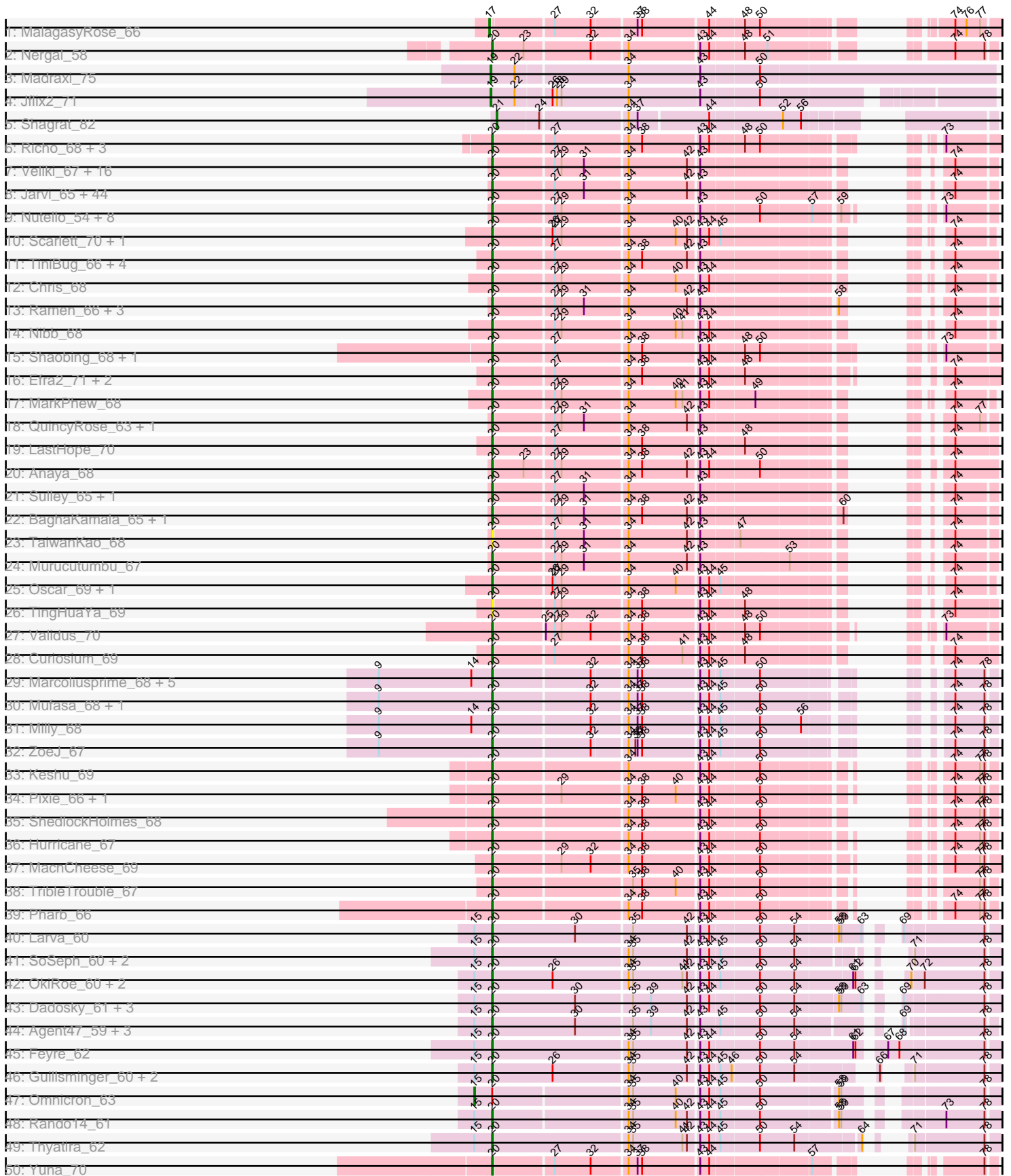
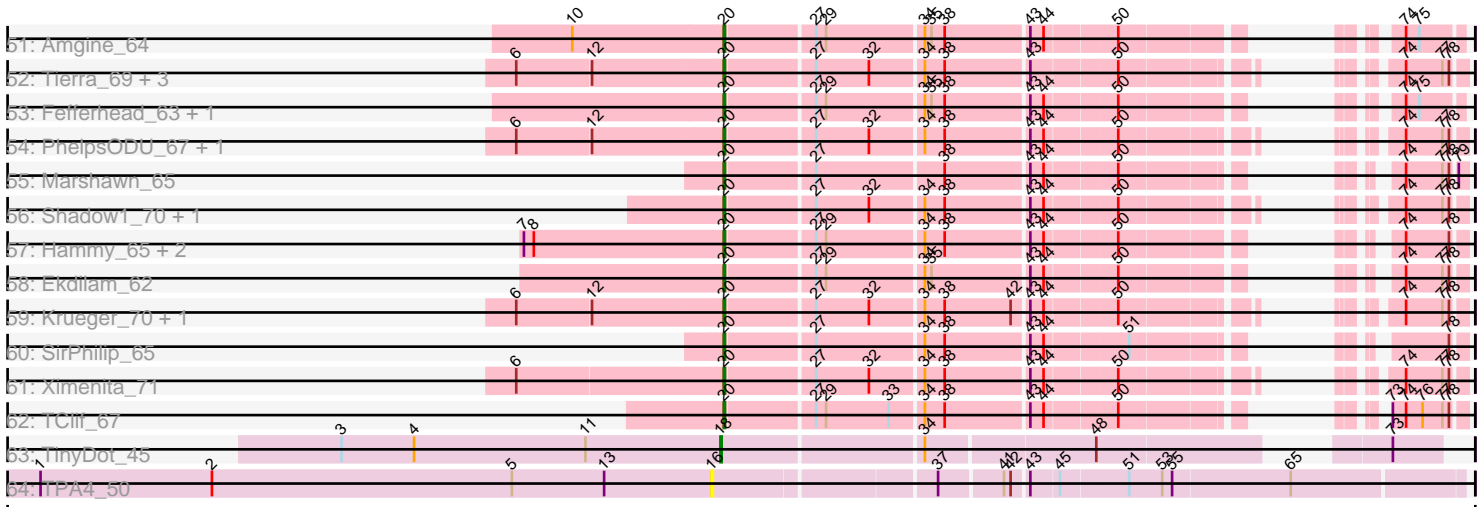


Pham 196321



Pham 196321



Sample	Variant Position	Read Count
51: Amgine_64	6	10
52: Tierra_69 + 3	6	12
53: Felterhead_63 + 1	6	12
54: PhelpsODU_67 + 1	6	12
55: Marshawn_65	6	12
56: ShadowI_70 + 1	6	12
57: Hammy_65 + 2	6	12
58: Ekollam_62	6	12
59: Krueger_70 + 1	6	12
60: SirPhilip_65	6	12
61: Ximenita_71	6	12
62: TCM_67	6	12
63: TinyDot_45	6	12
64: NPA4_60	6	12

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 196321 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196321 has 178 members, 7 are drafts.

Phages represented in each track:

- Track 1 : MalagasyRose_66
- Track 2 : Nergal_58
- Track 3 : Madraxi_75
- Track 4 : Jflix2_71
- Track 5 : Shagrat_82
- Track 6 : Richo_68, Dartin_68, Niklas_68, McMater_68
- Track 7 : Veliki_67, LaterM_66, Stinson_67, JAWS_66, Ageofdapage_69, Devera_73, TruffulaTree_66, BarrelRoll_66, Rapunzel97_67, Apocalypse_68, Dole_71, Slimphazie_66, Deby_66, Zavala_68, Illumine_71, Mynx_67, MeaningOfLife_66
- Track 8 : Jarvi_65, Tachez_65, BGIlluviae_65, Inky_65, Durfee_65, Padpat_68, Twitch_65, Emerson_67, Blizzard_65, Atiba_66, CaseJules_67, Adephagia_65, Llorens_65, Hyperbowlee_65, Asayake_65, Homura_65, Pokerus_65, Spock_65, Rosmarinus_65, Megsy_68, Lunahalos_65, YoureAdopted_65, Boiiii_65, Piatt_65, Joy99_65, CrimD_67, Tiri_66, Peel_65, Belladonna_65, Adonis_65, Beezoo_67, Padfoot_65, Topper_65, Jayhawk_67, Dalmuri_65, ShiaSurprise_66, CREW_65, Capricorn_65, LindNT_65, TreyKay_67, Jeckyll_65, Prithvi_67, AlishaPH_65, Geraldini_68, BEEST_65
- Track 9 : Nutello_54, SgtBeansprout_55, Nikao_57, Biglebops_54, LilPharaoh_55, Torres_56, Mdavu_55, Enkosi_56, Amelie_54
- Track 10 : Scarlett_70, KiSi_70
- Track 11 : TiniBug_66, Urkel_66, DrHayes_66, Bella96_66, SamuelLPlaqson_66
- Track 12 : Chris_68
- Track 13 : Ramen_66, Zabiza_60, ActinUp_65, HedwigODU_65
- Track 14 : Nibb_68
- Track 15 : Shaobing_68, Peanam_68
- Track 16 : Efra2_71, Yunkel11_70, Guanica15_70
- Track 17 : MarkPhew_68
- Track 18 : QuincyRose_63, Ganymede_65
- Track 19 : LastHope_70
- Track 20 : Anaya_68
- Track 21 : Sulley_65, Angelica_65
- Track 22 : BaghaKamala_65, CheetoDust_65
- Track 23 : TaiwanKao_68
- Track 24 : Murucutumbu_67
- Track 25 : Oscar_69, LeMond_69
- Track 26 : TingHuaYa_69

- Track 27 : Validus_70
- Track 28 : Curiosium_69
- Track 29 : Marcoliusprime_68, DismalFunk_68, TM4_66, Findley_68, DismalStressor_68, Strobilo_69
- Track 30 : Mufasa_68, BoostSeason_68
- Track 31 : Milly_68
- Track 32 : ZoeJ_67
- Track 33 : Keshu_69
- Track 34 : Pixie_66, TBond007_63
- Track 35 : ShedlockHolmes_68
- Track 36 : Hurricane_67
- Track 37 : MacnCheese_69
- Track 38 : TribbleTrouble_67
- Track 39 : Pharb_66
- Track 40 : Larva_60
- Track 41 : SoSeph_60, Heftyboy_60, Waterfoul_61
- Track 42 : OkiRoe_60, Gengar_59, Miryou_63
- Track 43 : Dadosky_61, Edugator_58, AlleyCat_61, Psycho_59
- Track 44 : Agent47_59, Collard_57, Kratio_57, InvictusManeo_57
- Track 45 : Feyre_62
- Track 46 : Guillsminger_60, Paola_59, Leston_59
- Track 47 : Omnicron_63
- Track 48 : Rando14_61
- Track 49 : Thyatira_62
- Track 50 : Yuna_70
- Track 51 : Amgine_64
- Track 52 : Tierra_69, Cain_69, Phrank_69, Bryler_69
- Track 53 : Fefferhead_63, Ellie_61
- Track 54 : PhelpsODU_67, Unicorn_67
- Track 55 : Marshawn_65
- Track 56 : Shadow1_70, Sunflower1121_71
- Track 57 : Hammy_65, Amohnition_65, DarthP_65
- Track 58 : Ekdilam_62
- Track 59 : Krueger_70, Syra333_69
- Track 60 : SirPhilip_65
- Track 61 : Ximenita_71
- Track 62 : TClif_67
- Track 63 : TinyDot_45
- Track 64 : TPA4_50

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

The start number called the most often in the published annotations is 20, it was called in 165 of the 171 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• ActinUp_65, Adephegia_65, Adonis_65, Agent47_59, Ageofdapage_69, AlishaPH_65, AlleyCat_61, Amelie_54, Amgine_64, Amohnition_65, Anaya_68, Angelica_65, Apocalypse_68, Asayake_65, Atiba_66, BEEST_65, BGlluviae_65, BaghaKamala_65, BarrelRoll_66, Beezoo_67, Bella96_66, Belladonna_65,

Biglebops_54, Blizzard_65, Boiiii_65, BoostSeason_68, Bryler_69, CREW_65, Cain_69, Capricorn_65, CaseJules_67, CheetoDust_65, Chris_68, Collard_57, CrimD_67, Curiosium_69, Dadosky_61, Dalmuri_65, DarthP_65, Dartin_68, Deby_66, Devera_73, DismalFunk_68, DismalStressor_68, Dole_71, DrHayes_66, Durfee_65, Edugator_58, Efra2_71, Ekdilam_62, Ellie_61, Emerson_67, Enkosi_56, Fefferhead_63, Feyre_62, Findley_68, Ganymede_65, Gengar_59, Geraldini_68, Guanica15_70, Guillsminger_60, Hammy_65, HedwigODU_65, Heftyboy_60, Homura_65, Hurricane_67, Hyperbowlee_65, Illumine_71, Inky_65, InvictusManeo_57, JAWS_66, Jarvi_65, Jayhawk_67, Jeckyll_65, Joy99_65, Keshu_69, KiSi_70, Kratio_57, Krueger_70, Larva_60, LastHope_70, LaterM_66, LeMond_69, Leston_59, LilPharaoh_55, LindNT_65, Llorens_65, Lunahalos_65, MacnCheese_69, Marcoliusprime_68, MarkPhew_68, Marshawn_65, McMater_68, Mdavu_55, MeaningOfLife_66, Megsy_68, Milly_68, Miryou_63, Mufasa_68, Murucutumbu_67, Mynx_67, Nergal_58, Nibb_68, Nikao_57, Niklas_68, Nutello_54, OkiRoe_60, Oscar_69, Padfoot_65, Padpat_68, Paola_59, Peanam_68, Peel_65, Pharb_66, PhelpsODU_67, Phrank_69, Piatt_65, Pixie_66, Pokerus_65, Prithvi_67, Psycho_59, QuincyRose_63, Ramen_66, Rando14_61, Rapunzel97_67, Richo_68, Rosmarinus_65, SamuelLPlaqson_66, Scarlett_70, SgtBeansprout_55, Shadow1_70, Shaobing_68, ShedlockHolmes_68, ShiaSurprise_66, SirPhilip_65, Slimphazie_66, SoSeph_60, Spock_65, Stinson_67, Strobilo_69, Sulley_65, Sunflower1121_71, Syra333_69, TBond007_63, TClif_67, TM4_66, Tachez_65, TaiwanKao_68, Thyatira_62, Tierra_69, TingHuaYa_69, TiniBug_66, Tiri_66, Topper_65, Torres_56, TreyKay_67, TribbleTrouble_67, TruffulaTree_66, Twitch_65, Unicorn_67, Urkel_66, Validus_70, Veliki_67, Waterfoul_61, Ximenita_71, YoureAdopted_65, Yuna_70, Yunkel11_70, Zabiza_60, Zavala_68, ZoeJ_67,

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

- Omnicron_63,

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

- Jflix2_71, Madraxi_75, MalagasyRose_66, Shagrat_82, TPA4_50, TinyDot_45,

Summary by start number:

Start 15:

- Found in 22 of 178 (12.4%) of genes in pham
- Manual Annotations of this start: 1 of 171
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Omnicron_63 (K5),

Start 16:

- Found in 1 of 178 (0.6%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TPA4_50 (singleton),

Start 17:

- Found in 1 of 178 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 171
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MalagasyRose_66 (AG),

Start 18:

- Found in 1 of 178 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 171
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TinyDot_45 (singleton),

Start 19:

- Found in 2 of 178 (1.1%) of genes in pham
- Manual Annotations of this start: 2 of 171
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jflix2_71 (CF), Madraxi_75 (CF),

Start 20:

- Found in 172 of 178 (96.6%) of genes in pham
- Manual Annotations of this start: 165 of 171
- Called 99.4% of time when present
- Phage (with cluster) where this start called: ActinUp_65 (K1), Adephagia_65 (K1), Adonis_65 (K1), Agent47_59 (K5), Ageofdapage_69 (K1), AlishaPH_65 (K1), AlleyCat_61 (K5), Amelie_54 (K1), Amgine_64 (K6), Amohnition_65 (K6), Anaya_68 (K1), Angelica_65 (K1), Apocalypse_68 (K1), Asayake_65 (K1), Atiba_66 (K1), BEEST_65 (K1), BGlluviae_65 (K1), BaghaKamala_65 (K1), BarrelRoll_66 (K1), Beezoo_67 (K1), Bella96_66 (K1), Belladonna_65 (K1), Binglebops_54 (K1), Blizzard_65 (K1), Boiiii_65 (K1), BoostSeason_68 (K2), Bryler_69 (K6), CREW_65 (K1), Cain_69 (K6), Capricorn_65 (K1), CaseJules_67 (K1), CheetoDust_65 (K1), Chris_68 (K1), Collard_57 (K5), CrimD_67 (K1), Curiosium_69 (K1), Dadosky_61 (K5), Dalmuri_65 (K1), DarthP_65 (K6), Dartin_68 (K1), Deby_66 (K1), Devera_73 (K1), DismalFunk_68 (K2), DismalStressor_68 (K2), Dole_71 (K1), DrHayes_66 (K1), Durfee_65 (K1), Edugator_58 (K5), Efra2_71 (K1), Ekdilam_62 (K6), Ellie_61 (K6), Emerson_67 (K1), Enkosi_56 (K1), Fefferhead_63 (K6), Feyre_62 (K5), Findley_68 (K2), Ganymede_65 (K1), Gengar_59 (K5), Geraldini_68 (K1), Guanica15_70 (K1), Guillsminger_60 (K5), Hammy_65 (K6), HedwigODU_65 (K1), Heftyboy_60 (K5), Homura_65 (K1), Hurricane_67 (K3), Hyperbowlee_65 (K1), Illumine_71 (K1), Inky_65 (K1), InvictusManeo_57 (K5), JAWS_66 (K1), Jarvi_65 (K1), Jayhawk_67 (K1), Jeckyll_65 (K1), Joy99_65 (K1), Keshu_69 (K3), KiSi_70 (K1), Kratio_57 (K5), Krueger_70 (K6), Larva_60 (K5), LastHope_70 (K1), LaterM_66 (K1), LeMond_69 (K1), Leston_59 (K5), LilPharaoh_55 (K1), LindNT_65 (K1), Llorens_65 (K1), Lunahalos_65 (K1), MacnCheese_69 (K3), Marcoliusprime_68 (K2), MarkPheW_68 (K1), Marshawn_65 (K6), McMater_68 (K1), Mdavu_55 (K1), MeaningOfLife_66 (K1), Megsy_68 (K1), Milly_68 (K2), Miryou_63 (K5), Mufasa_68 (K2), Murucutumbu_67 (K1), Mynx_67 (K1), Nergal_58 (AG), Nibb_68 (K1), Nikao_57 (K1), Niklas_68 (K1), Nutello_54 (K1), OkiRoe_60 (K5), Oscar_69 (K1), Padfoot_65 (K1), Padpat_68 (K1), Paola_59 (K5), Peanam_68 (K1), Peel_65 (K1), Pharb_66 (K3), PhelpsODU_67 (K6), Phrank_69 (K6), Piatt_65 (K1), Pixie_66 (K3), Pokerus_65 (K1), Prithvi_67 (K1), Psycho_59 (K5), QuincyRose_63 (K1), Ramen_66 (K1), Rando14_61 (K5), Rapunzel97_67 (K1), Richo_68 (K1), Rosmarinus_65 (K1), SamuelLPlaqson_66 (K1), Scarlett_70 (K1), SgtBeansprout_55 (K1), Shadow1_70 (K6), Shaobing_68 (K1), ShedlockHolmes_68 (K3), ShiaSurprise_66 (K1), SirPhilip_65 (K6), Slimphazie_66 (K1), SoSeph_60 (K5), Spock_65 (K1), Stinson_67 (K1), Strobilo_69 (K2), Sulley_65 (K1), Sunflower1121_71 (K6), Syra333_69 (K6), TBond007_63 (K3), TClif_67 (K6), TM4_66 (K2), Tachez_65 (K1), TaiwanKao_68 (K1), Thyatira_62 (K5), Tierra_69 (K6), TingHuaYa_69 (K1), TiniBug_66 (K1), Tiri_66 (K1), Topper_65 (K1), Torres_56 (K1), TreyKay_67 (K1), TribleTrouble_67 (K3), TruffulaTree_66 (K1), Twitch_65 (K1), Unicorn_67 (K6), Urkel_66 (K1), Validus_70 (K1), Veliki_67 (K1), Waterfoul_61 (K5), Ximenita_71 (K6), YoureAdopted_65 (K1), Yuna_70 (K6),

Yunkel11_70 (K1), Zabiza_60 (K1), Zavala_68 (K1), ZoeJ_67 (K2),

Start 21:

- Found in 1 of 178 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 171
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shagrat_82 (CF),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, AG, CF, K3, K2, K1, K6, K5,

Info for manual annotations of cluster AG:

- Start number 17 was manually annotated 1 time for cluster AG.
- Start number 20 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster CF:

- Start number 19 was manually annotated 2 times for cluster CF.
- Start number 21 was manually annotated 1 time for cluster CF.

Info for manual annotations of cluster K1:

- Start number 20 was manually annotated 103 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 20 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 20 was manually annotated 8 times for cluster K3.

Info for manual annotations of cluster K5:

- Start number 15 was manually annotated 1 time for cluster K5.
- Start number 20 was manually annotated 21 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 20 was manually annotated 22 times for cluster K6.

Gene Information:

Gene: ActinUp_65 Start: 42856, Stop: 43365, Start Num: 20

Candidate Starts for ActinUp_65:

(Start: 20 @42856 has 165 MA's), (27, 42931), (29, 42940), (31, 42970), (34, 43024), (42, 43102), (43, 43114), (58, 43273), (74, 43315),

Gene: Adephagia_65 Start: 42893, Stop: 43402, Start Num: 20

Candidate Starts for Adephagia_65:

(Start: 20 @42893 has 165 MA's), (27, 42968), (31, 43007), (34, 43061), (42, 43139), (43, 43151), (74, 43352),

Gene: Adonis_65 Start: 43128, Stop: 43637, Start Num: 20

Candidate Starts for Adonis_65:

(Start: 20 @43128 has 165 MA's), (27, 43203), (31, 43242), (34, 43296), (42, 43374), (43, 43386), (74, 43587),

Gene: Agent47_59 Start: 40081, Stop: 40656, Start Num: 20

Candidate Starts for Agent47_59:

(Start: 15 @40057 has 1 MA's), (Start: 20 @40081 has 165 MA's), (30, 40189), (35, 40261), (39, 40285), (42, 40333), (43, 40345), (45, 40369), (50, 40417), (54, 40462), (69, 40552), (78, 40645),

Gene: Ageofdapage_69 Start: 44287, Stop: 44796, Start Num: 20

Candidate Starts for Ageofdapage_69:

(Start: 20 @44287 has 165 MA's), (27, 44362), (29, 44371), (31, 44401), (34, 44455), (42, 44533), (43, 44545), (74, 44746),

Gene: AlishaPH_65 Start: 43154, Stop: 43663, Start Num: 20

Candidate Starts for AlishaPH_65:

(Start: 20 @43154 has 165 MA's), (27, 43229), (31, 43268), (34, 43322), (42, 43400), (43, 43412), (74, 43613),

Gene: AlleyCat_61 Start: 40379, Stop: 40972, Start Num: 20

Candidate Starts for AlleyCat_61:

(Start: 15 @40355 has 1 MA's), (Start: 20 @40379 has 165 MA's), (30, 40487), (35, 40559), (39, 40583), (42, 40631), (43, 40643), (44, 40655), (50, 40715), (54, 40760), (58, 40814), (59, 40817), (63, 40844), (69, 40859), (78, 40958),

Gene: Amelie_54 Start: 40324, Stop: 40845, Start Num: 20

Candidate Starts for Amelie_54:

(Start: 20 @40324 has 165 MA's), (27, 40399), (29, 40408), (34, 40492), (43, 40582), (50, 40654), (57, 40717), (59, 40744), (73, 40783),

Gene: Amgine_64 Start: 43961, Stop: 44473, Start Num: 20

Candidate Starts for Amgine_64:

(10, 43832), (Start: 20 @43961 has 165 MA's), (27, 44036), (29, 44045), (34, 44129), (35, 44135), (38, 44147), (43, 44219), (44, 44231), (50, 44291), (74, 44426), (75, 44438),

Gene: Amohnition_65 Start: 43500, Stop: 44012, Start Num: 20

Candidate Starts for Amohnition_65:

(7, 43323), (8, 43332), (Start: 20 @43500 has 165 MA's), (27, 43575), (29, 43584), (34, 43668), (38, 43686), (43, 43758), (44, 43770), (50, 43830), (74, 43962), (78, 44001),

Gene: Anaya_68 Start: 43839, Stop: 44357, Start Num: 20

Candidate Starts for Anaya_68:

(Start: 20 @43839 has 165 MA's), (23, 43878), (27, 43914), (29, 43923), (34, 44007), (38, 44025), (42, 44085), (43, 44097), (44, 44109), (50, 44169), (74, 44301),

Gene: Angelica_65 Start: 43046, Stop: 43555, Start Num: 20

Candidate Starts for Angelica_65:

(Start: 20 @43046 has 165 MA's), (27, 43121), (31, 43160), (34, 43214), (43, 43304), (74, 43505),

Gene: Apocalypse_68 Start: 43810, Stop: 44319, Start Num: 20

Candidate Starts for Apocalypse_68:

(Start: 20 @43810 has 165 MA's), (27, 43885), (29, 43894), (31, 43924), (34, 43978), (42, 44056), (43, 44068), (74, 44269),

Gene: Asayake_65 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for Asayake_65:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: Atiba_66 Start: 42856, Stop: 43365, Start Num: 20

Candidate Starts for Atiba_66:

(Start: 20 @42856 has 165 MA's), (27, 42931), (31, 42970), (34, 43024), (42, 43102), (43, 43114), (74, 43315),

Gene: BEEST_65 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for BEEST_65:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: BGlluviae_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for BGlluviae_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: BaghaKamala_65 Start: 42675, Stop: 43184, Start Num: 20

Candidate Starts for BaghaKamala_65:

(Start: 20 @42675 has 165 MA's), (27, 42750), (29, 42759), (31, 42789), (34, 42843), (38, 42861), (42, 42921), (43, 42933), (60, 43098), (74, 43134),

Gene: BarrelRoll_66 Start: 43294, Stop: 43803, Start Num: 20

Candidate Starts for BarrelRoll_66:

(Start: 20 @43294 has 165 MA's), (27, 43369), (29, 43378), (31, 43408), (34, 43462), (42, 43540), (43, 43552), (74, 43753),

Gene: Beezoo_67 Start: 43806, Stop: 44315, Start Num: 20

Candidate Starts for Beezoo_67:

(Start: 20 @43806 has 165 MA's), (27, 43881), (31, 43920), (34, 43974), (42, 44052), (43, 44064), (74, 44265),

Gene: Bella96_66 Start: 43591, Stop: 44106, Start Num: 20

Candidate Starts for Bella96_66:

(Start: 20 @43591 has 165 MA's), (27, 43666), (34, 43759), (38, 43777), (42, 43837), (43, 43849), (74, 44050),

Gene: Belladonna_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Belladonna_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: Biglebops_54 Start: 40324, Stop: 40845, Start Num: 20

Candidate Starts for Biglebops_54:

(Start: 20 @40324 has 165 MA's), (27, 40399), (29, 40408), (34, 40492), (43, 40582), (50, 40654), (57, 40717), (59, 40744), (73, 40783),

Gene: Blizzard_65 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for Blizzard_65:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: Boiiii_65 Start: 43210, Stop: 43719, Start Num: 20

Candidate Starts for Boiiii_65:

(Start: 20 @43210 has 165 MA's), (27, 43285), (31, 43324), (34, 43378), (42, 43456), (43, 43468), (74, 43669),

Gene: BoostSeason_68 Start: 45062, Stop: 45580, Start Num: 20

Candidate Starts for BoostSeason_68:

(9, 44912), (Start: 20 @45062 has 165 MA's), (32, 45185), (34, 45227), (37, 45239), (38, 45245), (43, 45317), (44, 45329), (45, 45341), (50, 45389), (74, 45530), (78, 45569),

Gene: Bryler_69 Start: 42843, Stop: 43361, Start Num: 20

Candidate Starts for Bryler_69:

(6, 42663), (12, 42729), (Start: 20 @42843 has 165 MA's), (27, 42918), (32, 42966), (34, 43011), (38, 43029), (43, 43101), (50, 43173), (74, 43311), (77, 43344), (78, 43350),

Gene: CREW_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for CREW_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: Cain_69 Start: 42831, Stop: 43349, Start Num: 20

Candidate Starts for Cain_69:

(6, 42651), (12, 42717), (Start: 20 @42831 has 165 MA's), (27, 42906), (32, 42954), (34, 42999), (38, 43017), (43, 43089), (50, 43161), (74, 43299), (77, 43332), (78, 43338),

Gene: Capricorn_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Capricorn_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: CaseJules_67 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for CaseJules_67:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: CheetoDust_65 Start: 42722, Stop: 43231, Start Num: 20

Candidate Starts for CheetoDust_65:

(Start: 20 @42722 has 165 MA's), (27, 42797), (29, 42806), (31, 42836), (34, 42890), (38, 42908), (42, 42968), (43, 42980), (60, 43145), (74, 43181),

Gene: Chris_68 Start: 44067, Stop: 44573, Start Num: 20

Candidate Starts for Chris_68:

(Start: 20 @44067 has 165 MA's), (27, 44142), (29, 44151), (34, 44235), (40, 44298), (43, 44325), (44, 44337), (74, 44526),

Gene: Collard_57 Start: 40042, Stop: 40617, Start Num: 20

Candidate Starts for Collard_57:

(Start: 15 @40018 has 1 MA's), (Start: 20 @40042 has 165 MA's), (30, 40150), (35, 40222), (39, 40246), (42, 40294), (43, 40306), (45, 40330), (50, 40378), (54, 40423), (69, 40513), (78, 40606),

Gene: CrimD_67 Start: 43833, Stop: 44342, Start Num: 20

Candidate Starts for CrimD_67:

(Start: 20 @43833 has 165 MA's), (27, 43908), (31, 43947), (34, 44001), (42, 44079), (43, 44091), (74, 44292),

Gene: Curiosium_69 Start: 42524, Stop: 43036, Start Num: 20

Candidate Starts for Curiosium_69:

(Start: 20 @42524 has 165 MA's), (27, 42599), (34, 42692), (38, 42710), (41, 42764), (43, 42782), (44, 42794), (48, 42836), (74, 42983),

Gene: Dadosky_61 Start: 40381, Stop: 40974, Start Num: 20

Candidate Starts for Dadosky_61:

(Start: 15 @40357 has 1 MA's), (Start: 20 @40381 has 165 MA's), (30, 40489), (35, 40561), (39, 40585), (42, 40633), (43, 40645), (44, 40657), (50, 40717), (54, 40762), (58, 40816), (59, 40819), (63, 40846), (69, 40861), (78, 40960),

Gene: Dalmuri_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Dalmuri_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: DarthP_65 Start: 43354, Stop: 43866, Start Num: 20

Candidate Starts for DarthP_65:

(7, 43177), (8, 43186), (Start: 20 @43354 has 165 MA's), (27, 43429), (29, 43438), (34, 43522), (38, 43540), (43, 43612), (44, 43624), (50, 43684), (74, 43816), (78, 43855),

Gene: Dartin_68 Start: 43499, Stop: 44026, Start Num: 20

Candidate Starts for Dartin_68:

(Start: 20 @43499 has 165 MA's), (27, 43574), (34, 43667), (38, 43685), (43, 43757), (44, 43769), (48, 43811), (50, 43829), (73, 43961),

Gene: Deby_66 Start: 43494, Stop: 44003, Start Num: 20

Candidate Starts for Deby_66:

(Start: 20 @43494 has 165 MA's), (27, 43569), (29, 43578), (31, 43608), (34, 43662), (42, 43740), (43, 43752), (74, 43953),

Gene: Devera_73 Start: 44850, Stop: 45359, Start Num: 20

Candidate Starts for Devera_73:

(Start: 20 @44850 has 165 MA's), (27, 44925), (29, 44934), (31, 44964), (34, 45018), (42, 45096), (43, 45108), (74, 45309),

Gene: DismalFunk_68 Start: 45487, Stop: 46005, Start Num: 20

Candidate Starts for DismalFunk_68:

(9, 45337), (14, 45460), (Start: 20 @45487 has 165 MA's), (32, 45610), (34, 45652), (37, 45664), (38, 45670), (43, 45742), (44, 45754), (45, 45766), (50, 45814), (74, 45955), (78, 45994),

Gene: DismalStressor_68 Start: 45487, Stop: 46005, Start Num: 20

Candidate Starts for DismalStressor_68:

(9, 45337), (14, 45460), (Start: 20 @45487 has 165 MA's), (32, 45610), (34, 45652), (37, 45664), (38, 45670), (43, 45742), (44, 45754), (45, 45766), (50, 45814), (74, 45955), (78, 45994),

Gene: Dole_71 Start: 44853, Stop: 45362, Start Num: 20

Candidate Starts for Dole_71:

(Start: 20 @44853 has 165 MA's), (27, 44928), (29, 44937), (31, 44967), (34, 45021), (42, 45099), (43, 45111), (74, 45312),

Gene: DrHayes_66 Start: 43745, Stop: 44260, Start Num: 20

Candidate Starts for DrHayes_66:

(Start: 20 @43745 has 165 MA's), (27, 43820), (34, 43913), (38, 43931), (42, 43991), (43, 44003), (74, 44204),

Gene: Durfee_65 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for Durfee_65:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: Edugator_58 Start: 41802, Stop: 42395, Start Num: 20

Candidate Starts for Edugator_58:

(Start: 15 @41778 has 1 MA's), (Start: 20 @41802 has 165 MA's), (30, 41910), (35, 41982), (39, 42006), (42, 42054), (43, 42066), (44, 42078), (50, 42138), (54, 42183), (58, 42237), (59, 42240), (63, 42267), (69, 42282), (78, 42381),

Gene: Efra2_71 Start: 43581, Stop: 44105, Start Num: 20

Candidate Starts for Efra2_71:

(Start: 20 @43581 has 165 MA's), (27, 43656), (34, 43749), (38, 43767), (43, 43839), (44, 43851), (48, 43893), (74, 44049),

Gene: Ekdilam_62 Start: 43584, Stop: 44096, Start Num: 20

Candidate Starts for Ekdilam_62:

(Start: 20 @43584 has 165 MA's), (27, 43659), (29, 43668), (34, 43752), (35, 43758), (43, 43842), (44, 43854), (50, 43914), (74, 44046), (77, 44079), (78, 44085),

Gene: Ellie_61 Start: 42821, Stop: 43333, Start Num: 20

Candidate Starts for Ellie_61:

(Start: 20 @42821 has 165 MA's), (27, 42896), (29, 42905), (34, 42989), (35, 42995), (38, 43007), (43, 43079), (44, 43091), (50, 43151), (74, 43286), (75, 43298),

Gene: Emerson_67 Start: 43328, Stop: 43837, Start Num: 20

Candidate Starts for Emerson_67:

(Start: 20 @43328 has 165 MA's), (27, 43403), (31, 43442), (34, 43496), (42, 43574), (43, 43586), (74, 43787),

Gene: Enkosi_56 Start: 42937, Stop: 43458, Start Num: 20

Candidate Starts for Enkosi_56:

(Start: 20 @42937 has 165 MA's), (27, 43012), (29, 43021), (34, 43105), (43, 43195), (50, 43267), (57, 43330), (59, 43357), (73, 43396),

Gene: Fefferhead_63 Start: 42730, Stop: 43242, Start Num: 20

Candidate Starts for Fefferhead_63:

(Start: 20 @42730 has 165 MA's), (27, 42805), (29, 42814), (34, 42898), (35, 42904), (38, 42916), (43, 42988), (44, 43000), (50, 43060), (74, 43195), (75, 43207),

Gene: Feyre_62 Start: 43763, Stop: 44383, Start Num: 20

Candidate Starts for Feyre_62:

(Start: 15 @43739 has 1 MA's), (Start: 20 @43763 has 165 MA's), (34, 43937), (35, 43943), (42, 44015), (43, 44027), (44, 44039), (50, 44099), (54, 44144), (61, 44219), (62, 44222), (67, 44249), (68,

44264), (78, 44369),

Gene: Findley_68 Start: 45480, Stop: 45998, Start Num: 20

Candidate Starts for Findley_68:

(9, 45330), (14, 45453), (Start: 20 @45480 has 165 MA's), (32, 45603), (34, 45645), (37, 45657), (38, 45663), (43, 45735), (44, 45747), (45, 45759), (50, 45807), (74, 45948), (78, 45987),

Gene: Ganymede_65 Start: 43234, Stop: 43743, Start Num: 20

Candidate Starts for Ganymede_65:

(Start: 20 @43234 has 165 MA's), (27, 43309), (29, 43318), (31, 43348), (34, 43402), (42, 43480), (43, 43492), (74, 43693), (77, 43726),

Gene: Gengar_59 Start: 41780, Stop: 42370, Start Num: 20

Candidate Starts for Gengar_59:

(Start: 15 @41756 has 1 MA's), (Start: 20 @41780 has 165 MA's), (26, 41858), (34, 41954), (35, 41960), (41, 42026), (42, 42032), (43, 42044), (44, 42056), (45, 42068), (50, 42116), (54, 42161), (61, 42233), (62, 42236), (70, 42263), (72, 42278), (78, 42356),

Gene: Geraldini_68 Start: 43890, Stop: 44399, Start Num: 20

Candidate Starts for Geraldini_68:

(Start: 20 @43890 has 165 MA's), (27, 43965), (31, 44004), (34, 44058), (42, 44136), (43, 44148), (74, 44349),

Gene: Guanica15_70 Start: 43322, Stop: 43843, Start Num: 20

Candidate Starts for Guanica15_70:

(Start: 20 @43322 has 165 MA's), (27, 43397), (34, 43490), (38, 43508), (43, 43580), (44, 43592), (48, 43634), (74, 43790),

Gene: Guillsminger_60 Start: 41751, Stop: 42323, Start Num: 20

Candidate Starts for Guillsminger_60:

(Start: 15 @41727 has 1 MA's), (Start: 20 @41751 has 165 MA's), (26, 41829), (34, 41925), (35, 41931), (42, 42003), (43, 42015), (44, 42027), (45, 42039), (46, 42054), (50, 42087), (54, 42132), (66, 42210), (71, 42222), (78, 42309),

Gene: Hammy_65 Start: 43342, Stop: 43854, Start Num: 20

Candidate Starts for Hammy_65:

(7, 43165), (8, 43174), (Start: 20 @43342 has 165 MA's), (27, 43417), (29, 43426), (34, 43510), (38, 43528), (43, 43600), (44, 43612), (50, 43672), (74, 43804), (78, 43843),

Gene: HedwigODU_65 Start: 42856, Stop: 43365, Start Num: 20

Candidate Starts for HedwigODU_65:

(Start: 20 @42856 has 165 MA's), (27, 42931), (29, 42940), (31, 42970), (34, 43024), (42, 43102), (43, 43114), (58, 43273), (74, 43315),

Gene: Heftyboy_60 Start: 42125, Stop: 42691, Start Num: 20

Candidate Starts for Heftyboy_60:

(Start: 15 @42101 has 1 MA's), (Start: 20 @42125 has 165 MA's), (34, 42299), (35, 42305), (42, 42377), (43, 42389), (44, 42401), (45, 42413), (50, 42461), (54, 42506), (71, 42590), (78, 42677),

Gene: Homura_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Homura_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: Hurricane_67 Start: 43488, Stop: 44006, Start Num: 20

Candidate Starts for Hurricane_67:

(Start: 20 @43488 has 165 MA's), (34, 43656), (38, 43674), (43, 43746), (44, 43758), (50, 43818), (74, 43956), (77, 43989), (78, 43995),

Gene: Hyperbowlee_65 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for Hyperbowlee_65:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: Illumine_71 Start: 44852, Stop: 45361, Start Num: 20

Candidate Starts for Illumine_71:

(Start: 20 @44852 has 165 MA's), (27, 44927), (29, 44936), (31, 44966), (34, 45020), (42, 45098), (43, 45110), (74, 45311),

Gene: Inky_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Inky_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: InvictusManeo_57 Start: 40085, Stop: 40660, Start Num: 20

Candidate Starts for InvictusManeo_57:

(Start: 15 @40061 has 1 MA's), (Start: 20 @40085 has 165 MA's), (30, 40193), (35, 40265), (39, 40289), (42, 40337), (43, 40349), (45, 40373), (50, 40421), (54, 40466), (69, 40556), (78, 40649),

Gene: JAWS_66 Start: 43287, Stop: 43796, Start Num: 20

Candidate Starts for JAWS_66:

(Start: 20 @43287 has 165 MA's), (27, 43362), (29, 43371), (31, 43401), (34, 43455), (42, 43533), (43, 43545), (74, 43746),

Gene: Jarvi_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Jarvi_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: Jayhawk_67 Start: 43354, Stop: 43863, Start Num: 20

Candidate Starts for Jayhawk_67:

(Start: 20 @43354 has 165 MA's), (27, 43429), (31, 43468), (34, 43522), (42, 43600), (43, 43612), (74, 43813),

Gene: Jeckyll_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Jeckyll_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: Jflix2_71 Start: 44931, Stop: 45539, Start Num: 19

Candidate Starts for Jflix2_71:

(Start: 19 @44931 has 2 MA's), (22, 44961), (26, 45003), (28, 45009), (29, 45015), (34, 45105), (43, 45198), (50, 45270),

Gene: Joy99_65 Start: 42940, Stop: 43449, Start Num: 20

Candidate Starts for Joy99_65:

(Start: 20 @42940 has 165 MA's), (27, 43015), (31, 43054), (34, 43108), (42, 43186), (43, 43198), (74, 43399),

Gene: Keshu_69 Start: 43586, Stop: 44104, Start Num: 20

Candidate Starts for Keshu_69:

(Start: 20 @43586 has 165 MA's), (34, 43754), (43, 43844), (44, 43856), (50, 43916), (74, 44054), (77, 44087), (78, 44093),

Gene: KiSi_70 Start: 44046, Stop: 44552, Start Num: 20

Candidate Starts for KiSi_70:

(Start: 20 @44046 has 165 MA's), (26, 44118), (27, 44121), (29, 44130), (34, 44214), (40, 44277), (42, 44292), (43, 44304), (44, 44316), (45, 44328), (74, 44505),

Gene: Kratio_57 Start: 39821, Stop: 40396, Start Num: 20

Candidate Starts for Kratio_57:

(Start: 15 @39797 has 1 MA's), (Start: 20 @39821 has 165 MA's), (30, 39929), (35, 40001), (39, 40025), (42, 40073), (43, 40085), (45, 40109), (50, 40157), (54, 40202), (69, 40292), (78, 40385),

Gene: Krueger_70 Start: 43119, Stop: 43637, Start Num: 20

Candidate Starts for Krueger_70:

(6, 42939), (12, 43005), (Start: 20 @43119 has 165 MA's), (27, 43194), (32, 43242), (34, 43287), (38, 43305), (42, 43365), (43, 43377), (44, 43389), (50, 43449), (74, 43587), (77, 43620), (78, 43626),

Gene: Larva_60 Start: 41253, Stop: 41846, Start Num: 20

Candidate Starts for Larva_60:

(Start: 15 @41229 has 1 MA's), (Start: 20 @41253 has 165 MA's), (30, 41361), (35, 41433), (42, 41505), (43, 41517), (44, 41529), (50, 41589), (54, 41634), (58, 41688), (59, 41691), (63, 41718), (69, 41733), (78, 41832),

Gene: LastHope_70 Start: 42442, Stop: 42954, Start Num: 20

Candidate Starts for LastHope_70:

(Start: 20 @42442 has 165 MA's), (27, 42517), (34, 42610), (38, 42628), (43, 42700), (48, 42754), (74, 42901),

Gene: LaterM_66 Start: 43705, Stop: 44214, Start Num: 20

Candidate Starts for LaterM_66:

(Start: 20 @43705 has 165 MA's), (27, 43780), (29, 43789), (31, 43819), (34, 43873), (42, 43951), (43, 43963), (74, 44164),

Gene: LeMond_69 Start: 43680, Stop: 44186, Start Num: 20

Candidate Starts for LeMond_69:

(Start: 20 @43680 has 165 MA's), (26, 43752), (27, 43755), (29, 43764), (34, 43848), (40, 43911), (43, 43938), (44, 43950), (45, 43962), (74, 44139),

Gene: Leston_59 Start: 41880, Stop: 42452, Start Num: 20

Candidate Starts for Leston_59:

(Start: 15 @41856 has 1 MA's), (Start: 20 @41880 has 165 MA's), (26, 41958), (34, 42054), (35, 42060), (42, 42132), (43, 42144), (44, 42156), (45, 42168), (46, 42183), (50, 42216), (54, 42261), (66, 42339), (71, 42351), (78, 42438),

Gene: LilPharaoh_55 Start: 40052, Stop: 40573, Start Num: 20

Candidate Starts for LilPharaoh_55:

(Start: 20 @40052 has 165 MA's), (27, 40127), (29, 40136), (34, 40220), (43, 40310), (50, 40382), (57, 40445), (59, 40472), (73, 40511),

Gene: LindNT_65 Start: 43499, Stop: 44008, Start Num: 20

Candidate Starts for LindNT_65:

(Start: 20 @43499 has 165 MA's), (27, 43574), (31, 43613), (34, 43667), (42, 43745), (43, 43757), (74, 43958),

Gene: Llorens_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Llorens_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: Lunahalos_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Lunahalos_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: MacnCheese_69 Start: 44105, Stop: 44629, Start Num: 20

Candidate Starts for MacnCheese_69:

(Start: 20 @44105 has 165 MA's), (29, 44189), (32, 44228), (34, 44273), (38, 44291), (43, 44363), (44, 44375), (50, 44435), (74, 44576), (77, 44609), (78, 44615),

Gene: Madraxi_75 Start: 47623, Stop: 48270, Start Num: 19

Candidate Starts for Madraxi_75:

(Start: 19 @47623 has 2 MA's), (22, 47653), (34, 47797), (43, 47890), (50, 47962),

Gene: MalagasyRose_66 Start: 42483, Stop: 43022, Start Num: 17

Candidate Starts for MalagasyRose_66:

(Start: 17 @42483 has 1 MA's), (27, 42558), (32, 42606), (37, 42660), (38, 42666), (44, 42750), (48, 42792), (50, 42810), (74, 42966), (76, 42981), (77, 42999),

Gene: Marcoliusprime_68 Start: 45487, Stop: 46005, Start Num: 20

Candidate Starts for Marcoliusprime_68:

(9, 45337), (14, 45460), (Start: 20 @45487 has 165 MA's), (32, 45610), (34, 45652), (37, 45664), (38, 45670), (43, 45742), (44, 45754), (45, 45766), (50, 45814), (74, 45955), (78, 45994),

Gene: MarkPhew_68 Start: 43181, Stop: 43687, Start Num: 20

Candidate Starts for MarkPhew_68:

(Start: 20 @43181 has 165 MA's), (27, 43256), (29, 43265), (34, 43349), (40, 43412), (41, 43421), (43, 43439), (44, 43451), (49, 43505), (74, 43640),

Gene: Marshawn_65 Start: 43539, Stop: 44048, Start Num: 20

Candidate Starts for Marshawn_65:

(Start: 20 @43539 has 165 MA's), (27, 43614), (38, 43725), (43, 43797), (44, 43809), (50, 43869), (74, 43998), (77, 44031), (78, 44037), (79, 44040),

Gene: McMater_68 Start: 43499, Stop: 44026, Start Num: 20

Candidate Starts for McMater_68:

(Start: 20 @43499 has 165 MA's), (27, 43574), (34, 43667), (38, 43685), (43, 43757), (44, 43769), (48, 43811), (50, 43829), (73, 43961),

Gene: Mdavu_55 Start: 40313, Stop: 40834, Start Num: 20

Candidate Starts for Mdavu_55:

(Start: 20 @40313 has 165 MA's), (27, 40388), (29, 40397), (34, 40481), (43, 40571), (50, 40643), (57, 40706), (59, 40733), (73, 40772),

Gene: MeaningOfLife_66 Start: 43763, Stop: 44272, Start Num: 20

Candidate Starts for MeaningOfLife_66:

(Start: 20 @43763 has 165 MA's), (27, 43838), (29, 43847), (31, 43877), (34, 43931), (42, 44009), (43, 44021), (74, 44222),

Gene: Megsy_68 Start: 43420, Stop: 43929, Start Num: 20

Candidate Starts for Megsy_68:

(Start: 20 @43420 has 165 MA's), (27, 43495), (31, 43534), (34, 43588), (42, 43666), (43, 43678), (74, 43879),

Gene: Milly_68 Start: 45460, Stop: 45978, Start Num: 20

Candidate Starts for Milly_68:

(9, 45310), (14, 45433), (Start: 20 @45460 has 165 MA's), (32, 45583), (34, 45625), (37, 45637), (38, 45643), (43, 45715), (44, 45727), (45, 45739), (50, 45787), (56, 45841), (74, 45928), (78, 45967),

Gene: Miryou_63 Start: 44477, Stop: 45067, Start Num: 20

Candidate Starts for Miryou_63:

(Start: 15 @44453 has 1 MA's), (Start: 20 @44477 has 165 MA's), (26, 44555), (34, 44651), (35, 44657), (41, 44723), (42, 44729), (43, 44741), (44, 44753), (45, 44765), (50, 44813), (54, 44858), (61, 44930), (62, 44933), (70, 44960), (72, 44975), (78, 45053),

Gene: Mufasa_68 Start: 45047, Stop: 45565, Start Num: 20

Candidate Starts for Mufasa_68:

(9, 44897), (Start: 20 @45047 has 165 MA's), (32, 45170), (34, 45212), (37, 45224), (38, 45230), (43, 45302), (44, 45314), (45, 45326), (50, 45374), (74, 45515), (78, 45554),

Gene: Murucutumbu_67 Start: 44280, Stop: 44789, Start Num: 20

Candidate Starts for Murucutumbu_67:

(Start: 20 @44280 has 165 MA's), (27, 44355), (29, 44364), (31, 44394), (34, 44448), (42, 44526), (43, 44538), (53, 44646), (74, 44739),

Gene: Mynx_67 Start: 43623, Stop: 44132, Start Num: 20

Candidate Starts for Mynx_67:

(Start: 20 @43623 has 165 MA's), (27, 43698), (29, 43707), (31, 43737), (34, 43791), (42, 43869), (43, 43881), (74, 44082),

Gene: Nergal_58 Start: 39813, Stop: 40349, Start Num: 20

Candidate Starts for Nergal_58:

(Start: 20 @39813 has 165 MA's), (23, 39852), (32, 39936), (34, 39978), (43, 40068), (44, 40080), (48, 40122), (51, 40149), (74, 40299), (78, 40338),

Gene: Nibb_68 Start: 43393, Stop: 43899, Start Num: 20

Candidate Starts for Nibb_68:

(Start: 20 @43393 has 165 MA's), (27, 43468), (29, 43477), (34, 43561), (40, 43624), (41, 43633), (43, 43651), (44, 43663), (74, 43852),

Gene: Nikao_57 Start: 42937, Stop: 43458, Start Num: 20

Candidate Starts for Nikao_57:

(Start: 20 @42937 has 165 MA's), (27, 43012), (29, 43021), (34, 43105), (43, 43195), (50, 43267), (57, 43330), (59, 43357), (73, 43396),

Gene: Niklas_68 Start: 43560, Stop: 44087, Start Num: 20

Candidate Starts for Niklas_68:

(Start: 20 @43560 has 165 MA's), (27, 43635), (34, 43728), (38, 43746), (43, 43818), (44, 43830), (48, 43872), (50, 43890), (73, 44022),

Gene: Nutello_54 Start: 40324, Stop: 40845, Start Num: 20

Candidate Starts for Nutello_54:

(Start: 20 @40324 has 165 MA's), (27, 40399), (29, 40408), (34, 40492), (43, 40582), (50, 40654), (57, 40717), (59, 40744), (73, 40783),

Gene: OkiRoe_60 Start: 42149, Stop: 42739, Start Num: 20

Candidate Starts for OkiRoe_60:

(Start: 15 @42125 has 1 MA's), (Start: 20 @42149 has 165 MA's), (26, 42227), (34, 42323), (35, 42329), (41, 42395), (42, 42401), (43, 42413), (44, 42425), (45, 42437), (50, 42485), (54, 42530), (61, 42602), (62, 42605), (70, 42632), (72, 42647), (78, 42725),

Gene: Omnicron_63 Start: 42235, Stop: 42843, Start Num: 15

Candidate Starts for Omnicron_63:

(Start: 15 @42235 has 1 MA's), (Start: 20 @42259 has 165 MA's), (34, 42427), (35, 42433), (40, 42490), (43, 42517), (44, 42529), (45, 42541), (50, 42589), (58, 42685), (59, 42688), (78, 42829),

Gene: Oscar_69 Start: 43597, Stop: 44103, Start Num: 20

Candidate Starts for Oscar_69:

(Start: 20 @43597 has 165 MA's), (26, 43669), (27, 43672), (29, 43681), (34, 43765), (40, 43828), (43, 43855), (44, 43867), (45, 43879), (74, 44056),

Gene: Padfoot_65 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for Padfoot_65:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: Padpat_68 Start: 43328, Stop: 43837, Start Num: 20

Candidate Starts for Padpat_68:

(Start: 20 @43328 has 165 MA's), (27, 43403), (31, 43442), (34, 43496), (42, 43574), (43, 43586), (74, 43787),

Gene: Paola_59 Start: 41751, Stop: 42323, Start Num: 20

Candidate Starts for Paola_59:

(Start: 15 @41727 has 1 MA's), (Start: 20 @41751 has 165 MA's), (26, 41829), (34, 41925), (35, 41931), (42, 42003), (43, 42015), (44, 42027), (45, 42039), (46, 42054), (50, 42087), (54, 42132), (66, 42210), (71, 42222), (78, 42309),

Gene: Peanam_68 Start: 43517, Stop: 44044, Start Num: 20

Candidate Starts for Peanam_68:

(Start: 20 @43517 has 165 MA's), (27, 43592), (34, 43685), (38, 43703), (43, 43775), (44, 43787), (48, 43829), (50, 43847), (73, 43979),

Gene: Peel_65 Start: 43013, Stop: 43522, Start Num: 20

Candidate Starts for Peel_65:

(Start: 20 @43013 has 165 MA's), (27, 43088), (31, 43127), (34, 43181), (42, 43259), (43, 43271), (74, 43472),

Gene: Pharb_66 Start: 42835, Stop: 43353, Start Num: 20

Candidate Starts for Pharb_66:

(Start: 20 @42835 has 165 MA's), (34, 43003), (38, 43021), (43, 43093), (44, 43105), (50, 43165), (74, 43303), (77, 43336), (78, 43342),

Gene: PhelpsODU_67 Start: 42757, Stop: 43275, Start Num: 20

Candidate Starts for PhelpsODU_67:

(6, 42577), (12, 42643), (Start: 20 @42757 has 165 MA's), (27, 42832), (32, 42880), (34, 42925), (38, 42943), (43, 43015), (44, 43027), (50, 43087), (74, 43225), (77, 43258), (78, 43264),

Gene: Phrank_69 Start: 42821, Stop: 43339, Start Num: 20

Candidate Starts for Phrank_69:

(6, 42641), (12, 42707), (Start: 20 @42821 has 165 MA's), (27, 42896), (32, 42944), (34, 42989), (38, 43007), (43, 43079), (50, 43151), (74, 43289), (77, 43322), (78, 43328),

Gene: Piatt_65 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for Piatt_65:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: Pixie_66 Start: 43008, Stop: 43526, Start Num: 20

Candidate Starts for Pixie_66:

(Start: 20 @43008 has 165 MA's), (29, 43092), (34, 43176), (38, 43194), (40, 43239), (43, 43266), (44, 43278), (50, 43338), (74, 43476), (77, 43509), (78, 43515),

Gene: Pokerus_65 Start: 43353, Stop: 43862, Start Num: 20

Candidate Starts for Pokerus_65:

(Start: 20 @43353 has 165 MA's), (27, 43428), (31, 43467), (34, 43521), (42, 43599), (43, 43611), (74, 43812),

Gene: Prithvi_67 Start: 43499, Stop: 44008, Start Num: 20

Candidate Starts for Prithvi_67:

(Start: 20 @43499 has 165 MA's), (27, 43574), (31, 43613), (34, 43667), (42, 43745), (43, 43757), (74, 43958),

Gene: Psycho_59 Start: 40378, Stop: 40971, Start Num: 20

Candidate Starts for Psycho_59:

(Start: 15 @40354 has 1 MA's), (Start: 20 @40378 has 165 MA's), (30, 40486), (35, 40558), (39, 40582), (42, 40630), (43, 40642), (44, 40654), (50, 40714), (54, 40759), (58, 40813), (59, 40816), (63, 40843), (69, 40858), (78, 40957),

Gene: QuincyRose_63 Start: 43234, Stop: 43743, Start Num: 20

Candidate Starts for QuincyRose_63:

(Start: 20 @43234 has 165 MA's), (27, 43309), (29, 43318), (31, 43348), (34, 43402), (42, 43480), (43, 43492), (74, 43693), (77, 43726),

Gene: Ramen_66 Start: 42858, Stop: 43367, Start Num: 20

Candidate Starts for Ramen_66:

(Start: 20 @42858 has 165 MA's), (27, 42933), (29, 42942), (31, 42972), (34, 43026), (42, 43104), (43, 43116), (58, 43275), (74, 43317),

Gene: Rando14_61 Start: 39976, Stop: 40557, Start Num: 20

Candidate Starts for Rando14_61:

(Start: 15 @39952 has 1 MA's), (Start: 20 @39976 has 165 MA's), (34, 40144), (35, 40150), (40, 40207), (42, 40222), (43, 40234), (44, 40246), (45, 40258), (50, 40306), (58, 40402), (59, 40405), (73, 40492), (78, 40543),

Gene: Rapunzel97_67 Start: 43309, Stop: 43818, Start Num: 20

Candidate Starts for Rapunzel97_67:

(Start: 20 @43309 has 165 MA's), (27, 43384), (29, 43393), (31, 43423), (34, 43477), (42, 43555), (43, 43567), (74, 43768),

Gene: Richo_68 Start: 43499, Stop: 44026, Start Num: 20

Candidate Starts for Richo_68:

(Start: 20 @43499 has 165 MA's), (27, 43574), (34, 43667), (38, 43685), (43, 43757), (44, 43769), (48, 43811), (50, 43829), (73, 43961),

Gene: Rosmarinus_65 Start: 42999, Stop: 43508, Start Num: 20

Candidate Starts for Rosmarinus_65:

(Start: 20 @42999 has 165 MA's), (27, 43074), (31, 43113), (34, 43167), (42, 43245), (43, 43257), (74, 43458),

Gene: SamuelLPlaqson_66 Start: 43745, Stop: 44260, Start Num: 20

Candidate Starts for SamuelLPlaqson_66:

(Start: 20 @43745 has 165 MA's), (27, 43820), (34, 43913), (38, 43931), (42, 43991), (43, 44003), (74, 44204),

Gene: Scarlett_70 Start: 43927, Stop: 44433, Start Num: 20

Candidate Starts for Scarlett_70:

(Start: 20 @43927 has 165 MA's), (26, 43999), (27, 44002), (29, 44011), (34, 44095), (40, 44158), (42, 44173), (43, 44185), (44, 44197), (45, 44209), (74, 44386),

Gene: SgtBeansprout_55 Start: 40324, Stop: 40845, Start Num: 20

Candidate Starts for SgtBeansprout_55:

(Start: 20 @40324 has 165 MA's), (27, 40399), (29, 40408), (34, 40492), (43, 40582), (50, 40654), (57, 40717), (59, 40744), (73, 40783),

Gene: Shadow1_70 Start: 43271, Stop: 43789, Start Num: 20

Candidate Starts for Shadow1_70:

(Start: 20 @43271 has 165 MA's), (27, 43346), (32, 43394), (34, 43439), (38, 43457), (43, 43529), (44, 43541), (50, 43601), (74, 43739), (77, 43772), (78, 43778),

Gene: Shagrat_82 Start: 45931, Stop: 46494, Start Num: 21

Candidate Starts for Shagrat_82:

(Start: 21 @45931 has 1 MA's), (24, 45985), (34, 46093), (37, 46105), (44, 46195), (52, 46285), (56, 46309),

Gene: Shaobing_68 Start: 43535, Stop: 44062, Start Num: 20

Candidate Starts for Shaobing_68:

(Start: 20 @43535 has 165 MA's), (27, 43610), (34, 43703), (38, 43721), (43, 43793), (44, 43805), (48, 43847), (50, 43865), (73, 43997),

Gene: ShedlockHolmes_68 Start: 43528, Stop: 44040, Start Num: 20

Candidate Starts for ShedlockHolmes_68:

(Start: 20 @43528 has 165 MA's), (34, 43696), (38, 43714), (43, 43786), (44, 43798), (50, 43858), (74, 43990), (77, 44023), (78, 44029),

Gene: ShiaSurprise_66 Start: 43208, Stop: 43717, Start Num: 20

Candidate Starts for ShiaSurprise_66:

(Start: 20 @43208 has 165 MA's), (27, 43283), (31, 43322), (34, 43376), (42, 43454), (43, 43466), (74, 43667),

Gene: SirPhilip_65 Start: 43696, Stop: 44205, Start Num: 20

Candidate Starts for SirPhilip_65:

(Start: 20 @43696 has 165 MA's), (27, 43771), (34, 43864), (38, 43882), (43, 43954), (44, 43966), (51, 44035), (78, 44194),

Gene: Slimphazie_66 Start: 43309, Stop: 43818, Start Num: 20

Candidate Starts for Slimphazie_66:

(Start: 20 @43309 has 165 MA's), (27, 43384), (29, 43393), (31, 43423), (34, 43477), (42, 43555), (43, 43567), (74, 43768),

Gene: SoSeph_60 Start: 42125, Stop: 42691, Start Num: 20

Candidate Starts for SoSeph_60:

(Start: 15 @42101 has 1 MA's), (Start: 20 @42125 has 165 MA's), (34, 42299), (35, 42305), (42, 42377), (43, 42389), (44, 42401), (45, 42413), (50, 42461), (54, 42506), (71, 42590), (78, 42677),

Gene: Spock_65 Start: 43012, Stop: 43521, Start Num: 20

Candidate Starts for Spock_65:

(Start: 20 @43012 has 165 MA's), (27, 43087), (31, 43126), (34, 43180), (42, 43258), (43, 43270), (74, 43471),

Gene: Stinson_67 Start: 43637, Stop: 44149, Start Num: 20

Candidate Starts for Stinson_67:

(Start: 20 @43637 has 165 MA's), (27, 43712), (29, 43721), (31, 43751), (34, 43805), (42, 43883), (43, 43895), (74, 44096),

Gene: Strobilo_69 Start: 45462, Stop: 45980, Start Num: 20

Candidate Starts for Strobilo_69:

(9, 45312), (14, 45435), (Start: 20 @45462 has 165 MA's), (32, 45585), (34, 45627), (37, 45639), (38, 45645), (43, 45717), (44, 45729), (45, 45741), (50, 45789), (74, 45930), (78, 45969),

Gene: Sulley_65 Start: 43072, Stop: 43581, Start Num: 20

Candidate Starts for Sulley_65:

(Start: 20 @43072 has 165 MA's), (27, 43147), (31, 43186), (34, 43240), (43, 43330), (74, 43531),

Gene: Sunflower1121_71 Start: 43417, Stop: 43935, Start Num: 20

Candidate Starts for Sunflower1121_71:

(Start: 20 @43417 has 165 MA's), (27, 43492), (32, 43540), (34, 43585), (38, 43603), (43, 43675), (44, 43687), (50, 43747), (74, 43885), (77, 43918), (78, 43924),

Gene: Syra333_69 Start: 43131, Stop: 43649, Start Num: 20

Candidate Starts for Syra333_69:

(6, 42951), (12, 43017), (Start: 20 @43131 has 165 MA's), (27, 43206), (32, 43254), (34, 43299), (38, 43317), (42, 43377), (43, 43389), (44, 43401), (50, 43461), (74, 43599), (77, 43632), (78, 43638),

Gene: TBond007_63 Start: 43007, Stop: 43525, Start Num: 20

Candidate Starts for TBond007_63:

(Start: 20 @43007 has 165 MA's), (29, 43091), (34, 43175), (38, 43193), (40, 43238), (43, 43265), (44, 43277), (50, 43337), (74, 43475), (77, 43508), (78, 43514),

Gene: TClif_67 Start: 43102, Stop: 43614, Start Num: 20

Candidate Starts for TClif_67:

(Start: 20 @43102 has 165 MA's), (27, 43177), (29, 43186), (33, 43243), (34, 43270), (38, 43288), (43, 43360), (44, 43372), (50, 43432), (73, 43552), (74, 43564), (76, 43579), (77, 43597), (78, 43603),

Gene: TM4_66 Start: 40125, Stop: 40643, Start Num: 20

Candidate Starts for TM4_66:

(9, 39975), (14, 40098), (Start: 20 @40125 has 165 MA's), (32, 40248), (34, 40290), (37, 40302), (38, 40308), (43, 40380), (44, 40392), (45, 40404), (50, 40452), (74, 40593), (78, 40632),

Gene: TPA4_50 Start: 38139, Stop: 38771, Start Num: 16

Candidate Starts for TPA4_50:

(1, 37530), (2, 37686), (5, 37959), (13, 38043), (16, 38139), (37, 38325), (41, 38379), (42, 38385), (43, 38397), (45, 38421), (51, 38478), (53, 38508), (55, 38517), (65, 38622),

Gene: Tachez_65 Start: 42856, Stop: 43365, Start Num: 20

Candidate Starts for Tachez_65:

(Start: 20 @42856 has 165 MA's), (27, 42931), (31, 42970), (34, 43024), (42, 43102), (43, 43114), (74, 43315),

Gene: TaiwanKao_68 Start: 43561, Stop: 44070, Start Num: 20

Candidate Starts for TaiwanKao_68:

(Start: 20 @43561 has 165 MA's), (27, 43636), (31, 43675), (34, 43729), (42, 43807), (43, 43819), (47, 43867), (74, 44020),

Gene: Thyatira_62 Start: 44083, Stop: 44655, Start Num: 20

Candidate Starts for Thyatira_62:

(Start: 15 @44059 has 1 MA's), (Start: 20 @44083 has 165 MA's), (34, 44257), (35, 44263), (41, 44329), (42, 44335), (43, 44347), (44, 44359), (45, 44371), (50, 44419), (54, 44464), (64, 44542), (71, 44554), (78, 44641),

Gene: Tierra_69 Start: 43632, Stop: 44150, Start Num: 20

Candidate Starts for Tierra_69:

(6, 43452), (12, 43518), (Start: 20 @43632 has 165 MA's), (27, 43707), (32, 43755), (34, 43800), (38, 43818), (43, 43890), (50, 43962), (74, 44100), (77, 44133), (78, 44139),

Gene: TingHuaYa_69 Start: 42808, Stop: 43320, Start Num: 20

Candidate Starts for TingHuaYa_69:

(Start: 20 @42808 has 165 MA's), (27, 42883), (29, 42892), (34, 42976), (38, 42994), (43, 43066), (44, 43078), (48, 43120), (74, 43267),

Gene: TiniBug_66 Start: 43741, Stop: 44256, Start Num: 20

Candidate Starts for TiniBug_66:

(Start: 20 @43741 has 165 MA's), (27, 43816), (34, 43909), (38, 43927), (42, 43987), (43, 43999), (74, 44200),

Gene: TinyDot_45 Start: 30672, Stop: 31235, Start Num: 18

Candidate Starts for TinyDot_45:

(3, 30327), (4, 30393), (11, 30549), (Start: 18 @30672 has 1 MA's), (34, 30846), (48, 30993), (73, 31191),

Gene: Tiri_66 Start: 43145, Stop: 43654, Start Num: 20

Candidate Starts for Tiri_66:

(Start: 20 @43145 has 165 MA's), (27, 43220), (31, 43259), (34, 43313), (42, 43391), (43, 43403), (74, 43604),

Gene: Topper_65 Start: 43011, Stop: 43520, Start Num: 20

Candidate Starts for Topper_65:

(Start: 20 @43011 has 165 MA's), (27, 43086), (31, 43125), (34, 43179), (42, 43257), (43, 43269), (74, 43470),

Gene: Torres_56 Start: 42938, Stop: 43459, Start Num: 20

Candidate Starts for Torres_56:

(Start: 20 @42938 has 165 MA's), (27, 43013), (29, 43022), (34, 43106), (43, 43196), (50, 43268), (57, 43331), (59, 43358), (73, 43397),

Gene: TreyKay_67 Start: 43499, Stop: 44008, Start Num: 20

Candidate Starts for TreyKay_67:

(Start: 20 @43499 has 165 MA's), (27, 43574), (31, 43613), (34, 43667), (42, 43745), (43, 43757), (74, 43958),

Gene: TribelTrouble_67 Start: 44010, Stop: 44528, Start Num: 20

Candidate Starts for TribelTrouble_67:

(Start: 20 @44010 has 165 MA's), (35, 44184), (38, 44196), (40, 44241), (43, 44268), (44, 44280), (50, 44340), (77, 44511), (78, 44517),

Gene: TruffulaTree_66 Start: 43305, Stop: 43814, Start Num: 20

Candidate Starts for TruffulaTree_66:

(Start: 20 @43305 has 165 MA's), (27, 43380), (29, 43389), (31, 43419), (34, 43473), (42, 43551), (43, 43563), (74, 43764),

Gene: Twitch_65 Start: 43013, Stop: 43522, Start Num: 20

Candidate Starts for Twitch_65:

(Start: 20 @43013 has 165 MA's), (27, 43088), (31, 43127), (34, 43181), (42, 43259), (43, 43271), (74, 43472),

Gene: Unicorn_67 Start: 42757, Stop: 43275, Start Num: 20

Candidate Starts for Unicorn_67:

(6, 42577), (12, 42643), (Start: 20 @42757 has 165 MA's), (27, 42832), (32, 42880), (34, 42925), (38, 42943), (43, 43015), (44, 43027), (50, 43087), (74, 43225), (77, 43258), (78, 43264),

Gene: Urkel_66 Start: 43745, Stop: 44260, Start Num: 20

Candidate Starts for Urkel_66:

(Start: 20 @43745 has 165 MA's), (27, 43820), (34, 43913), (38, 43931), (42, 43991), (43, 44003), (74, 44204),

Gene: Validus_70 Start: 43876, Stop: 44394, Start Num: 20

Candidate Starts for Validus_70:

(Start: 20 @43876 has 165 MA's), (25, 43939), (27, 43951), (29, 43960), (32, 43999), (34, 44044), (38, 44062), (43, 44134), (44, 44146), (48, 44188), (50, 44206), (73, 44332),

Gene: Veliki_67 Start: 43278, Stop: 43787, Start Num: 20

Candidate Starts for Veliki_67:

(Start: 20 @43278 has 165 MA's), (27, 43353), (29, 43362), (31, 43392), (34, 43446), (42, 43524), (43, 43536), (74, 43737),

Gene: Waterfoul_61 Start: 42187, Stop: 42753, Start Num: 20

Candidate Starts for Waterfoul_61:

(Start: 15 @42163 has 1 MA's), (Start: 20 @42187 has 165 MA's), (34, 42361), (35, 42367), (42, 42439), (43, 42451), (44, 42463), (45, 42475), (50, 42523), (54, 42568), (71, 42652), (78, 42739),

Gene: Ximenita_71 Start: 43457, Stop: 43978, Start Num: 20

Candidate Starts for Ximenita_71:

(6, 43277), (Start: 20 @43457 has 165 MA's), (27, 43532), (32, 43580), (34, 43625), (38, 43643), (43, 43715), (44, 43727), (50, 43787), (74, 43928), (77, 43961), (78, 43967),

Gene: YoureAdopted_65 Start: 43424, Stop: 43933, Start Num: 20

Candidate Starts for YoureAdopted_65:

(Start: 20 @43424 has 165 MA's), (27, 43499), (31, 43538), (34, 43592), (42, 43670), (43, 43682), (74, 43883),

Gene: Yuna_70 Start: 44572, Stop: 45099, Start Num: 20

Candidate Starts for Yuna_70:

(Start: 20 @44572 has 165 MA's), (27, 44647), (32, 44695), (34, 44740), (37, 44752), (38, 44758), (43, 44830), (44, 44842), (57, 44965), (78, 45088),

Gene: Yunkel11_70 Start: 43327, Stop: 43848, Start Num: 20

Candidate Starts for Yunkel11_70:

(Start: 20 @43327 has 165 MA's), (27, 43402), (34, 43495), (38, 43513), (43, 43585), (44, 43597), (48, 43639), (74, 43795),

Gene: Zabiza_60 Start: 39161, Stop: 39670, Start Num: 20

Candidate Starts for Zabiza_60:

(Start: 20 @39161 has 165 MA's), (27, 39236), (29, 39245), (31, 39275), (34, 39329), (42, 39407), (43, 39419), (58, 39578), (74, 39620),

Gene: Zavala_68 Start: 43583, Stop: 44092, Start Num: 20

Candidate Starts for Zavala_68:

(Start: 20 @43583 has 165 MA's), (27, 43658), (29, 43667), (31, 43697), (34, 43751), (42, 43829), (43, 43841), (74, 44042),

Gene: ZoeJ_67 Start: 44866, Stop: 45384, Start Num: 20

Candidate Starts for ZoeJ_67:

(9, 44716), (Start: 20 @44866 has 165 MA's), (32, 44989), (34, 45031), (36, 45040), (37, 45043), (38, 45049), (43, 45121), (44, 45133), (45, 45145), (50, 45193), (74, 45334), (78, 45373),