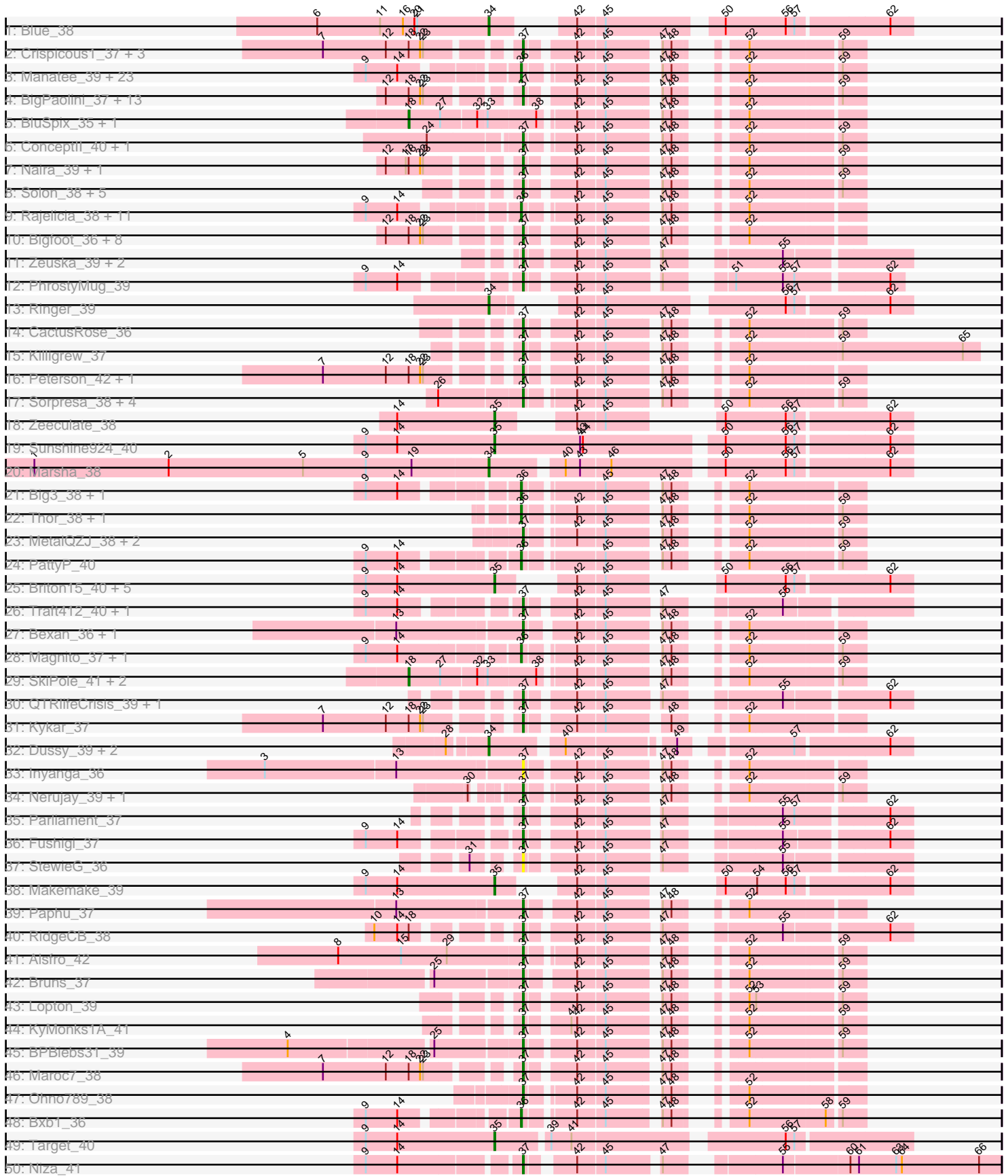


Pham 193802



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 193802 Report

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

Pham number 193802 has 145 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Blue_38
- Track 2 : Crispicous1_37, Magnar_38, Fascinus_37, Wheeler_39
- Track 3 : Manatee_39, Snazzy_37, MPlant7149_38, Pinto_40, Violet_37, Gwendoluna_41, Marge_39, Norz_40, Rufus_40, JuliaChild_40, Anglerfish_40, Ichabod_39, McGuire_39, Dynamix_39, Rhynn_38, Mkhusele_39, Squee_39, Tripl3t_39, NEHalo_38, Smeagol_40, Tote_35, AFIS_38, Hermia_41, Swole_40
- Track 4 : BigPaolini_37, Eyeball_38, Agaliana_36, A6_35, KBG_39, Wilkins_37, PacerPaul_39, Graduation_40, Topgun_37, BK1_35, Froghopper_38, Francis47_38, Smairt_39, Licorice_40
- Track 5 : BluSpix_35, IgnatiusPatJac_37
- Track 6 : ConceptII_40, Teodoridan_36
- Track 7 : Naira_39, Fenn_39
- Track 8 : Solon_38, DrFeelGood_37, Lamina13_38, Sumter_37, Rubeus_38, Tasp14_39
- Track 9 : Rajelicia_38, Michley_38, Lesedi_37, GrecoEtereo_40, Arcanine_38, Buttons_38, Adahisdi_39, TheloniousMonk_40, Oogway_37, HarryOW_38, Slagathor_39, Beatrix_38
- Track 10 : Bigfoot_36, Nhonho_38, Bircsak_38, Bones_38, Gompeii16_38, Espresso_38, Doom_38, Papez_40, Barriga_38
- Track 11 : Zeuska_39, Applejack_35, Abrogate_390
- Track 12 : PhrostyMug_39
- Track 13 : Ringer_39
- Track 14 : CactusRose_36
- Track 15 : Killigrew_37
- Track 16 : Peterson_42, ILeeKay_40
- Track 17 : Sorpresa_38, Pita2_40, Sandaddy_38, BaconJack_41, PSullivan_37
- Track 18 : Zeeculate_38
- Track 19 : Sunshine924_40
- Track 20 : Marsha_38
- Track 21 : Big3_38, Ajay_39
- Track 22 : Thor_38, SarFire_38
- Track 23 : MetalQZJ_38, Mryolo_36, MaryBeth_38
- Track 24 : PattyP_40
- Track 25 : Briton15_40, PascalRango_39, Paraselene_37, ProMouse_36, Arlo_37, Atkinbua_40
- Track 26 : Traft412_40, Perseus_40
- Track 27 : Bexan_36, StrongArm_37

- Track 28 : Magnito_37, Turj99_37
- Track 29 : SkiPole_41, Gandalf20_39, STLscum_39
- Track 30 : QTRlifeCrisis_39, Dexes_38
- Track 31 : Kykar_37
- Track 32 : Dussy_39, Abbyshoes_40, Kenmech_41
- Track 33 : Inyanga_36
- Track 34 : Nerujay_39, Hope4ever_38
- Track 35 : Parliament_37
- Track 36 : Fushigi_37
- Track 37 : StewieG_36
- Track 38 : Makemake_39
- Track 39 : Paphu_37
- Track 40 : RidgeCB_38
- Track 41 : Alsfro_42
- Track 42 : Bruns_37
- Track 43 : Lopton_39
- Track 44 : KyMonks1A_41
- Track 45 : BPBiebs31_39
- Track 46 : Maroc7_38
- Track 47 : Ohno789_38
- Track 48 : Bxb1_36
- Track 49 : Target_40
- Track 50 : Niza_41
- Track 51 : Pelly_38
- Track 52 : MrGordo_38
- Track 53 : Sagefire_40
- Track 54 : Jorgensen_38

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

The start number called the most often in the published annotations is 37, it was called in 74 of the 137 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• A6_35, Abrogate_390, Agaliana_36, Alsfro_42, Applejack_35, BK1_35, BPBiebs31_39, BaconJack_41, Barriga_38, Bexan_36, BigPaolini_37, Bigfoot_36, Bircsak_38, Bones_38, Bruns_37, CactusRose_36, ConceptII_40, Crispicous1_37, Dexes_38, Doom_38, DrFeelGood_37, Espresso_38, Eyeball_38, Fascinus_37, Fenn_39, Francis47_38, Froghopper_38, Fushigi_37, Gompeii16_38, Graduation_40, Hope4ever_38, ILeeKay_40, Inyanga_36, Jorgensen_38, KBG_39, Killigrew_37, KyMonks1A_41, Kykar_37, Lamina13_38, Licorice_40, Lopton_39, Magnar_38, Maroc7_38, MaryBeth_38, MetalQZJ_38, Mryolo_36, Naira_39, Nerujay_39, Nhonho_38, Niza_41, Ohno789_38, PSullivan_37, PacerPaul_39, Papez_40, Paphu_37, Parliament_37, Pelly_38, Perseus_40, Peterson_42, PhrostyMug_39, Pita2_40, QTRlifeCrisis_39, RidgeCB_38, Rubeus_38, Sagefire_40, Sandaddy_38, Smairt_39, Solon_38, Sorpresa_38, StewieG_36, StrongArm_37, Sumter_37, Tasp14_39, Teodoridan_36, Topgun_37, Traft412_40, Wheeler_39, Wilkins_37, Zeuska_39,

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

•

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

• AFIS_38, Abbyshoes_40, Adahisdi_39, Ajay_39, Anglerfish_40, Arcanine_38, Arlo_37, Atkinbua_40, Beatrix_38, Big3_38, BluSpix_35, Blue_38, Briton15_40, Buttons_38, Bxb1_36, Dussy_39, Dynamix_39, Gandalf20_39, GrecoEtereo_40, Gwendoluna_41, HarryOW_38, Hermia_41, Ichabod_39, IgnatiusPatJac_37, JuliaChild_40, Kenmech_41, Lesedi_37, MPlant7149_38, Magnito_37, Makemake_39, Manatee_39, Marge_39, Marsha_38, McGuire_39, Michley_38, Mkhuseli_39, MrGordo_38, NEHalo_38, Norz_40, Oogway_37, Paraselene_37, PascalRango_39, PattyP_40, Pinto_40, ProMouse_36, Rajelicia_38, Rhynn_38, Ringer_39, Rufus_40, STLscum_39, SarFire_38, SkiPole_41, Slagathor_39, Smeagol_40, Snazzy_37, Squee_39, Sunshine924_40, Swole_40, Target_40, TheloniousMonk_40, Thor_38, Tote_35, Tripl3t_39, Turj99_37, Violet_37, Zeeculate_38,

Summary by start number:

Start 18:

- Found in 39 of 145 (26.9%) of genes in pham
- Manual Annotations of this start: 5 of 137
- Called 12.8% of time when present
- Phage (with cluster) where this start called: BluSpix_35 (A1), Gandalf20_39 (A1), IgnatiusPatJac_37 (A1), STLscum_39 (A1), SkiPole_41 (A1),

Start 34:

- Found in 6 of 145 (4.1%) of genes in pham
- Manual Annotations of this start: 6 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abbyshoes_40 (A1), Blue_38 (A1), Dussy_39 (A1), Kenmech_41 (A1), Marsha_38 (A1), Ringer_39 (A1),

Start 35:

- Found in 10 of 145 (6.9%) of genes in pham
- Manual Annotations of this start: 9 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arlo_37 (A1), Atkinbua_40 (A1), Briton15_40 (A1), Makemake_39 (A1), Paraselene_37 (A1), PascalRango_39 (A1), ProMouse_36 (A1), Sunshine924_40 (A1), Target_40 (A1), Zeeculate_38 (A1),

Start 36:

- Found in 45 of 145 (31.0%) of genes in pham
- Manual Annotations of this start: 43 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AFIS_38 (A1), Adahisdi_39 (A1), Ajay_39 (A1), Anglerfish_40 (A1), Arcanine_38 (A1), Beatrix_38 (A1), Big3_38 (A1), Buttons_38 (A1), Bxb1_36 (A1), Dynamix_39 (A1), GrecoEtereo_40 (A1), Gwendoluna_41 (A1), HarryOW_38 (A1), Hermia_41 (A1), Ichabod_39 (A1), JuliaChild_40 (A1), Lesedi_37 (A1), MPlant7149_38 (A1), Magnito_37 (A1), Manatee_39 (A1), Marge_39 (A1), McGuire_39 (A1), Michley_38 (A1), Mkhuseli_39 (A1), MrGordo_38 (A1), NEHalo_38 (A1), Norz_40 (A1), Oogway_37 (A1), PattyP_40 (A1), Pinto_40 (A1), Rajelicia_38 (A1), Rhynn_38 (A1), Rufus_40 (A1), SarFire_38 (A1), Slagathor_39 (A1), Smeagol_40 (A1), Snazzy_37 (A1), Squee_39 (A1),

Swole_40 (A1), TheloniousMonk_40 (A1), Thor_38 (A1), Tote_35 (A1), Tripl3t_39 (A1), Turj99_37 (A1), Violet_37 (A1),

Start 37:

- Found in 79 of 145 (54.5%) of genes in pham
- Manual Annotations of this start: 74 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A6_35 (A1), Abrogate_390 (A1), Agaliana_36 (A1), Alsfro_42 (A1), Applejack_35 (A1), BK1_35 (A1), BPBiels31_39 (A1), BaconJack_41 (A1), Barriga_38 (A1), Bexan_36 (A1), BigPaolini_37 (A1), Bigfoot_36 (A1), Bircsak_38 (A1), Bones_38 (A1), Bruns_37 (A1), CactusRose_36 (A1), Conceptll_40 (A1), Crispicous1_37 (A1), Dexes_38 (A1), Doom_38 (A1), DrFeelGood_37 (A1), Espresso_38 (A1), Eyeball_38 (A1), Fascinus_37 (A1), Fenn_39 (A1), Francis47_38 (A1), Froghopper_38 (A1), Fushigi_37 (A1), Gompeii16_38 (A1), Graduation_40 (A1), Hope4ever_38 (A1), lLeeKay_40 (A1), Inyanga_36 (A1), Jorgensen_38 (A1), KBG_39 (A1), Killigrew_37 (A1), KyMonks1A_41 (A1), Kykar_37 (A1), Lamina13_38 (A1), Licorice_40 (A1), Lopton_39 (A1), Magnar_38 (A1), Maroc7_38 (A1), MaryBeth_38 (A1), MetalQZJ_38 (A1), Mryolo_36 (A1), Naira_39 (A1), Nerujay_39 (A1), Nhonho_38 (A1), Niza_41 (A1), Ohno789_38 (A1), PSullivan_37 (A1), PacerPaul_39 (A1), Papez_40 (A1), Paphu_37 (A1), Parliament_37 (A1), Pelly_38 (A1), Perseus_40 (A1), Peterson_42 (A1), PhrostyMug_39 (A1), Pita2_40 (A1), QTRlifeCrisis_39 (A1), RidgeCB_38 (A1), Rubeus_38 (A1), Sagefire_40 (A1), Sandaddy_38 (A1), Smairt_39 (A1), Solon_38 (A1), Sorpresa_38 (A1), StewieG_36 (A1), StrongArm_37 (A1), Sumter_37 (A1), Tasp14_39 (A1), Teodoridan_36 (A1), Topgun_37 (A1), Traft412_40 (A1), Wheeler_39 (A1), Wilkins_37 (A1), Zeuska_39 (A1),

Summary by clusters:

There is one cluster represented in this pham: A1

Info for manual annotations of cluster A1:

- Start number 18 was manually annotated 5 times for cluster A1.
- Start number 34 was manually annotated 6 times for cluster A1.
- Start number 35 was manually annotated 9 times for cluster A1.
- Start number 36 was manually annotated 43 times for cluster A1.
- Start number 37 was manually annotated 74 times for cluster A1.

Gene Information:

Gene: A6_35 Start: 30422, Stop: 30150, Start Num: 37

Candidate Starts for A6_35:

(12, 30536), (Start: 18 @30512 has 5 MA's), (22, 30500), (23, 30497), (Start: 37 @30422 has 74 MA's), (42, 30380), (45, 30353), (47, 30308), (48, 30299), (52, 30260), (59, 30173),

Gene: AFIS_38 Start: 31598, Stop: 31326, Start Num: 36

Candidate Starts for AFIS_38:

(9, 31733), (14, 31700), (Start: 36 @31598 has 43 MA's), (42, 31556), (45, 31529), (47, 31484), (48, 31475), (52, 31436), (59, 31349),

Gene: Abbyshoes_40 Start: 31568, Stop: 31185, Start Num: 34

Candidate Starts for Abbyshoes_40:
(28, 31604), (Start: 34 @31568 has 6 MA's), (40, 31502), (49, 31400), (57, 31301), (62, 31208),

Gene: Abrogate_390 Start: 32285, Stop: 31953, Start Num: 37
Candidate Starts for Abrogate_390:
(Start: 37 @32285 has 74 MA's), (42, 32243), (45, 32216), (47, 32168), (55, 32075),

Gene: Adahisdi_39 Start: 31648, Stop: 31376, Start Num: 36
Candidate Starts for Adahisdi_39:
(9, 31783), (14, 31750), (Start: 36 @31648 has 43 MA's), (42, 31606), (45, 31579), (47, 31534), (48, 31525), (52, 31486),

Gene: Agaliana_36 Start: 28180, Stop: 27908, Start Num: 37
Candidate Starts for Agaliana_36:
(12, 28294), (Start: 18 @28270 has 5 MA's), (22, 28258), (23, 28255), (Start: 37 @28180 has 74 MA's), (42, 28138), (45, 28111), (47, 28066), (48, 28057), (52, 28018), (59, 27931),

Gene: Ajay_39 Start: 31439, Stop: 31167, Start Num: 36
Candidate Starts for Ajay_39:
(9, 31574), (14, 31541), (Start: 36 @31439 has 43 MA's), (45, 31370), (47, 31325), (48, 31316), (52, 31277),

Gene: Alsfro_42 Start: 31790, Stop: 31518, Start Num: 37
Candidate Starts for Alsfro_42:
(8, 31982), (15, 31916), (29, 31868), (Start: 37 @31790 has 74 MA's), (42, 31748), (45, 31721), (47, 31676), (48, 31667), (52, 31628), (59, 31541),

Gene: Anglerfish_40 Start: 31701, Stop: 31429, Start Num: 36
Candidate Starts for Anglerfish_40:
(9, 31836), (14, 31803), (Start: 36 @31701 has 43 MA's), (42, 31659), (45, 31632), (47, 31587), (48, 31578), (52, 31539), (59, 31452),

Gene: Applejack_35 Start: 28515, Stop: 28180, Start Num: 37
Candidate Starts for Applejack_35:
(Start: 37 @28515 has 74 MA's), (42, 28470), (45, 28443), (47, 28395), (55, 28302),

Gene: Arcanine_38 Start: 30821, Stop: 30549, Start Num: 36
Candidate Starts for Arcanine_38:
(9, 30956), (14, 30923), (Start: 36 @30821 has 43 MA's), (42, 30779), (45, 30752), (47, 30707), (48, 30698), (52, 30659),

Gene: Arlo_37 Start: 31329, Stop: 31018, Start Num: 35
Candidate Starts for Arlo_37:
(9, 31464), (14, 31431), (Start: 35 @31329 has 9 MA's), (42, 31287), (45, 31260), (50, 31206), (56, 31143), (57, 31134), (62, 31041),

Gene: Atkinbua_40 Start: 31777, Stop: 31466, Start Num: 35
Candidate Starts for Atkinbua_40:
(9, 31912), (14, 31879), (Start: 35 @31777 has 9 MA's), (42, 31735), (45, 31708), (50, 31654), (56, 31591), (57, 31582), (62, 31489),

Gene: BK1_35 Start: 30422, Stop: 30150, Start Num: 37
Candidate Starts for BK1_35:

(12, 30536), (Start: 18 @30512 has 5 MA's), (22, 30500), (23, 30497), (Start: 37 @30422 has 74 MA's), (42, 30380), (45, 30353), (47, 30308), (48, 30299), (52, 30260), (59, 30173),

Gene: BPBiebs31_39 Start: 31743, Stop: 31468, Start Num: 37

Candidate Starts for BPBiebs31_39:

(4, 31971), (25, 31830), (Start: 37 @31743 has 74 MA's), (42, 31698), (45, 31671), (47, 31626), (48, 31617), (52, 31578), (59, 31491),

Gene: BaconJack_41 Start: 31798, Stop: 31526, Start Num: 37

Candidate Starts for BaconJack_41:

(26, 31882), (Start: 37 @31798 has 74 MA's), (42, 31756), (45, 31729), (47, 31684), (48, 31675), (52, 31636), (59, 31549),

Gene: Barriga_38 Start: 30917, Stop: 30645, Start Num: 37

Candidate Starts for Barriga_38:

(12, 31031), (Start: 18 @31007 has 5 MA's), (22, 30995), (23, 30992), (Start: 37 @30917 has 74 MA's), (42, 30875), (45, 30848), (47, 30803), (48, 30794), (52, 30755),

Gene: Beatrix_38 Start: 32774, Stop: 32502, Start Num: 36

Candidate Starts for Beatrix_38:

(9, 32909), (14, 32876), (Start: 36 @32774 has 43 MA's), (42, 32732), (45, 32705), (47, 32660), (48, 32651), (52, 32612),

Gene: Bexan_36 Start: 32268, Stop: 31996, Start Num: 37

Candidate Starts for Bexan_36:

(13, 32394), (Start: 37 @32268 has 74 MA's), (42, 32226), (45, 32199), (47, 32154), (48, 32145), (52, 32106),

Gene: Big3_38 Start: 31940, Stop: 31668, Start Num: 36

Candidate Starts for Big3_38:

(9, 32075), (14, 32042), (Start: 36 @31940 has 43 MA's), (45, 31871), (47, 31826), (48, 31817), (52, 31778),

Gene: BigPaolini_37 Start: 29684, Stop: 29412, Start Num: 37

Candidate Starts for BigPaolini_37:

(12, 29798), (Start: 18 @29774 has 5 MA's), (22, 29762), (23, 29759), (Start: 37 @29684 has 74 MA's), (42, 29642), (45, 29615), (47, 29570), (48, 29561), (52, 29522), (59, 29435),

Gene: Bigfoot_36 Start: 30710, Stop: 30438, Start Num: 37

Candidate Starts for Bigfoot_36:

(12, 30824), (Start: 18 @30800 has 5 MA's), (22, 30788), (23, 30785), (Start: 37 @30710 has 74 MA's), (42, 30668), (45, 30641), (47, 30596), (48, 30587), (52, 30548),

Gene: Bircsak_38 Start: 31775, Stop: 31503, Start Num: 37

Candidate Starts for Bircsak_38:

(12, 31889), (Start: 18 @31865 has 5 MA's), (22, 31853), (23, 31850), (Start: 37 @31775 has 74 MA's), (42, 31733), (45, 31706), (47, 31661), (48, 31652), (52, 31613),

Gene: BluSpix_35 Start: 27351, Stop: 26965, Start Num: 18

Candidate Starts for BluSpix_35:

(Start: 18 @27351 has 5 MA's), (27, 27318), (32, 27282), (33, 27273), (38, 27225), (42, 27195), (45, 27168), (47, 27123), (48, 27114), (52, 27075),

Gene: Blue_38 Start: 31834, Stop: 31469, Start Num: 34

Candidate Starts for Blue_38:

(6, 32014), (11, 31948), (16, 31924), (20, 31912), (21, 31909), (Start: 34 @31834 has 6 MA's), (42, 31789), (45, 31762), (50, 31657), (56, 31594), (57, 31585), (62, 31492),

Gene: Bones_38 Start: 31179, Stop: 30907, Start Num: 37

Candidate Starts for Bones_38:

(12, 31293), (Start: 18 @31269 has 5 MA's), (22, 31257), (23, 31254), (Start: 37 @31179 has 74 MA's), (42, 31137), (45, 31110), (47, 31065), (48, 31056), (52, 31017),

Gene: Briton15_40 Start: 31612, Stop: 31301, Start Num: 35

Candidate Starts for Briton15_40:

(9, 31747), (14, 31714), (Start: 35 @31612 has 9 MA's), (42, 31570), (45, 31543), (50, 31489), (56, 31426), (57, 31417), (62, 31324),

Gene: Bruns_37 Start: 31253, Stop: 30981, Start Num: 37

Candidate Starts for Bruns_37:

(25, 31340), (Start: 37 @31253 has 74 MA's), (42, 31211), (45, 31184), (47, 31139), (48, 31130), (52, 31091), (59, 31004),

Gene: Buttons_38 Start: 30324, Stop: 30052, Start Num: 36

Candidate Starts for Buttons_38:

(9, 30459), (14, 30426), (Start: 36 @30324 has 43 MA's), (42, 30282), (45, 30255), (47, 30210), (48, 30201), (52, 30162),

Gene: Bxb1_36 Start: 31386, Stop: 31114, Start Num: 36

Candidate Starts for Bxb1_36:

(9, 31521), (14, 31488), (Start: 36 @31386 has 43 MA's), (42, 31344), (45, 31317), (47, 31272), (48, 31263), (52, 31224), (58, 31149), (59, 31137),

Gene: CactusRose_36 Start: 30823, Stop: 30551, Start Num: 37

Candidate Starts for CactusRose_36:

(Start: 37 @30823 has 74 MA's), (42, 30781), (45, 30754), (47, 30709), (48, 30700), (52, 30661), (59, 30574),

Gene: ConceptII_40 Start: 32357, Stop: 32085, Start Num: 37

Candidate Starts for ConceptII_40:

(24, 32447), (Start: 37 @32357 has 74 MA's), (42, 32315), (45, 32288), (47, 32243), (48, 32234), (52, 32195), (59, 32108),

Gene: Crispicous1_37 Start: 30836, Stop: 30564, Start Num: 37

Candidate Starts for Crispicous1_37:

(7, 31016), (12, 30950), (Start: 18 @30926 has 5 MA's), (22, 30914), (23, 30911), (Start: 37 @30836 has 74 MA's), (42, 30794), (45, 30767), (47, 30722), (48, 30713), (52, 30674), (59, 30587),

Gene: Dexes_38 Start: 31800, Stop: 31477, Start Num: 37

Candidate Starts for Dexes_38:

(Start: 37 @31800 has 74 MA's), (42, 31758), (45, 31731), (47, 31683), (55, 31590), (62, 31491),

Gene: Doom_38 Start: 31605, Stop: 31333, Start Num: 37

Candidate Starts for Doom_38:

(12, 31719), (Start: 18 @31695 has 5 MA's), (22, 31683), (23, 31680), (Start: 37 @31605 has 74 MA's), (42, 31563), (45, 31536), (47, 31491), (48, 31482), (52, 31443),

Gene: DrFeelGood_37 Start: 31699, Stop: 31427, Start Num: 37

Candidate Starts for DrFeelGood_37:

(Start: 37 @31699 has 74 MA's), (42, 31657), (45, 31630), (47, 31585), (48, 31576), (52, 31537), (59, 31450),

Gene: Dussy_39 Start: 31588, Stop: 31205, Start Num: 34

Candidate Starts for Dussy_39:

(28, 31624), (Start: 34 @31588 has 6 MA's), (40, 31522), (49, 31420), (57, 31321), (62, 31228),

Gene: Dynamix_39 Start: 31345, Stop: 31073, Start Num: 36

Candidate Starts for Dynamix_39:

(9, 31480), (14, 31447), (Start: 36 @31345 has 43 MA's), (42, 31303), (45, 31276), (47, 31231), (48, 31222), (52, 31183), (59, 31096),

Gene: Espresso_38 Start: 31529, Stop: 31257, Start Num: 37

Candidate Starts for Espresso_38:

(12, 31643), (Start: 18 @31619 has 5 MA's), (22, 31607), (23, 31604), (Start: 37 @31529 has 74 MA's), (42, 31487), (45, 31460), (47, 31415), (48, 31406), (52, 31367),

Gene: Eyeball_38 Start: 31085, Stop: 30813, Start Num: 37

Candidate Starts for Eyeball_38:

(12, 31199), (Start: 18 @31175 has 5 MA's), (22, 31163), (23, 31160), (Start: 37 @31085 has 74 MA's), (42, 31043), (45, 31016), (47, 30971), (48, 30962), (52, 30923), (59, 30836),

Gene: Fascinus_37 Start: 30859, Stop: 30587, Start Num: 37

Candidate Starts for Fascinus_37:

(7, 31039), (12, 30973), (Start: 18 @30949 has 5 MA's), (22, 30937), (23, 30934), (Start: 37 @30859 has 74 MA's), (42, 30817), (45, 30790), (47, 30745), (48, 30736), (52, 30697), (59, 30610),

Gene: Fenn_39 Start: 32892, Stop: 32620, Start Num: 37

Candidate Starts for Fenn_39:

(12, 33006), (17, 32985), (Start: 18 @32982 has 5 MA's), (22, 32970), (23, 32967), (Start: 37 @32892 has 74 MA's), (42, 32850), (45, 32823), (47, 32778), (48, 32769), (52, 32730), (59, 32643),

Gene: Francis47_38 Start: 31946, Stop: 31674, Start Num: 37

Candidate Starts for Francis47_38:

(12, 32060), (Start: 18 @32036 has 5 MA's), (22, 32024), (23, 32021), (Start: 37 @31946 has 74 MA's), (42, 31904), (45, 31877), (47, 31832), (48, 31823), (52, 31784), (59, 31697),

Gene: Froghopper_38 Start: 30873, Stop: 30601, Start Num: 37

Candidate Starts for Froghopper_38:

(12, 30987), (Start: 18 @30963 has 5 MA's), (22, 30951), (23, 30948), (Start: 37 @30873 has 74 MA's), (42, 30831), (45, 30804), (47, 30759), (48, 30750), (52, 30711), (59, 30624),

Gene: Fushigi_37 Start: 29564, Stop: 29232, Start Num: 37

Candidate Starts for Fushigi_37:

(9, 29699), (14, 29666), (Start: 37 @29564 has 74 MA's), (42, 29522), (45, 29495), (47, 29447), (55, 29354), (62, 29255),

Gene: Gandalf20_39 Start: 32248, Stop: 31862, Start Num: 18

Candidate Starts for Gandalf20_39:

(Start: 18 @32248 has 5 MA's), (27, 32215), (32, 32179), (33, 32170), (38, 32122), (42, 32092), (45, 32065), (47, 32020), (48, 32011), (52, 31972), (59, 31885),

Gene: Gompeii16_38 Start: 31776, Stop: 31504, Start Num: 37

Candidate Starts for Gompeii16_38:

(12, 31890), (Start: 18 @31866 has 5 MA's), (22, 31854), (23, 31851), (Start: 37 @31776 has 74 MA's), (42, 31734), (45, 31707), (47, 31662), (48, 31653), (52, 31614),

Gene: Graduation_40 Start: 31999, Stop: 31727, Start Num: 37

Candidate Starts for Graduation_40:

(12, 32113), (Start: 18 @32089 has 5 MA's), (22, 32077), (23, 32074), (Start: 37 @31999 has 74 MA's), (42, 31957), (45, 31930), (47, 31885), (48, 31876), (52, 31837), (59, 31750),

Gene: GrecoEtereo_40 Start: 32075, Stop: 31803, Start Num: 36

Candidate Starts for GrecoEtereo_40:

(9, 32210), (14, 32177), (Start: 36 @32075 has 43 MA's), (42, 32033), (45, 32006), (47, 31961), (48, 31952), (52, 31913),

Gene: Gwendoluna_41 Start: 33532, Stop: 33128, Start Num: 36

Candidate Starts for Gwendoluna_41:

(9, 33667), (14, 33634), (Start: 36 @33532 has 43 MA's), (42, 33490), (45, 33463), (47, 33418), (48, 33409), (52, 33370), (59, 33277),

Gene: HarryOW_38 Start: 31247, Stop: 30975, Start Num: 36

Candidate Starts for HarryOW_38:

(9, 31382), (14, 31349), (Start: 36 @31247 has 43 MA's), (42, 31205), (45, 31178), (47, 31133), (48, 31124), (52, 31085),

Gene: Hermia_41 Start: 32803, Stop: 32531, Start Num: 36

Candidate Starts for Hermia_41:

(9, 32938), (14, 32905), (Start: 36 @32803 has 43 MA's), (42, 32761), (45, 32734), (47, 32689), (48, 32680), (52, 32641), (59, 32554),

Gene: Hope4ever_38 Start: 31682, Stop: 31410, Start Num: 37

Candidate Starts for Hope4ever_38:

(30, 31718), (Start: 37 @31682 has 74 MA's), (42, 31640), (45, 31613), (47, 31568), (48, 31559), (52, 31520), (59, 31433),

Gene: ILeeKay_40 Start: 31449, Stop: 31177, Start Num: 37

Candidate Starts for ILeeKay_40:

(7, 31629), (12, 31563), (Start: 18 @31539 has 5 MA's), (22, 31527), (23, 31524), (Start: 37 @31449 has 74 MA's), (42, 31407), (45, 31380), (47, 31335), (48, 31326), (52, 31287),

Gene: Ichabod_39 Start: 31486, Stop: 31214, Start Num: 36

Candidate Starts for Ichabod_39:

(9, 31621), (14, 31588), (Start: 36 @31486 has 43 MA's), (42, 31444), (45, 31417), (47, 31372), (48, 31363), (52, 31324), (59, 31237),

Gene: IgnatiusPatJac_37 Start: 31296, Stop: 30910, Start Num: 18

Candidate Starts for IgnatiusPatJac_37:

(Start: 18 @31296 has 5 MA's), (27, 31263), (32, 31227), (33, 31218), (38, 31170), (42, 31140), (45, 31113), (47, 31068), (48, 31059), (52, 31020),

Gene: Inyanga_36 Start: 30633, Stop: 30358, Start Num: 37

Candidate Starts for Inyanga_36:

(3, 30894), (13, 30759), (Start: 37 @30633 has 74 MA's), (42, 30588), (45, 30561), (47, 30516), (48, 30507), (52, 30468),

Gene: Jorgensen_38 Start: 31181, Stop: 30909, Start Num: 37

Candidate Starts for Jorgensen_38:

(Start: 37 @31181 has 74 MA's), (42, 31139), (45, 31112), (47, 31067), (48, 31058), (52, 31019),

Gene: JuliaChild_40 Start: 31921, Stop: 31649, Start Num: 36

Candidate Starts for JuliaChild_40:

(9, 32056), (14, 32023), (Start: 36 @31921 has 43 MA's), (42, 31879), (45, 31852), (47, 31807), (48, 31798), (52, 31759), (59, 31672),

Gene: KBG_39 Start: 32392, Stop: 32120, Start Num: 37

Candidate Starts for KBG_39:

(12, 32506), (Start: 18 @32482 has 5 MA's), (22, 32470), (23, 32467), (Start: 37 @32392 has 74 MA's), (42, 32350), (45, 32323), (47, 32278), (48, 32269), (52, 32230), (59, 32143),

Gene: Kenmech_41 Start: 32714, Stop: 32331, Start Num: 34

Candidate Starts for Kenmech_41:

(28, 32750), (Start: 34 @32714 has 6 MA's), (40, 32648), (49, 32546), (57, 32447), (62, 32354),

Gene: Killigrew_37 Start: 31321, Stop: 30923, Start Num: 37

Candidate Starts for Killigrew_37:

(Start: 37 @31321 has 74 MA's), (42, 31279), (45, 31252), (47, 31207), (48, 31198), (52, 31159), (59, 31066), (65, 30940),

Gene: KyMonks1A_41 Start: 31846, Stop: 31574, Start Num: 37

Candidate Starts for KyMonks1A_41:

(Start: 37 @31846 has 74 MA's), (41, 31810), (42, 31804), (45, 31777), (47, 31732), (48, 31723), (52, 31684), (59, 31597),

Gene: Kykar_37 Start: 30822, Stop: 30550, Start Num: 37

Candidate Starts for Kykar_37:

(7, 31002), (12, 30936), (Start: 18 @30912 has 5 MA's), (22, 30900), (23, 30897), (Start: 37 @30822 has 74 MA's), (42, 30780), (45, 30753), (48, 30699), (52, 30660),

Gene: Lamina13_38 Start: 30935, Stop: 30663, Start Num: 37

Candidate Starts for Lamina13_38:

(Start: 37 @30935 has 74 MA's), (42, 30893), (45, 30866), (47, 30821), (48, 30812), (52, 30773), (59, 30686),

Gene: Lesedi_37 Start: 31210, Stop: 30938, Start Num: 36

Candidate Starts for Lesedi_37:

(9, 31345), (14, 31312), (Start: 36 @31210 has 43 MA's), (42, 31168), (45, 31141), (47, 31096), (48, 31087), (52, 31048),

Gene: Licorice_40 Start: 32280, Stop: 32008, Start Num: 37

Candidate Starts for Licorice_40:

(12, 32394), (Start: 18 @32370 has 5 MA's), (22, 32358), (23, 32355), (Start: 37 @32280 has 74 MA's), (42, 32238), (45, 32211), (47, 32166), (48, 32157), (52, 32118), (59, 32031),

Gene: Lopton_39 Start: 32717, Stop: 32445, Start Num: 37
Candidate Starts for Lopton_39:
(Start: 37 @32717 has 74 MA's), (42, 32675), (45, 32648), (47, 32603), (48, 32594), (52, 32555), (53, 32549), (59, 32468),

Gene: MPlant7149_38 Start: 30995, Stop: 30723, Start Num: 36
Candidate Starts for MPlant7149_38:
(9, 31130), (14, 31097), (Start: 36 @30995 has 43 MA's), (42, 30953), (45, 30926), (47, 30881), (48, 30872), (52, 30833), (59, 30746),

Gene: Magnar_38 Start: 31184, Stop: 30912, Start Num: 37
Candidate Starts for Magnar_38:
(7, 31364), (12, 31298), (Start: 18 @31274 has 5 MA's), (22, 31262), (23, 31259), (Start: 37 @31184 has 74 MA's), (42, 31142), (45, 31115), (47, 31070), (48, 31061), (52, 31022), (59, 30935),

Gene: Magnito_37 Start: 30988, Stop: 30716, Start Num: 36
Candidate Starts for Magnito_37:
(9, 31135), (14, 31102), (Start: 36 @30988 has 43 MA's), (42, 30946), (45, 30919), (47, 30874), (48, 30865), (52, 30826), (59, 30739),

Gene: Makemake_39 Start: 32642, Stop: 32331, Start Num: 35
Candidate Starts for Makemake_39:
(9, 32777), (14, 32744), (Start: 35 @32642 has 9 MA's), (42, 32600), (45, 32573), (50, 32519), (54, 32486), (56, 32456), (57, 32447), (62, 32354),

Gene: Manatee_39 Start: 31021, Stop: 30749, Start Num: 36
Candidate Starts for Manatee_39:
(9, 31156), (14, 31123), (Start: 36 @31021 has 43 MA's), (42, 30979), (45, 30952), (47, 30907), (48, 30898), (52, 30859), (59, 30772),

Gene: Marge_39 Start: 32073, Stop: 31798, Start Num: 36
Candidate Starts for Marge_39:
(9, 32208), (14, 32175), (Start: 36 @32073 has 43 MA's), (42, 32028), (45, 32001), (47, 31956), (48, 31947), (52, 31908), (59, 31821),

Gene: Maroc7_38 Start: 31169, Stop: 30897, Start Num: 37
Candidate Starts for Maroc7_38:
(7, 31349), (12, 31283), (Start: 18 @31259 has 5 MA's), (22, 31247), (23, 31244), (Start: 37 @31169 has 74 MA's), (42, 31127), (45, 31100), (47, 31055), (48, 31046),

Gene: Marsha_38 Start: 32325, Stop: 31924, Start Num: 34
Candidate Starts for Marsha_38:
(1, 32799), (2, 32658), (5, 32517), (9, 32451), (19, 32403), (Start: 34 @32325 has 6 MA's), (40, 32259), (43, 32244), (46, 32214), (50, 32112), (56, 32049), (57, 32040), (62, 31947),

Gene: MaryBeth_38 Start: 31490, Stop: 31218, Start Num: 37
Candidate Starts for MaryBeth_38:
(Start: 37 @31490 has 74 MA's), (42, 31448), (45, 31421), (47, 31376), (48, 31367), (52, 31328), (59, 31241),

Gene: McGuire_39 Start: 31317, Stop: 31045, Start Num: 36
Candidate Starts for McGuire_39:

(9, 31452), (14, 31419), (Start: 36 @31317 has 43 MA's), (42, 31275), (45, 31248), (47, 31203), (48, 31194), (52, 31155), (59, 31068),

Gene: MetalQZJ_38 Start: 31490, Stop: 31218, Start Num: 37

Candidate Starts for MetalQZJ_38:

(Start: 37 @31490 has 74 MA's), (42, 31448), (45, 31421), (47, 31376), (48, 31367), (52, 31328), (59, 31241),

Gene: Michley_38 Start: 31162, Stop: 30890, Start Num: 36

Candidate Starts for Michley_38:

(9, 31297), (14, 31264), (Start: 36 @31162 has 43 MA's), (42, 31120), (45, 31093), (47, 31048), (48, 31039), (52, 31000),

Gene: Mkhuseleli_39 Start: 31361, Stop: 31089, Start Num: 36

Candidate Starts for Mkhuseleli_39:

(9, 31496), (14, 31463), (Start: 36 @31361 has 43 MA's), (42, 31319), (45, 31292), (47, 31247), (48, 31238), (52, 31199), (59, 31112),

Gene: MrGordo_38 Start: 31025, Stop: 30753, Start Num: 36

Candidate Starts for MrGordo_38:

(Start: 36 @31025 has 43 MA's), (45, 30956), (47, 30911), (48, 30902), (52, 30863),

Gene: Mryolo_36 Start: 31035, Stop: 30763, Start Num: 37

Candidate Starts for Mryolo_36:

(Start: 37 @31035 has 74 MA's), (42, 30993), (45, 30966), (47, 30921), (48, 30912), (52, 30873), (59, 30786),

Gene: NEHalo_38 Start: 31254, Stop: 30982, Start Num: 36

Candidate Starts for NEHalo_38:

(9, 31389), (14, 31356), (Start: 36 @31254 has 43 MA's), (42, 31212), (45, 31185), (47, 31140), (48, 31131), (52, 31092), (59, 31005),

Gene: Naira_39 Start: 32939, Stop: 32667, Start Num: 37

Candidate Starts for Naira_39:

(12, 33053), (17, 33032), (Start: 18 @33029 has 5 MA's), (22, 33017), (23, 33014), (Start: 37 @32939 has 74 MA's), (42, 32897), (45, 32870), (47, 32825), (48, 32816), (52, 32777), (59, 32690),

Gene: Nerujay_39 Start: 31923, Stop: 31651, Start Num: 37

Candidate Starts for Nerujay_39:

(30, 31959), (Start: 37 @31923 has 74 MA's), (42, 31881), (45, 31854), (47, 31809), (48, 31800), (52, 31761), (59, 31674),

Gene: Nhonho_38 Start: 31661, Stop: 31389, Start Num: 37

Candidate Starts for Nhonho_38:

(12, 31775), (Start: 18 @31751 has 5 MA's), (22, 31739), (23, 31736), (Start: 37 @31661 has 74 MA's), (42, 31619), (45, 31592), (47, 31547), (48, 31538), (52, 31499),

Gene: Niza_41 Start: 32712, Stop: 32281, Start Num: 37

Candidate Starts for Niza_41:

(9, 32859), (14, 32826), (Start: 37 @32712 has 74 MA's), (42, 32673), (45, 32646), (47, 32598), (55, 32505), (60, 32439), (61, 32430), (63, 32391), (64, 32385), (66, 32304),

Gene: Norz_40 Start: 32172, Stop: 31900, Start Num: 36

Candidate Starts for Norz_40:

(9, 32307), (14, 32274), (Start: 36 @32172 has 43 MA's), (42, 32130), (45, 32103), (47, 32058), (48, 32049), (52, 32010), (59, 31923),

Gene: Ohno789_38 Start: 31317, Stop: 31045, Start Num: 37

Candidate Starts for Ohno789_38:

(Start: 37 @31317 has 74 MA's), (42, 31275), (45, 31248), (47, 31203), (48, 31194), (52, 31155),

Gene: Oogway_37 Start: 30855, Stop: 30583, Start Num: 36

Candidate Starts for Oogway_37:

(9, 30990), (14, 30957), (Start: 36 @30855 has 43 MA's), (42, 30813), (45, 30786), (47, 30741), (48, 30732), (52, 30693),

Gene: PSullivan_37 Start: 30492, Stop: 30220, Start Num: 37

Candidate Starts for PSullivan_37:

(26, 30576), (Start: 37 @30492 has 74 MA's), (42, 30450), (45, 30423), (47, 30378), (48, 30369), (52, 30330), (59, 30243),

Gene: PacerPaul_39 Start: 31313, Stop: 31041, Start Num: 37

Candidate Starts for PacerPaul_39:

(12, 31427), (Start: 18 @31403 has 5 MA's), (22, 31391), (23, 31388), (Start: 37 @31313 has 74 MA's), (42, 31271), (45, 31244), (47, 31199), (48, 31190), (52, 31151), (59, 31064),

Gene: Papez_40 Start: 33003, Stop: 32731, Start Num: 37

Candidate Starts for Papez_40:

(12, 33117), (Start: 18 @33093 has 5 MA's), (22, 33081), (23, 33078), (Start: 37 @33003 has 74 MA's), (42, 32961), (45, 32934), (47, 32889), (48, 32880), (52, 32841),

Gene: Paphu_37 Start: 31244, Stop: 30972, Start Num: 37

Candidate Starts for Paphu_37:

(13, 31370), (Start: 37 @31244 has 74 MA's), (42, 31202), (45, 31175), (47, 31130), (48, 31121), (52, 31082),

Gene: Paraselene_37 Start: 31722, Stop: 31354, Start Num: 35

Candidate Starts for Paraselene_37:

(9, 31857), (14, 31824), (Start: 35 @31722 has 9 MA's), (42, 31677), (45, 31650), (50, 31542), (56, 31479), (57, 31470), (62, 31377),

Gene: Parliament_37 Start: 31469, Stop: 31134, Start Num: 37

Candidate Starts for Parliament_37:

(Start: 37 @31469 has 74 MA's), (42, 31427), (45, 31400), (47, 31352), (55, 31259), (57, 31247), (62, 31157),

Gene: PascalRango_39 Start: 31395, Stop: 31084, Start Num: 35

Candidate Starts for PascalRango_39:

(9, 31530), (14, 31497), (Start: 35 @31395 has 9 MA's), (42, 31353), (45, 31326), (50, 31272), (56, 31209), (57, 31200), (62, 31107),

Gene: PattyP_40 Start: 31585, Stop: 31313, Start Num: 36

Candidate Starts for PattyP_40:

(9, 31720), (14, 31687), (Start: 36 @31585 has 43 MA's), (45, 31516), (47, 31471), (48, 31462), (52, 31423), (59, 31336),

Gene: Pelly_38 Start: 31718, Stop: 31284, Start Num: 37

Candidate Starts for Pelly_38:

(Start: 37 @31718 has 74 MA's), (42, 31676), (45, 31649), (47, 31601), (55, 31508), (60, 31442), (61, 31433), (63, 31394), (64, 31388), (66, 31307),

Gene: Perseus_40 Start: 32401, Stop: 32072, Start Num: 37

Candidate Starts for Perseus_40:

(9, 32536), (14, 32503), (Start: 37 @32401 has 74 MA's), (42, 32362), (45, 32335), (47, 32287), (55, 32194),

Gene: Peterson_42 Start: 33587, Stop: 33315, Start Num: 37

Candidate Starts for Peterson_42:

(7, 33767), (12, 33701), (Start: 18 @33677 has 5 MA's), (22, 33665), (23, 33662), (Start: 37 @33587 has 74 MA's), (42, 33545), (45, 33518), (47, 33473), (48, 33464), (52, 33425),

Gene: PhrostyMug_39 Start: 31697, Stop: 31371, Start Num: 37

Candidate Starts for PhrostyMug_39:

(9, 31832), (14, 31799), (Start: 37 @31697 has 74 MA's), (42, 31655), (45, 31628), (47, 31580), (51, 31535), (55, 31487), (57, 31475), (62, 31385),

Gene: Pinto_40 Start: 31529, Stop: 31257, Start Num: 36

Candidate Starts for Pinto_40:

(9, 31664), (14, 31631), (Start: 36 @31529 has 43 MA's), (42, 31487), (45, 31460), (47, 31415), (48, 31406), (52, 31367), (59, 31280),

Gene: Pita2_40 Start: 31989, Stop: 31717, Start Num: 37

Candidate Starts for Pita2_40:

(26, 32073), (Start: 37 @31989 has 74 MA's), (42, 31947), (45, 31920), (47, 31875), (48, 31866), (52, 31827), (59, 31740),

Gene: ProMouse_36 Start: 31549, Stop: 31166, Start Num: 35

Candidate Starts for ProMouse_36:

(9, 31684), (14, 31651), (Start: 35 @31549 has 9 MA's), (42, 31507), (45, 31480), (50, 31354), (56, 31291), (57, 31282), (62, 31189),

Gene: QTRlifeCrisis_39 Start: 32125, Stop: 31793, Start Num: 37

Candidate Starts for QTRlifeCrisis_39:

(Start: 37 @32125 has 74 MA's), (42, 32083), (45, 32056), (47, 32008), (55, 31915), (62, 31816),

Gene: Rajelicia_38 Start: 31483, Stop: 31211, Start Num: 36

Candidate Starts for Rajelicia_38:

(9, 31618), (14, 31585), (Start: 36 @31483 has 43 MA's), (42, 31441), (45, 31414), (47, 31369), (48, 31360), (52, 31321),

Gene: Rhynn_38 Start: 31498, Stop: 31226, Start Num: 36

Candidate Starts for Rhynn_38:

(9, 31633), (14, 31600), (Start: 36 @31498 has 43 MA's), (42, 31456), (45, 31429), (47, 31384), (48, 31375), (52, 31336), (59, 31249),

Gene: RidgeCB_38 Start: 31144, Stop: 30812, Start Num: 37

Candidate Starts for RidgeCB_38:

(10, 31258), (14, 31234), (Start: 18 @31222 has 5 MA's), (Start: 37 @31144 has 74 MA's), (42, 31102), (45, 31075), (47, 31027), (55, 30934), (62, 30835),

Gene: Ringer_39 Start: 31985, Stop: 31623, Start Num: 34
Candidate Starts for Ringer_39:
(Start: 34 @31985 has 6 MA's), (42, 31943), (45, 31916), (56, 31748), (57, 31739), (62, 31646),

Gene: Rubeus_38 Start: 29616, Stop: 29344, Start Num: 37
Candidate Starts for Rubeus_38:
(Start: 37 @29616 has 74 MA's), (42, 29574), (45, 29547), (47, 29502), (48, 29493), (52, 29454), (59, 29367),

Gene: Rufus_40 Start: 31854, Stop: 31582, Start Num: 36
Candidate Starts for Rufus_40:
(9, 31989), (14, 31956), (Start: 36 @31854 has 43 MA's), (42, 31812), (45, 31785), (47, 31740), (48, 31731), (52, 31692), (59, 31605),

Gene: STLscum_39 Start: 32385, Stop: 31999, Start Num: 18
Candidate Starts for STLscum_39:
(Start: 18 @32385 has 5 MA's), (27, 32352), (32, 32316), (33, 32307), (38, 32259), (42, 32229), (45, 32202), (47, 32157), (48, 32148), (52, 32109), (59, 32022),

Gene: Sagefire_40 Start: 32355, Stop: 32020, Start Num: 37
Candidate Starts for Sagefire_40:
(Start: 37 @32355 has 74 MA's), (42, 32313), (45, 32286), (47, 32238), (51, 32193), (55, 32145), (62, 32043),

Gene: Sandaddy_38 Start: 31382, Stop: 31110, Start Num: 37
Candidate Starts for Sandaddy_38:
(26, 31466), (Start: 37 @31382 has 74 MA's), (42, 31340), (45, 31313), (47, 31268), (48, 31259), (52, 31220), (59, 31133),

Gene: SarFire_38 Start: 31557, Stop: 31285, Start Num: 36
Candidate Starts for SarFire_38:
(Start: 36 @31557 has 43 MA's), (42, 31515), (45, 31488), (47, 31443), (48, 31434), (52, 31395), (59, 31308),

Gene: SkiPole_41 Start: 31904, Stop: 31518, Start Num: 18
Candidate Starts for SkiPole_41:
(Start: 18 @31904 has 5 MA's), (27, 31871), (32, 31835), (33, 31826), (38, 31778), (42, 31748), (45, 31721), (47, 31676), (48, 31667), (52, 31628), (59, 31541),

Gene: Slagathor_39 Start: 31408, Stop: 31136, Start Num: 36
Candidate Starts for Slagathor_39:
(9, 31543), (14, 31510), (Start: 36 @31408 has 43 MA's), (42, 31366), (45, 31339), (47, 31294), (48, 31285), (52, 31246),

Gene: Smairt_39 Start: 31500, Stop: 31228, Start Num: 37
Candidate Starts for Smairt_39:
(12, 31614), (Start: 18 @31590 has 5 MA's), (22, 31578), (23, 31575), (Start: 37 @31500 has 74 MA's), (42, 31458), (45, 31431), (47, 31386), (48, 31377), (52, 31338), (59, 31251),

Gene: Smeagol_40 Start: 32730, Stop: 32458, Start Num: 36
Candidate Starts for Smeagol_40:

(9, 32865), (14, 32832), (Start: 36 @32730 has 43 MA's), (42, 32688), (45, 32661), (47, 32616), (48, 32607), (52, 32568), (59, 32481),

Gene: Snazzy_37 Start: 31284, Stop: 31012, Start Num: 36

Candidate Starts for Snazzy_37:

(9, 31419), (14, 31386), (Start: 36 @31284 has 43 MA's), (42, 31242), (45, 31215), (47, 31170), (48, 31161), (52, 31122), (59, 31035),

Gene: Solon_38 Start: 31615, Stop: 31343, Start Num: 37

Candidate Starts for Solon_38:

(Start: 37 @31615 has 74 MA's), (42, 31573), (45, 31546), (47, 31501), (48, 31492), (52, 31453), (59, 31366),

Gene: Sorpresa_38 Start: 31384, Stop: 31112, Start Num: 37

Candidate Starts for Sorpresa_38:

(26, 31468), (Start: 37 @31384 has 74 MA's), (42, 31342), (45, 31315), (47, 31270), (48, 31261), (52, 31222), (59, 31135),

Gene: Squee_39 Start: 32135, Stop: 31863, Start Num: 36

Candidate Starts for Squee_39:

(9, 32270), (14, 32237), (Start: 36 @32135 has 43 MA's), (42, 32093), (45, 32066), (47, 32021), (48, 32012), (52, 31973), (59, 31886),

Gene: StewieG_36 Start: 29129, Stop: 28797, Start Num: 37

Candidate Starts for StewieG_36:

(31, 29165), (Start: 37 @29129 has 74 MA's), (42, 29087), (45, 29060), (47, 29012), (55, 28919),

Gene: StrongArm_37 Start: 32396, Stop: 32124, Start Num: 37

Candidate Starts for StrongArm_37:

(13, 32522), (Start: 37 @32396 has 74 MA's), (42, 32354), (45, 32327), (47, 32282), (48, 32273), (52, 32234),

Gene: Sumter_37 Start: 31344, Stop: 31072, Start Num: 37

Candidate Starts for Sumter_37:

(Start: 37 @31344 has 74 MA's), (42, 31302), (45, 31275), (47, 31230), (48, 31221), (52, 31182), (59, 31095),

Gene: Sunshine924_40 Start: 31419, Stop: 31006, Start Num: 35

Candidate Starts for Sunshine924_40:

(9, 31554), (14, 31521), (Start: 35 @31419 has 9 MA's), (43, 31329), (44, 31326), (50, 31194), (56, 31131), (57, 31122), (62, 31029),

Gene: Swole_40 Start: 31396, Stop: 31124, Start Num: 36

Candidate Starts for Swole_40:

(9, 31531), (14, 31498), (Start: 36 @31396 has 43 MA's), (42, 31354), (45, 31327), (47, 31282), (48, 31273), (52, 31234), (59, 31147),

Gene: Target_40 Start: 30793, Stop: 30395, Start Num: 35

Candidate Starts for Target_40:

(9, 30928), (14, 30895), (Start: 35 @30793 has 9 MA's), (39, 30742), (41, 30721), (56, 30520), (57, 30511),

Gene: Tasp14_39 Start: 31559, Stop: 31287, Start Num: 37

Candidate Starts for Tasp14_39:

(Start: 37 @31559 has 74 MA's), (42, 31517), (45, 31490), (47, 31445), (48, 31436), (52, 31397), (59, 31310),

Gene: Teodoridan_36 Start: 30785, Stop: 30513, Start Num: 37

Candidate Starts for Teodoridan_36:

(24, 30875), (Start: 37 @30785 has 74 MA's), (42, 30743), (45, 30716), (47, 30671), (48, 30662), (52, 30623), (59, 30536),

Gene: TheloniousMonk_40 Start: 32966, Stop: 32694, Start Num: 36

Candidate Starts for TheloniousMonk_40:

(9, 33101), (14, 33068), (Start: 36 @32966 has 43 MA's), (42, 32924), (45, 32897), (47, 32852), (48, 32843), (52, 32804),

Gene: Thor_38 Start: 30915, Stop: 30643, Start Num: 36

Candidate Starts for Thor_38:

(Start: 36 @30915 has 43 MA's), (42, 30873), (45, 30846), (47, 30801), (48, 30792), (52, 30753), (59, 30666),

Gene: Topgun_37 Start: 30806, Stop: 30534, Start Num: 37

Candidate Starts for Topgun_37:

(12, 30920), (Start: 18 @30896 has 5 MA's), (22, 30884), (23, 30881), (Start: 37 @30806 has 74 MA's), (42, 30764), (45, 30737), (47, 30692), (48, 30683), (52, 30644), (59, 30557),

Gene: Tote_35 Start: 28663, Stop: 28391, Start Num: 36

Candidate Starts for Tote_35:

(9, 28798), (14, 28765), (Start: 36 @28663 has 43 MA's), (42, 28621), (45, 28594), (47, 28549), (48, 28540), (52, 28501), (59, 28414),

Gene: Traft412_40 Start: 32486, Stop: 32154, Start Num: 37

Candidate Starts for Traft412_40:

(9, 32621), (14, 32588), (Start: 37 @32486 has 74 MA's), (42, 32444), (45, 32417), (47, 32369), (55, 32276),

Gene: Tripl3t_39 Start: 32414, Stop: 32145, Start Num: 36

Candidate Starts for Tripl3t_39:

(9, 32549), (14, 32516), (Start: 36 @32414 has 43 MA's), (42, 32369), (45, 32342), (47, 32297), (48, 32288), (52, 32249), (59, 32162),

Gene: Turj99_37 Start: 31258, Stop: 30986, Start Num: 36

Candidate Starts for Turj99_37:

(9, 31405), (14, 31372), (Start: 36 @31258 has 43 MA's), (42, 31216), (45, 31189), (47, 31144), (48, 31135), (52, 31096), (59, 31009),

Gene: Violet_37 Start: 31832, Stop: 31560, Start Num: 36

Candidate Starts for Violet_37:

(9, 31967), (14, 31934), (Start: 36 @31832 has 43 MA's), (42, 31790), (45, 31763), (47, 31718), (48, 31709), (52, 31670), (59, 31583),

Gene: Wheeler_39 Start: 31744, Stop: 31472, Start Num: 37

Candidate Starts for Wheeler_39:

(7, 31924), (12, 31858), (Start: 18 @31834 has 5 MA's), (22, 31822), (23, 31819), (Start: 37 @31744 has 74 MA's), (42, 31702), (45, 31675), (47, 31630), (48, 31621), (52, 31582), (59, 31495),

Gene: Wilkins_37 Start: 30739, Stop: 30467, Start Num: 37

Candidate Starts for Wilkins_37:

(12, 30853), (Start: 18 @30829 has 5 MA's), (22, 30817), (23, 30814), (Start: 37 @30739 has 74 MA's), (42, 30697), (45, 30670), (47, 30625), (48, 30616), (52, 30577), (59, 30490),

Gene: Zeeculate_38 Start: 32108, Stop: 31794, Start Num: 35

Candidate Starts for Zeeculate_38:

(14, 32210), (Start: 35 @32108 has 9 MA's), (42, 32063), (45, 32036), (50, 31982), (56, 31919), (57, 31910), (62, 31817),

Gene: Zeuska_39 Start: 32058, Stop: 31723, Start Num: 37

Candidate Starts for Zeuska_39:

(Start: 37 @32058 has 74 MA's), (42, 32013), (45, 31986), (47, 31938), (55, 31845),