Stop: 39831, Start Num: 8

Candidate Starts for TClif_57:

(Start: 8 @39529 has 4 MA's), (16, 39616), (21, 39700), (27, 39745),

Gene: Tachez_54 Start: 39078, Stop: 39461, Start Num: 12

Candidate Starts for Tachez_54:

(2, 38823), (3, 38835), (4, 38913), (6, 38964), (Start: 12 @39078 has 84 MA's), (21, 39228), (33, 39324), (35, 39339), (39, 39378), (40, 39387),

Gene: TaiwanKao_56 Start: 39383, Stop: 39763, Start Num: 12

Candidate Starts for TaiwanKao_56:

(2, 39128), (3, 39140), (4, 39218), (6, 39269), (Start: 12 @39383 has 84 MA's), (33, 39629), (35, 39644), (39, 39683), (40, 39692), (41, 39701),

Gene: Tierra_58 Start: 39667, Stop: 39972, Start Num: 9

Candidate Starts for Tierra_58:

(Start: 9 @39667 has 4 MA's), (23, 39871), (24, 39874),

Gene: TiniBug_55 Start: 40008, Stop: 40373, Start Num: 12

Candidate Starts for TiniBug_55:

(4, 39843), (6, 39894), (Start: 12 @40008 has 84 MA's), (15, 40059), (19, 40098), (28, 40221), (33, 40251), (39, 40305), (40, 40314), (41, 40323),

Gene: Tiri_55 Start: 39408, Stop: 39788, Start Num: 12

Candidate Starts for Tiri_55:

(2, 39153), (3, 39165), (4, 39243), (6, 39294), (Start: 12 @39408 has 84 MA's), (21, 39558), (33, 39654), (35, 39669), (39, 39708), (40, 39717),

Gene: Topper_54 Start: 39233, Stop: 39616, Start Num: 12

Candidate Starts for Topper_54:

(2, 38978), (3, 38990), (4, 39068), (6, 39119), (Start: 12 @39233 has 84 MA's), (21, 39383), (33, 39479), (35, 39494), (39, 39533), (40, 39542),

Gene: TreyKay_55 Start: 39321, Stop: 39701, Start Num: 12

Candidate Starts for TreyKay_55:

(2, 39066), (3, 39078), (4, 39156), (6, 39207), (Start: 12 @39321 has 84 MA's), (22, 39489), (33, 39567), (35, 39582), (39, 39621), (40, 39630), (41, 39639),

Gene: TruffulaTree_54 Start: 39112, Stop: 39492, Start Num: 12

Candidate Starts for TruffulaTree_54:

(4, 38947), (6, 38998), (Start: 12 @39112 has 84 MA's), (21, 39262), (33, 39358), (35, 39373), (39, 39412), (41, 39430),

Gene: Twitch_54 Start: 39235, Stop: 39618, Start Num: 12

Candidate Starts for Twitch_54:

(2, 38980), (3, 38992), (4, 39070), (6, 39121), (Start: 12 @39235 has 84 MA's), (21, 39385), (33, 39481), (35, 39496), (39, 39535), (40, 39544),

Gene: Unicorn_56 Start: 38793, Stop: 39101, Start Num: 8

Candidate Starts for Unicorn_56:

(Start: 8 @38793 has 4 MA's), (23, 39000), (24, 39003),

Gene: Urkel_55 Start: 40012, Stop: 40377, Start Num: 12

Candidate Starts for Urkel_55:

(4, 39847), (6, 39898), (Start: 12 @40012 has 84 MA's), (15, 40063), (19, 40102), (28, 40225), (33, 40255), (35, 40270), (39, 40309), (40, 40318), (41, 40327),

Gene: Veliki_55 Start: 39098, Stop: 39478, Start Num: 12

Candidate Starts for Veliki_55:

(2, 38843), (3, 38855), (4, 38933), (6, 38984), (Start: 12 @39098 has 84 MA's), (33, 39344), (35, 39359), (39, 39398), (41, 39416),

Gene: Ximenita_61 Start: 39864, Stop: 40172, Start Num: 10

Candidate Starts for Ximenita_61:

(Start: 10 @39864 has 4 MA's), (11, 39885), (23, 40077), (24, 40080), (30, 40110),

Gene: YoureAdopted_53 Start: 39236, Stop: 39616, Start Num: 12

Candidate Starts for YoureAdopted_53:

(2, 38981), (3, 38993), (4, 39071), (6, 39122), (Start: 12 @39236 has 84 MA's), (33, 39482), (35, 39497), (39, 39536), (40, 39545),

Gene: Zabiza_49 Start: 35423, Stop: 35803, Start Num: 12

Candidate Starts for Zabiza_49:

(4, 35258), (6, 35309), (Start: 12 @35423 has 84 MA's), (33, 35669), (35, 35684), (39, 35723), (41, 35741),

Gene: Zavala_56 Start: 39397, Stop: 39777, Start Num: 12

Candidate Starts for Zavala_56:

(4, 39232), (6, 39283), (Start: 12 @39397 has 84 MA's), (33, 39643), (35, 39658), (39, 39697), (41, 39715),