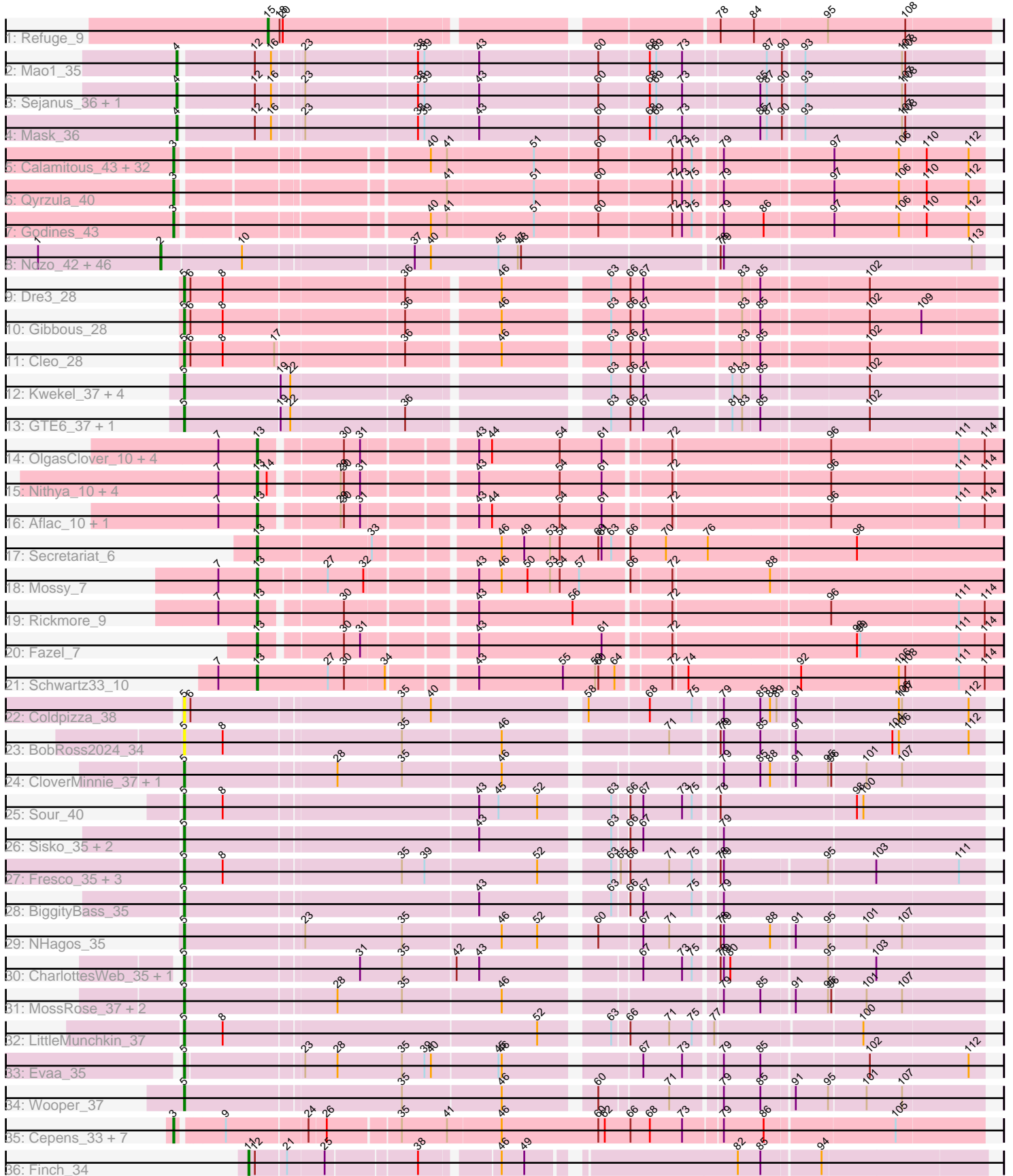


Pham 196347



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 196347 Report

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

Pham number 196347 has 145 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Refuge_9
- Track 2 : Mao1_35
- Track 3 : Sejanus_36, Dori_37
- Track 4 : Mask_36
- Track 5 : Calamitous_43, Boyle_43, Lars_43, Faze9_42, Lephleur_43, ItsyBitsy1_43, FrenchFry_43, Allegro_43, Tinciduntolum_44, Bananafish_43, Hedgerow_43, TA17A_43, West99_43, Coffee_43, Kheth_43, Blocker23_43, Tres_43, Holeinone_43, Vic9_43, Kaleb_43, Phantasmagoria_43, Sabella_42, Rhinoforte_43, LizLemon_43, Brownie5_43, Eaglehorse_43, Arbiter_42, Rosebush_42, Laurie_42, Opia_43, Ares_43, MasterPo_43, Glass_43
- Track 6 : Qyrzula_40
- Track 7 : Godines_43
- Track 8 : Nozo_42, Halfpint_41, Yahalom_42, GlenHope_43, Phayeta_43, Chandler_42, Briakila_43, MmasiCarm_42, Daisy_42, Deenasa_42, Abinghost_42, Devonte_42, Casbah_41, Rita1961_42, Kamiyu_42, Neos5_42, Obutu_42, Bernardo_43, Pipefish_44, Phaedrus_40, Athena_43, Gervas_42, Philly_41, HarveySr_42, Phlyer_42, Yinz_42, Compostia_43, ChaChing_42, Mortcellus_41, Corofin_42, RomaT_42, LestyG_42, Ben11_41, Marley1013_42, Heathcliff_42, Jackstina_39, SynergyX_42, OrangeOswald_42, RagingRooster_42, Tydolla_42, SlippinJimmy_42, Baloo_42, Akoma_42, Audrey_42, Gadget_43, Morty007_42, Kronus_41
- Track 9 : Dre3_28
- Track 10 : Gibbous_28
- Track 11 : Cleo_28
- Track 12 : Kwekel_37, EdmundFerry_36, RoadKill_35, Chickadee_37, Twonlo_35
- Track 13 : GTE6_37, Tiamoceli_38
- Track 14 : OlgasClover_10, Jodelie19_10, BluerMoon_11, Eddiemania_9, TenaciousP_10
- Track 15 : Nithya_10, Chikenjars_10, Duffington_10, EndAve_10, AlainaMarie_10
- Track 16 : Aflac_10, Figliar_10
- Track 17 : Secretariat_6
- Track 18 : Mossy_7
- Track 19 : Rickmore_9
- Track 20 : Fazel_7
- Track 21 : Schwartz33_10
- Track 22 : Coldpizza_38
- Track 23 : BobRoss2024_34

- Track 24 : CloverMinnie_37, CaiB_37
- Track 25 : Sour_40
- Track 26 : Sisko_35, Yago84_35, AnClar_36
- Track 27 : Fresco_35, Axumite_35, Shatter_35, Ligma_35
- Track 28 : BiggityBass_35
- Track 29 : NHagos_35
- Track 30 : CharlottesWeb_35, Mariokart_35
- Track 31 : MossRose_37, AnarQue_37, MakoManhole_37
- Track 32 : LittleMunchkin_37
- Track 33 : Evaa_35
- Track 34 : Wooper_37
- Track 35 : Cepens_33, PR_33, D12_32, Argie_34, GodPhather_34, Taptic_33, Jeon_33, Megabear_33
- Track 36 : Finch_34

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

The start number called the most often in the published annotations is 2, it was called in 45 of the 135 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_42, Akoma_42, Athena_43, Audrey_42, Baloo_42, Ben11_41, Bernardo_43, Briakila_43, Casbah_41, ChaChing_42, Chandler_42, Compostia_43, Corofin_42, Daisy_42, Deenasa_42, Devonte_42, Gadget_43, Gervas_42, GlenHope_43, Halfpint_41, HarveySr_42, Heathcliff_42, Jackstina_39, Kamiyu_42, Kronus_41, LestyG_42, Marley1013_42, MmasiCarm_42, Mortcellus_41, Morty007_42, Neos5_42, Nozo_42, Obutu_42, OrangeOswald_42, Phaedrus_40, Phayeta_43, Philly_41, Phlyer_42, Pipefish_44, RagingRooster_42, Rita1961_42, RomaT_42, SlippinJimmy_42, SynergyX_42, Tydolla_42, Yahalom_42, Yinz_42,

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

-

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

- Aflac_10, AlainaMarie_10, Allegro_43, AnClar_36, AnarQue_37, Arbiter_42, Ares_43, Argie_34, Axumite_35, Bananafish_43, BiggityBass_35, Blocker23_43, BluerMoon_11, BobRoss2024_34, Boyle_43, Brownie5_43, CaiB_37, Calamitous_43, Cepens_33, CharlottesWeb_35, Chickadee_37, Chikenjars_10, Cleo_28, CloverMinnie_37, Coffee_43, Coldpizza_38, D12_32, Dori_37, Dre3_28, Duffington_10, Eaglehorse_43, Eddiemania_9, EdmundFerry_36, EndAve_10, Evaa_35, Faze9_42, Fazel_7, Figliar_10, Finch_34, FrenchFry_43, Fresco_35, GTE6_37, Gibbous_28, Glass_43, GodPhather_34, Godines_43, Hedgerow_43, Holeinone_43, ItsyBitsy1_43, Jeon_33, Jodelie19_10, Kaleb_43, Kheth_43, Kwekel_37, Lars_43, Laurie_42, Lephleur_43, Ligma_35, LittleMunchkin_37, LizLemon_43, MakoManhole_37, Mao1_35, Mariokart_35, Mask_36, MasterPo_43, Megabear_33, MossRose_37, Mossy_7, NHagos_35, Nithya_10, OlgasClover_10, Opia_43, PR_33, Phantasmagoria_43, Qyrzula_40, Refuge_9, Rhinoforte_43, Rickmore_9, RoadKill_35, Rosebush_42, Sabella_42, Schwartz33_10, Secretariat_6, Sejanus_36, Shatter_35, Sisko_35, Sour_40, TA17A_43, Taptic_33, TenaciousP_10, Tiamoceli_38, Tinciduntolum_44, Tres_43, Twonlo_35, Vic9_43, West99_43,

Wooper_37, Yago84_35,

Summary by start number:

Start 2:

- Found in 47 of 145 (32.4%) of genes in pham
- Manual Annotations of this start: 45 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abinghost_42 (B3), Akoma_42 (B3), Athena_43 (B3), Audrey_42 (B3), Baloo_42 (B3), Ben11_41 (B3), Bernardo_43 (B3), Briakila_43 (B3), Casbah_41 (B3), ChaChing_42 (B3), Chandler_42 (B3), Compostia_43 (B3), Corofin_42 (B3), Daisy_42 (B3), Deenasa_42 (B3), Devonte_42 (B3), Gadget_43 (B3), Gervas_42 (B3), GlenHope_43 (B3), Halfpint_41 (B3), HarveySr_42 (B3), Heathcliff_42 (B3), Jackstina_39 (B3), Kamiyu_42 (B3), Kronus_41 (B3), LestyG_42 (B3), Marley1013_42 (B3), MmasiCarm_42 (B3), Mortcellus_41 (B3), Morty007_42 (B3), Neos5_42 (B3), Nozo_42 (B3), Obutu_42 (B3), OrangeOswald_42 (B3), Phaedrus_40 (B3), Phayeta_43 (B3), Philly_41 (B3), Phlyer_42 (B3), Pipefish_44 (B3), RagingRooster_42 (B3), Rita1961_42 (B3), RomaT_42 (B3), SlippinJimmy_42 (B3), SynergyX_42 (B3), Tydolla_42 (B3), Yahalom_42 (B3), Yinz_42 (B3),

Start 3:

- Found in 43 of 145 (29.7%) of genes in pham
- Manual Annotations of this start: 40 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Allegro_43 (B2), Arbiter_42 (B2), Ares_43 (B2), Argie_34 (W), Bananafish_43 (B2), Blocker23_43 (B2), Boyle_43 (B2), Brownie5_43 (B2), Calamitous_43 (B2), Cepens_33 (W), Coffee_43 (B2), D12_32 (W), Eaglehorse_43 (B2), Faze9_42 (B2), FrenchFry_43 (B2), Glass_43 (B2), GodPhather_34 (W), Godines_43 (B2), Hedgerow_43 (B2), Holeinone_43 (B2), ItsyBitsy1_43 (B2), Jeon_33 (W), Kaleb_43 (B2), Kheth_43 (B2), Lars_43 (B2), Laurie_42 (B2), Lephleur_43 (B2), LizLemon_43 (B2), MasterPo_43 (B2), Megabear_33 (W), Opia_43 (B2), PR_33 (W), Phantasmagoria_43 (B2), Qyrzula_40 (B2), Rhinoforte_43 (B2), Rosebush_42 (B2), Sabella_42 (B2), TA17A_43 (B2), Taptic_33 (W), Tinciduntolum_44 (B2), Tres_43 (B2), Vic9_43 (B2), West99_43 (B2),

Start 4:

- Found in 4 of 145 (2.8%) of genes in pham
- Manual Annotations of this start: 4 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dori_37 (AD), Mao1_35 (AD), Mask_36 (AD), Sejanus_36 (AD),

Start 5:

- Found in 32 of 145 (22.1%) of genes in pham
- Manual Annotations of this start: 28 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnClar_36 (DR), AnarQue_37 (DR), Axumite_35 (DR), BiggityBass_35 (DR), BobRoss2024_34 (DR), CaiB_37 (DR), CharlottesWeb_35 (DR), Chickadee_37 (DE3), Cleo_28 (CT), CloverMinnie_37 (DR), Coldpizza_38 (DR), Dre3_28 (CT), EdmundFerry_36 (DE3), Evaa_35 (DR), Fresco_35 (DR), GTE6_37 (DE3), Gibbous_28 (CT), Kwekel_37 (DE3), Ligma_35

(DR), LittleMunchkin_37 (DR), MakoManhole_37 (DR), Mariokart_35 (DR), MossRose_37 (DR), NHagos_35 (DR), RoadKill_35 (DE3), Shatter_35 (DR), Sisko_35 (DR), Sour_40 (DR), Tiamoceli_38 (DE3), Twonlo_35 (DE3), Wooper_37 (DR), Yago84_35 (DR),

Start 11:

- Found in 1 of 145 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finch_34 (singleton),

Start 13:

- Found in 17 of 145 (11.7%) of genes in pham
- Manual Annotations of this start: 16 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aflac_10 (DJ), AlainaMarie_10 (DJ), BluerMoon_11 (DJ), Chikenjars_10 (DJ), Duffington_10 (DJ), Eddiemania_9 (DJ), EndAve_10 (DJ), Fazel_7 (DJ), Figliar_10 (DJ), Jodelie19_10 (DJ), Mossy_7 (DJ), Nithya_10 (DJ), OlgasClover_10 (DJ), Rickmore_9 (DJ), Schwartz33_10 (DJ), Secretariat_6 (DJ), TenaciousP_10 (DJ),

Start 15:

- Found in 1 of 145 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 135
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Refuge_9 (A12),

Summary by clusters:

There are 10 clusters represented in this pham: singleton, DJ, W, A12, DE3, B2, B3, CT, DR, AD,

Info for manual annotations of cluster A12:

- Start number 15 was manually annotated 1 time for cluster A12.

Info for manual annotations of cluster AD:

- Start number 4 was manually annotated 4 times for cluster AD.

Info for manual annotations of cluster B2:

- Start number 3 was manually annotated 32 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 2 was manually annotated 45 times for cluster B3.

Info for manual annotations of cluster CT:

- Start number 5 was manually annotated 3 times for cluster CT.

Info for manual annotations of cluster DE3:

- Start number 5 was manually annotated 6 times for cluster DE3.

Info for manual annotations of cluster DJ:

- Start number 13 was manually annotated 16 times for cluster DJ.

Info for manual annotations of cluster DR:

- Start number 5 was manually annotated 19 times for cluster DR.

Info for manual annotations of cluster W:

- Start number 3 was manually annotated 8 times for cluster W.

Gene Information:

Gene: Abinghost_42 Start: 38010, Stop: 38735, Start Num: 2

Candidate Starts for Abinghost_42:

(1, 37896), (Start: 2 @38010 has 45 MA's), (10, 38082), (37, 38229), (40, 38244), (45, 38307), (47, 38325), (48, 38328), (78, 38499), (79, 38502), (113, 38724),

Gene: Aflac_10 Start: 5221, Stop: 5865, Start Num: 13

Candidate Starts for Aflac_10:

(7, 5185), (Start: 13 @5221 has 16 MA's), (29, 5287), (30, 5290), (31, 5305), (43, 5398), (44, 5410), (54, 5473), (61, 5512), (72, 5569), (96, 5707), (111, 5824), (114, 5848),

Gene: Akoma_42 Start: 38014, Stop: 38739, Start Num: 2

Candidate Starts for Akoma_42:

(1, 37900), (Start: 2 @38014 has 45 MA's), (10, 38086), (37, 38233), (40, 38248), (45, 38311), (47, 38329), (48, 38332), (78, 38503), (79, 38506), (113, 38728),

Gene: AlainaMarie_10 Start: 5212, Stop: 5856, Start Num: 13

Candidate Starts for AlainaMarie_10:

(7, 5176), (Start: 13 @5212 has 16 MA's), (14, 5221), (29, 5278), (30, 5281), (31, 5296), (43, 5389), (54, 5464), (61, 5503), (72, 5560), (96, 5698), (111, 5815), (114, 5839),

Gene: Allegro_43 Start: 38534, Stop: 39229, Start Num: 3

Candidate Starts for Allegro_43:

(Start: 3 @38534 has 40 MA's), (40, 38744), (41, 38759), (51, 38837), (60, 38894), (72, 38960), (73, 38969), (75, 38978), (79, 38999), (97, 39092), (106, 39152), (110, 39176), (112, 39215),

Gene: AnClar_36 Start: 33290, Stop: 33988, Start Num: 5

Candidate Starts for AnClar_36:

(Start: 5 @33290 has 28 MA's), (43, 33554), (63, 33662), (66, 33674), (67, 33686), (79, 33752),

Gene: AnarQue_37 Start: 32400, Stop: 33092, Start Num: 5

Candidate Starts for AnarQue_37:

(Start: 5 @32400 has 28 MA's), (28, 32535), (35, 32595), (46, 32685), (79, 32862), (85, 32895), (91, 32922), (95, 32952), (96, 32955), (101, 32985), (107, 33018),

Gene: Arbiter_42 Start: 38620, Stop: 39315, Start Num: 3

Candidate Starts for Arbiter_42:

(Start: 3 @38620 has 40 MA's), (40, 38830), (41, 38845), (51, 38923), (60, 38980), (72, 39046), (73, 39055), (75, 39064), (79, 39085), (97, 39178), (106, 39238), (110, 39262), (112, 39301),

Gene: Ares_43 Start: 38604, Stop: 39299, Start Num: 3

Candidate Starts for Ares_43:

(Start: 3 @38604 has 40 MA's), (40, 38814), (41, 38829), (51, 38907), (60, 38964), (72, 39030), (73, 39039), (75, 39048), (79, 39069), (97, 39162), (106, 39222), (110, 39246), (112, 39285),

Gene: Argie_34 Start: 34873, Stop: 35583, Start Num: 3

Candidate Starts for Argie_34:

(Start: 3 @34873 has 40 MA's), (9, 34912), (24, 34984), (26, 34999), (35, 35062), (41, 35104), (46, 35152), (60, 35242), (62, 35248), (66, 35272), (68, 35290), (73, 35320), (79, 35353), (86, 35389), (105, 35503),

Gene: Athena_43 Start: 38761, Stop: 39486, Start Num: 2

Candidate Starts for Athena_43:

(1, 38647), (Start: 2 @38761 has 45 MA's), (10, 38833), (37, 38980), (40, 38995), (45, 39058), (47, 39076), (48, 39079), (78, 39250), (79, 39253), (113, 39475),

Gene: Audrey_42 Start: 38010, Stop: 38735, Start Num: 2

Candidate Starts for Audrey_42:

(1, 37896), (Start: 2 @38010 has 45 MA's), (10, 38082), (37, 38229), (40, 38244), (45, 38307), (47, 38325), (48, 38328), (78, 38499), (79, 38502), (113, 38724),

Gene: Axumite_35 Start: 30447, Stop: 31139, Start Num: 5

Candidate Starts for Axumite_35:

(Start: 5 @30447 has 28 MA's), (8, 30483), (35, 30642), (39, 30663), (52, 30765), (63, 30819), (65, 30825), (66, 30831), (71, 30867), (75, 30888), (78, 30906), (79, 30909), (95, 30999), (103, 31041), (111, 31116),

Gene: Baloo_42 Start: 38013, Stop: 38738, Start Num: 2

Candidate Starts for Baloo_42:

(1, 37899), (Start: 2 @38013 has 45 MA's), (10, 38085), (37, 38232), (40, 38247), (45, 38310), (47, 38328), (48, 38331), (78, 38502), (79, 38505), (113, 38727),

Gene: Bananafish_43 Start: 38540, Stop: 39235, Start Num: 3

Candidate Starts for Bananafish_43:

(Start: 3 @38540 has 40 MA's), (40, 38750), (41, 38765), (51, 38843), (60, 38900), (72, 38966), (73, 38975), (75, 38984), (79, 39005), (97, 39098), (106, 39158), (110, 39182), (112, 39221),

Gene: Ben11_41 Start: 37832, Stop: 38557, Start Num: 2

Candidate Starts for Ben11_41:

(1, 37718), (Start: 2 @37832 has 45 MA's), (10, 37904), (37, 38051), (40, 38066), (45, 38129), (47, 38147), (48, 38150), (78, 38321), (79, 38324), (113, 38546),

Gene: Bernardo_43 Start: 38558, Stop: 39283, Start Num: 2

Candidate Starts for Bernardo_43:

(1, 38444), (Start: 2 @38558 has 45 MA's), (10, 38630), (37, 38777), (40, 38792), (45, 38855), (47, 38873), (48, 38876), (78, 39047), (79, 39050), (113, 39272),

Gene: BiggityBass_35 Start: 32697, Stop: 33395, Start Num: 5

Candidate Starts for BiggityBass_35:

(Start: 5 @32697 has 28 MA's), (43, 32961), (63, 33069), (66, 33081), (67, 33093), (75, 33138), (79, 33159),

Gene: Blocker23_43 Start: 38658, Stop: 39353, Start Num: 3

Candidate Starts for Blocker23_43:

(Start: 3 @38658 has 40 MA's), (40, 38868), (41, 38883), (51, 38961), (60, 39018), (72, 39084), (73, 39093), (75, 39102), (79, 39123), (97, 39216), (106, 39276), (110, 39300), (112, 39339),

Gene: BluerMoon_11 Start: 5215, Stop: 5859, Start Num: 13

Candidate Starts for BluerMoon_11:

(7, 5179), (Start: 13 @5215 has 16 MA's), (30, 5284), (31, 5299), (43, 5392), (44, 5404), (54, 5467), (61, 5506), (72, 5563), (96, 5701), (111, 5818), (114, 5842),

Gene: BobRoss2024_34 Start: 30450, Stop: 31145, Start Num: 5

Candidate Starts for BobRoss2024_34:

(Start: 5 @30450 has 28 MA's), (8, 30486), (35, 30645), (46, 30735), (71, 30873), (78, 30912), (79, 30915), (85, 30948), (91, 30975), (104, 31062), (106, 31068), (112, 31131),

Gene: Boyle_43 Start: 38659, Stop: 39354, Start Num: 3

Candidate Starts for Boyle_43:

(Start: 3 @38659 has 40 MA's), (40, 38869), (41, 38884), (51, 38962), (60, 39019), (72, 39085), (73, 39094), (75, 39103), (79, 39124), (97, 39217), (106, 39277), (110, 39301), (112, 39340),

Gene: Briakila_43 Start: 38780, Stop: 39505, Start Num: 2

Candidate Starts for Briakila_43:

(1, 38666), (Start: 2 @38780 has 45 MA's), (10, 38852), (37, 38999), (40, 39014), (45, 39077), (47, 39095), (48, 39098), (78, 39269), (79, 39272), (113, 39494),

Gene: Brownie5_43 Start: 38665, Stop: 39360, Start Num: 3

Candidate Starts for Brownie5_43:

(Start: 3 @38665 has 40 MA's), (40, 38875), (41, 38890), (51, 38968), (60, 39025), (72, 39091), (73, 39100), (75, 39109), (79, 39130), (97, 39223), (106, 39283), (110, 39307), (112, 39346),

Gene: CaiB_37 Start: 32386, Stop: 33078, Start Num: 5

Candidate Starts for CaiB_37:

(Start: 5 @32386 has 28 MA's), (28, 32521), (35, 32581), (46, 32671), (79, 32848), (85, 32881), (88, 32890), (91, 32908), (95, 32938), (96, 32941), (101, 32971), (107, 33004),

Gene: Calamitous_43 Start: 38545, Stop: 39240, Start Num: 3

Candidate Starts for Calamitous_43:

(Start: 3 @38545 has 40 MA's), (40, 38755), (41, 38770), (51, 38848), (60, 38905), (72, 38971), (73, 38980), (75, 38989), (79, 39010), (97, 39103), (106, 39163), (110, 39187), (112, 39226),

Gene: Casbah_41 Start: 37862, Stop: 38587, Start Num: 2

Candidate Starts for Casbah_41:

(1, 37748), (Start: 2 @37862 has 45 MA's), (10, 37934), (37, 38081), (40, 38096), (45, 38159), (47, 38177), (48, 38180), (78, 38351), (79, 38354), (113, 38576),

Gene: Cepens_33 Start: 34588, Stop: 35298, Start Num: 3

Candidate Starts for Cepens_33:

(Start: 3 @34588 has 40 MA's), (9, 34627), (24, 34699), (26, 34714), (35, 34777), (41, 34819), (46, 34867), (60, 34957), (62, 34963), (66, 34987), (68, 35005), (73, 35035), (79, 35068), (86, 35104), (105, 35218),

Gene: ChaChing_42 Start: 38025, Stop: 38750, Start Num: 2

Candidate Starts for ChaChing_42:

(1, 37911), (Start: 2 @38025 has 45 MA's), (10, 38097), (37, 38244), (40, 38259), (45, 38322), (47, 38340), (48, 38343), (78, 38514), (79, 38517), (113, 38739),

Gene: Chandler_42 Start: 38793, Stop: 39518, Start Num: 2

Candidate Starts for Chandler_42:

(1, 38679), (Start: 2 @38793 has 45 MA's), (10, 38865), (37, 39012), (40, 39027), (45, 39090), (47, 39108), (48, 39111), (78, 39282), (79, 39285), (113, 39507),

Gene: CharlottesWeb_35 Start: 30386, Stop: 31075, Start Num: 5

Candidate Starts for CharlottesWeb_35:

(Start: 5 @30386 has 28 MA's), (31, 30539), (35, 30578), (42, 30626), (43, 30647), (67, 30779), (73, 30815), (75, 30824), (78, 30842), (79, 30845), (80, 30851), (95, 30935), (103, 30977),

Gene: Chickadee_37 Start: 33101, Stop: 33805, Start Num: 5

Candidate Starts for Chickadee_37:

(Start: 5 @33101 has 28 MA's), (19, 33188), (22, 33197), (63, 33464), (66, 33482), (67, 33494), (81, 33572), (83, 33581), (85, 33596), (102, 33689),

Gene: Chikenjars_10 Start: 5212, Stop: 5856, Start Num: 13

Candidate Starts for Chikenjars_10:

(7, 5176), (Start: 13 @5212 has 16 MA's), (14, 5221), (29, 5278), (30, 5281), (31, 5296), (43, 5389), (54, 5464), (61, 5503), (72, 5560), (96, 5698), (111, 5815), (114, 5839),

Gene: Cleo_28 Start: 23262, Stop: 23966, Start Num: 5

Candidate Starts for Cleo_28:

(Start: 5 @23262 has 28 MA's), (6, 23268), (8, 23298), (17, 23346), (36, 23460), (46, 23538), (63, 23625), (66, 23643), (67, 23655), (83, 23742), (85, 23757), (102, 23850),

Gene: CloverMinnie_37 Start: 32326, Stop: 33018, Start Num: 5

Candidate Starts for CloverMinnie_37:

(Start: 5 @32326 has 28 MA's), (28, 32461), (35, 32521), (46, 32611), (79, 32788), (85, 32821), (88, 32830), (91, 32848), (95, 32878), (96, 32881), (101, 32911), (107, 32944),

Gene: Coffee_43 Start: 38648, Stop: 39343, Start Num: 3

Candidate Starts for Coffee_43:

(Start: 3 @38648 has 40 MA's), (40, 38858), (41, 38873), (51, 38951), (60, 39008), (72, 39074), (73, 39083), (75, 39092), (79, 39113), (97, 39206), (106, 39266), (110, 39290), (112, 39329),

Gene: Coldpizza_38 Start: 34838, Stop: 35533, Start Num: 5

Candidate Starts for Coldpizza_38:

(Start: 5 @34838 has 28 MA's), (6, 34844), (35, 35033), (40, 35060), (58, 35189), (68, 35243), (75, 35282), (79, 35303), (85, 35336), (88, 35345), (89, 35351), (91, 35363), (106, 35456), (107, 35459), (112, 35519),

Gene: Compostia_43 Start: 38441, Stop: 39166, Start Num: 2

Candidate Starts for Compostia_43:

(1, 38327), (Start: 2 @38441 has 45 MA's), (10, 38513), (37, 38660), (40, 38675), (45, 38738), (47, 38756), (48, 38759), (78, 38930), (79, 38933), (113, 39155),

Gene: Corofin_42 Start: 38036, Stop: 38761, Start Num: 2

Candidate Starts for Corofin_42:

(1, 37922), (Start: 2 @38036 has 45 MA's), (10, 38108), (37, 38255), (40, 38270), (45, 38333), (47, 38351), (48, 38354), (78, 38525), (79, 38528), (113, 38750),

Gene: D12_32 Start: 35158, Stop: 35868, Start Num: 3

Candidate Starts for D12_32:

(Start: 3 @35158 has 40 MA's), (9, 35197), (24, 35269), (26, 35284), (35, 35347), (41, 35389), (46, 35437), (60, 35527), (62, 35533), (66, 35557), (68, 35575), (73, 35605), (79, 35638), (86, 35674),

(105, 35788),

Gene: Daisy_42 Start: 38037, Stop: 38762, Start Num: 2

Candidate Starts for Daisy_42:

(1, 37923), (Start: 2 @38037 has 45 MA's), (10, 38109), (37, 38256), (40, 38271), (45, 38334), (47, 38352), (48, 38355), (78, 38526), (79, 38529), (113, 38751),

Gene: Deenasa_42 Start: 38772, Stop: 39497, Start Num: 2

Candidate Starts for Deenasa_42:

(1, 38658), (Start: 2 @38772 has 45 MA's), (10, 38844), (37, 38991), (40, 39006), (45, 39069), (47, 39087), (48, 39090), (78, 39261), (79, 39264), (113, 39486),

Gene: Devonte_42 Start: 38001, Stop: 38726, Start Num: 2

Candidate Starts for Devonte_42:

(1, 37887), (Start: 2 @38001 has 45 MA's), (10, 38073), (37, 38220), (40, 38235), (45, 38298), (47, 38316), (48, 38319), (78, 38490), (79, 38493), (113, 38715),

Gene: Dori_37 Start: 34528, Stop: 35232, Start Num: 4

Candidate Starts for Dori_37:

(Start: 4 @34528 has 4 MA's), (12, 34591), (16, 34606), (23, 34630), (38, 34732), (39, 34738), (43, 34786), (60, 34894), (68, 34939), (69, 34945), (73, 34969), (85, 35035), (87, 35041), (90, 35053), (93, 35071), (107, 35158), (108, 35161),

Gene: Dre3_28 Start: 23188, Stop: 23892, Start Num: 5

Candidate Starts for Dre3_28:

(Start: 5 @23188 has 28 MA's), (6, 23194), (8, 23224), (36, 23386), (46, 23464), (63, 23551), (66, 23569), (67, 23581), (83, 23668), (85, 23683), (102, 23776),

Gene: Duffington_10 Start: 5197, Stop: 5841, Start Num: 13

Candidate Starts for Duffington_10:

(7, 5161), (Start: 13 @5197 has 16 MA's), (14, 5206), (29, 5263), (30, 5266), (31, 5281), (43, 5374), (54, 5449), (61, 5488), (72, 5545), (96, 5683), (111, 5800), (114, 5824),

Gene: Eaglehorse_43 Start: 38572, Stop: 39267, Start Num: 3

Candidate Starts for Eaglehorse_43:

(Start: 3 @38572 has 40 MA's), (40, 38782), (41, 38797), (51, 38875), (60, 38932), (72, 38998), (73, 39007), (75, 39016), (79, 39037), (97, 39130), (106, 39190), (110, 39214), (112, 39253),

Gene: Eddiemania_9 Start: 4403, Stop: 5047, Start Num: 13

Candidate Starts for Eddiemania_9:

(7, 4367), (Start: 13 @4403 has 16 MA's), (30, 4472), (31, 4487), (43, 4580), (44, 4592), (54, 4655), (61, 4694), (72, 4751), (96, 4889), (111, 5006), (114, 5030),

Gene: EdmundFerry_36 Start: 33130, Stop: 33834, Start Num: 5

Candidate Starts for EdmundFerry_36:

(Start: 5 @33130 has 28 MA's), (19, 33217), (22, 33226), (63, 33493), (66, 33511), (67, 33523), (81, 33601), (83, 33610), (85, 33625), (102, 33718),

Gene: EndAve_10 Start: 5212, Stop: 5856, Start Num: 13

Candidate Starts for EndAve_10:

(7, 5176), (Start: 13 @5212 has 16 MA's), (14, 5221), (29, 5278), (30, 5281), (31, 5296), (43, 5389), (54, 5464), (61, 5503), (72, 5560), (96, 5698), (111, 5815), (114, 5839),

Gene: Evaa_35 Start: 31206, Stop: 31898, Start Num: 5

Candidate Starts for Evaa_35:

(Start: 5 @31206 has 28 MA's), (23, 31308), (28, 31338), (35, 31398), (39, 31419), (40, 31425), (45, 31485), (46, 31488), (67, 31602), (73, 31638), (79, 31668), (85, 31701), (102, 31794), (112, 31884),

Gene: Faze9_42 Start: 38668, Stop: 39363, Start Num: 3

Candidate Starts for Faze9_42:

(Start: 3 @38668 has 40 MA's), (40, 38878), (41, 38893), (51, 38971), (60, 39028), (72, 39094), (73, 39103), (75, 39112), (79, 39133), (97, 39226), (106, 39286), (110, 39310), (112, 39349),

Gene: Fazel_7 Start: 3942, Stop: 4586, Start Num: 13

Candidate Starts for Fazel_7:

(Start: 13 @3942 has 16 MA's), (30, 4011), (31, 4026), (43, 4119), (61, 4233), (72, 4290), (98, 4452), (99, 4455), (111, 4545), (114, 4569),

Gene: Figliar_10 Start: 5221, Stop: 5865, Start Num: 13

Candidate Starts for Figliar_10:

(7, 5185), (Start: 13 @5221 has 16 MA's), (29, 5287), (30, 5290), (31, 5305), (43, 5398), (44, 5410), (54, 5473), (61, 5512), (72, 5569), (96, 5707), (111, 5824), (114, 5848),

Gene: Finch_34 Start: 28684, Stop: 29307, Start Num: 11

Candidate Starts for Finch_34:

(Start: 11 @28684 has 1 MA's), (12, 28690), (21, 28717), (25, 28750), (38, 28828), (46, 28891), (49, 28912), (82, 29086), (85, 29107), (94, 29158),

Gene: FrenchFry_43 Start: 38662, Stop: 39357, Start Num: 3

Candidate Starts for FrenchFry_43:

(Start: 3 @38662 has 40 MA's), (40, 38872), (41, 38887), (51, 38965), (60, 39022), (72, 39088), (73, 39097), (75, 39106), (79, 39127), (97, 39220), (106, 39280), (110, 39304), (112, 39343),

Gene: Fresco_35 Start: 30447, Stop: 31139, Start Num: 5

Candidate Starts for Fresco_35:

(Start: 5 @30447 has 28 MA's), (8, 30483), (35, 30642), (39, 30663), (52, 30765), (63, 30819), (65, 30825), (66, 30831), (71, 30867), (75, 30888), (78, 30906), (79, 30909), (95, 30999), (103, 31041), (111, 31116),

Gene: GTE6_37 Start: 33622, Stop: 34326, Start Num: 5

Candidate Starts for GTE6_37:

(Start: 5 @33622 has 28 MA's), (19, 33709), (22, 33718), (36, 33820), (63, 33985), (66, 34003), (67, 34015), (81, 34093), (83, 34102), (85, 34117), (102, 34210),

Gene: Gadget_43 Start: 38024, Stop: 38749, Start Num: 2

Candidate Starts for Gadget_43:

(1, 37910), (Start: 2 @38024 has 45 MA's), (10, 38096), (37, 38243), (40, 38258), (45, 38321), (47, 38339), (48, 38342), (78, 38513), (79, 38516), (113, 38738),

Gene: Gervas_42 Start: 37991, Stop: 38716, Start Num: 2

Candidate Starts for Gervas_42:

(1, 37877), (Start: 2 @37991 has 45 MA's), (10, 38063), (37, 38210), (40, 38225), (45, 38288), (47, 38306), (48, 38309), (78, 38480), (79, 38483), (113, 38705),

Gene: Gibbous_28 Start: 23188, Stop: 23892, Start Num: 5

Candidate Starts for Gibbous_28:

(Start: 5 @23188 has 28 MA's), (6, 23194), (8, 23224), (36, 23386), (46, 23464), (63, 23551), (66, 23569), (67, 23581), (83, 23668), (85, 23683), (102, 23776), (109, 23824),

Gene: Glass_43 Start: 38662, Stop: 39357, Start Num: 3

Candidate Starts for Glass_43:

(Start: 3 @38662 has 40 MA's), (40, 38872), (41, 38887), (51, 38965), (60, 39022), (72, 39088), (73, 39097), (75, 39106), (79, 39127), (97, 39220), (106, 39280), (110, 39304), (112, 39343),

Gene: GlenHope_43 Start: 38004, Stop: 38729, Start Num: 2

Candidate Starts for GlenHope_43:

(1, 37890), (Start: 2 @38004 has 45 MA's), (10, 38076), (37, 38223), (40, 38238), (45, 38301), (47, 38319), (48, 38322), (78, 38493), (79, 38496), (113, 38718),

Gene: GodPhather_34 Start: 35352, Stop: 36062, Start Num: 3

Candidate Starts for GodPhather_34:

(Start: 3 @35352 has 40 MA's), (9, 35391), (24, 35463), (26, 35478), (35, 35541), (41, 35583), (46, 35631), (60, 35721), (62, 35727), (66, 35751), (68, 35769), (73, 35799), (79, 35832), (86, 35868), (105, 35982),

Gene: Godines_43 Start: 38604, Stop: 39299, Start Num: 3

Candidate Starts for Godines_43:

(Start: 3 @38604 has 40 MA's), (40, 38814), (41, 38829), (51, 38907), (60, 38964), (72, 39030), (73, 39039), (75, 39048), (79, 39069), (86, 39105), (97, 39162), (106, 39222), (110, 39246), (112, 39285),

Gene: Halfpint_41 Start: 37830, Stop: 38555, Start Num: 2

Candidate Starts for Halfpint_41:

(1, 37716), (Start: 2 @37830 has 45 MA's), (10, 37902), (37, 38049), (40, 38064), (45, 38127), (47, 38145), (48, 38148), (78, 38319), (79, 38322), (113, 38544),

Gene: HarveySr_42 Start: 37997, Stop: 38722, Start Num: 2

Candidate Starts for HarveySr_42:

(1, 37883), (Start: 2 @37997 has 45 MA's), (10, 38069), (37, 38216), (40, 38231), (45, 38294), (47, 38312), (48, 38315), (78, 38486), (79, 38489), (113, 38711),

Gene: Heathcliff_42 Start: 37975, Stop: 38700, Start Num: 2

Candidate Starts for Heathcliff_42:

(1, 37861), (Start: 2 @37975 has 45 MA's), (10, 38047), (37, 38194), (40, 38209), (45, 38272), (47, 38290), (48, 38293), (78, 38464), (79, 38467), (113, 38689),

Gene: Hedgerow_43 Start: 38644, Stop: 39339, Start Num: 3

Candidate Starts for Hedgerow_43:

(Start: 3 @38644 has 40 MA's), (40, 38854), (41, 38869), (51, 38947), (60, 39004), (72, 39070), (73, 39079), (75, 39088), (79, 39109), (97, 39202), (106, 39262), (110, 39286), (112, 39325),

Gene: Holeinone_43 Start: 38524, Stop: 39219, Start Num: 3

Candidate Starts for Holeinone_43:

(Start: 3 @38524 has 40 MA's), (40, 38734), (41, 38749), (51, 38827), (60, 38884), (72, 38950), (73, 38959), (75, 38968), (79, 38989), (97, 39082), (106, 39142), (110, 39166), (112, 39205),

Gene: ItsyBitsy1_43 Start: 38526, Stop: 39221, Start Num: 3

Candidate Starts for ItsyBitsy1_43:

(Start: 3 @38526 has 40 MA's), (40, 38736), (41, 38751), (51, 38829), (60, 38886), (72, 38952), (73, 38961), (75, 38970), (79, 38991), (97, 39084), (106, 39144), (110, 39168), (112, 39207),

Gene: Jackstina_39 Start: 37934, Stop: 38659, Start Num: 2

Candidate Starts for Jackstina_39:

(1, 37820), (Start: 2 @37934 has 45 MA's), (10, 38006), (37, 38153), (40, 38168), (45, 38231), (47, 38249), (48, 38252), (78, 38423), (79, 38426), (113, 38648),

Gene: Jeon_33 Start: 35094, Stop: 35804, Start Num: 3

Candidate Starts for Jeon_33:

(Start: 3 @35094 has 40 MA's), (9, 35133), (24, 35205), (26, 35220), (35, 35283), (41, 35325), (46, 35373), (60, 35463), (62, 35469), (66, 35493), (68, 35511), (73, 35541), (79, 35574), (86, 35610), (105, 35724),

Gene: Jodelie19_10 Start: 5215, Stop: 5859, Start Num: 13

Candidate Starts for Jodelie19_10:

(7, 5179), (Start: 13 @5215 has 16 MA's), (30, 5284), (31, 5299), (43, 5392), (44, 5404), (54, 5467), (61, 5506), (72, 5563), (96, 5701), (111, 5818), (114, 5842),

Gene: Kaleb_43 Start: 38659, Stop: 39354, Start Num: 3

Candidate Starts for Kaleb_43:

(Start: 3 @38659 has 40 MA's), (40, 38869), (41, 38884), (51, 38962), (60, 39019), (72, 39085), (73, 39094), (75, 39103), (79, 39124), (97, 39217), (106, 39277), (110, 39301), (112, 39340),

Gene: Kamiyu_42 Start: 37983, Stop: 38708, Start Num: 2

Candidate Starts for Kamiyu_42:

(1, 37869), (Start: 2 @37983 has 45 MA's), (10, 38055), (37, 38202), (40, 38217), (45, 38280), (47, 38298), (48, 38301), (78, 38472), (79, 38475), (113, 38697),

Gene: Kheth_43 Start: 38547, Stop: 39242, Start Num: 3

Candidate Starts for Kheth_43:

(Start: 3 @38547 has 40 MA's), (40, 38757), (41, 38772), (51, 38850), (60, 38907), (72, 38973), (73, 38982), (75, 38991), (79, 39012), (97, 39105), (106, 39165), (110, 39189), (112, 39228),

Gene: Kronus_41 Start: 38593, Stop: 39318, Start Num: 2

Candidate Starts for Kronus_41:

(1, 38479), (Start: 2 @38593 has 45 MA's), (10, 38665), (37, 38812), (40, 38827), (45, 38890), (47, 38908), (48, 38911), (78, 39082), (79, 39085), (113, 39307),

Gene: Kwekel_37 Start: 33062, Stop: 33766, Start Num: 5

Candidate Starts for Kwekel_37:

(Start: 5 @33062 has 28 MA's), (19, 33149), (22, 33158), (63, 33425), (66, 33443), (67, 33455), (81, 33533), (83, 33542), (85, 33557), (102, 33650),

Gene: Lars_43 Start: 38649, Stop: 39344, Start Num: 3

Candidate Starts for Lars_43:

(Start: 3 @38649 has 40 MA's), (40, 38859), (41, 38874), (51, 38952), (60, 39009), (72, 39075), (73, 39084), (75, 39093), (79, 39114), (97, 39207), (106, 39267), (110, 39291), (112, 39330),

Gene: Laurie_42 Start: 38048, Stop: 38743, Start Num: 3

Candidate Starts for Laurie_42:

(Start: 3 @38048 has 40 MA's), (40, 38258), (41, 38273), (51, 38351), (60, 38408), (72, 38474), (73, 38483), (75, 38492), (79, 38513), (97, 38606), (106, 38666), (110, 38690), (112, 38729),

Gene: Lephleur_43 Start: 38542, Stop: 39237, Start Num: 3

Candidate Starts for Lephleur_43:

(Start: 3 @38542 has 40 MA's), (40, 38752), (41, 38767), (51, 38845), (60, 38902), (72, 38968), (73, 38977), (75, 38986), (79, 39007), (97, 39100), (106, 39160), (110, 39184), (112, 39223),

Gene: LestyG_42 Start: 38014, Stop: 38739, Start Num: 2

Candidate Starts for LestyG_42:

(1, 37900), (Start: 2 @38014 has 45 MA's), (10, 38086), (37, 38233), (40, 38248), (45, 38311), (47, 38329), (48, 38332), (78, 38503), (79, 38506), (113, 38728),

Gene: Ligma_35 Start: 30447, Stop: 31139, Start Num: 5

Candidate Starts for Ligma_35:

(Start: 5 @30447 has 28 MA's), (8, 30483), (35, 30642), (39, 30663), (52, 30765), (63, 30819), (65, 30825), (66, 30831), (71, 30867), (75, 30888), (78, 30906), (79, 30909), (95, 30999), (103, 31041), (111, 31116),

Gene: LittleMunchkin_37 Start: 33864, Stop: 34556, Start Num: 5

Candidate Starts for LittleMunchkin_37:

(Start: 5 @33864 has 28 MA's), (8, 33900), (52, 34182), (63, 34236), (66, 34248), (71, 34284), (75, 34305), (77, 34320), (100, 34446),

Gene: LizLemon_43 Start: 38658, Stop: 39353, Start Num: 3

Candidate Starts for LizLemon_43:

(Start: 3 @38658 has 40 MA's), (40, 38868), (41, 38883), (51, 38961), (60, 39018), (72, 39084), (73, 39093), (75, 39102), (79, 39123), (97, 39216), (106, 39276), (110, 39300), (112, 39339),

Gene: MakoManhole_37 Start: 32404, Stop: 33096, Start Num: 5

Candidate Starts for MakoManhole_37:

(Start: 5 @32404 has 28 MA's), (28, 32539), (35, 32599), (46, 32689), (79, 32866), (85, 32899), (91, 32926), (95, 32956), (96, 32959), (101, 32989), (107, 33022),

Gene: Mao1_35 Start: 34444, Stop: 35148, Start Num: 4

Candidate Starts for Mao1_35:

(Start: 4 @34444 has 4 MA's), (12, 34507), (16, 34522), (23, 34546), (38, 34648), (39, 34654), (43, 34702), (60, 34810), (68, 34855), (69, 34861), (73, 34885), (87, 34957), (90, 34969), (93, 34987), (107, 35074), (108, 35077),

Gene: Mariokart_35 Start: 30385, Stop: 31074, Start Num: 5

Candidate Starts for Mariokart_35:

(Start: 5 @30385 has 28 MA's), (31, 30538), (35, 30577), (42, 30625), (43, 30646), (67, 30778), (73, 30814), (75, 30823), (78, 30841), (79, 30844), (80, 30850), (95, 30934), (103, 30976),

Gene: Marley1013_42 Start: 38792, Stop: 39517, Start Num: 2

Candidate Starts for Marley1013_42:

(1, 38678), (Start: 2 @38792 has 45 MA's), (10, 38864), (37, 39011), (40, 39026), (45, 39089), (47, 39107), (48, 39110), (78, 39281), (79, 39284), (113, 39506),

Gene: Mask_36 Start: 34437, Stop: 35141, Start Num: 4

Candidate Starts for Mask_36:

(Start: 4 @34437 has 4 MA's), (12, 34500), (16, 34515), (23, 34539), (38, 34641), (39, 34647), (43, 34695), (60, 34803), (68, 34848), (69, 34854), (73, 34878), (85, 34944), (87, 34950), (90, 34962), (93, 34980), (107, 35067), (108, 35070),

Gene: MasterPo_43 Start: 38545, Stop: 39240, Start Num: 3

Candidate Starts for MasterPo_43:

(Start: 3 @38545 has 40 MA's), (40, 38755), (41, 38770), (51, 38848), (60, 38905), (72, 38971), (73, 38980), (75, 38989), (79, 39010), (97, 39103), (106, 39163), (110, 39187), (112, 39226),

Gene: Megabear_33 Start: 34531, Stop: 35241, Start Num: 3

Candidate Starts for Megabear_33:

(Start: 3 @34531 has 40 MA's), (9, 34570), (24, 34642), (26, 34657), (35, 34720), (41, 34762), (46, 34810), (60, 34900), (62, 34906), (66, 34930), (68, 34948), (73, 34978), (79, 35011), (86, 35047), (105, 35161),

Gene: MmasiCarm_42 Start: 37996, Stop: 38721, Start Num: 2

Candidate Starts for MmasiCarm_42:

(1, 37882), (Start: 2 @37996 has 45 MA's), (10, 38068), (37, 38215), (40, 38230), (45, 38293), (47, 38311), (48, 38314), (78, 38485), (79, 38488), (113, 38710),

Gene: Mortcellus_41 Start: 38648, Stop: 39373, Start Num: 2

Candidate Starts for Mortcellus_41:

(1, 38534), (Start: 2 @38648 has 45 MA's), (10, 38720), (37, 38867), (40, 38882), (45, 38945), (47, 38963), (48, 38966), (78, 39137), (79, 39140), (113, 39362),

Gene: Morty007_42 Start: 38792, Stop: 39517, Start Num: 2

Candidate Starts for Morty007_42:

(1, 38678), (Start: 2 @38792 has 45 MA's), (10, 38864), (37, 39011), (40, 39026), (45, 39089), (47, 39107), (48, 39110), (78, 39281), (79, 39284), (113, 39506),

Gene: MossRose_37 Start: 32383, Stop: 33075, Start Num: 5

Candidate Starts for MossRose_37:

(Start: 5 @32383 has 28 MA's), (28, 32518), (35, 32578), (46, 32668), (79, 32845), (85, 32878), (91, 32905), (95, 32935), (96, 32938), (101, 32968), (107, 33001),

Gene: Mossy_7 Start: 3064, Stop: 3714, Start Num: 13

Candidate Starts for Mossy_7:

(7, 3028), (Start: 13 @3064 has 16 MA's), (27, 3124), (32, 3157), (43, 3247), (46, 3268), (50, 3292), (53, 3313), (54, 3322), (57, 3340), (66, 3382), (72, 3418), (88, 3505),

Gene: NHagos_35 Start: 30942, Stop: 31637, Start Num: 5

Candidate Starts for NHagos_35:

(Start: 5 @30942 has 28 MA's), (23, 31047), (35, 31137), (46, 31227), (52, 31260), (60, 31302), (67, 31341), (71, 31365), (78, 31404), (79, 31407), (88, 31449), (91, 31467), (95, 31497), (101, 31530), (107, 31563),

Gene: Neos5_42 Start: 38807, Stop: 39532, Start Num: 2

Candidate Starts for Neos5_42:

(1, 38693), (Start: 2 @38807 has 45 MA's), (10, 38879), (37, 39026), (40, 39041), (45, 39104), (47, 39122), (48, 39125), (78, 39296), (79, 39299), (113, 39521),

Gene: Nithya_10 Start: 5212, Stop: 5856, Start Num: 13

Candidate Starts for Nithya_10:

(7, 5176), (Start: 13 @5212 has 16 MA's), (14, 5221), (29, 5278), (30, 5281), (31, 5296), (43, 5389), (54, 5464), (61, 5503), (72, 5560), (96, 5698), (111, 5815), (114, 5839),

Gene: Nozo_42 Start: 38772, Stop: 39497, Start Num: 2

Candidate Starts for Nozo_42:

(1, 38658), (Start: 2 @38772 has 45 MA's), (10, 38844), (37, 38991), (40, 39006), (45, 39069), (47, 39087), (48, 39090), (78, 39261), (79, 39264), (113, 39486),

Gene: Obutu_42 Start: 37996, Stop: 38721, Start Num: 2

Candidate Starts for Obutu_42:

(1, 37882), (Start: 2 @37996 has 45 MA's), (10, 38068), (37, 38215), (40, 38230), (45, 38293), (47, 38311), (48, 38314), (78, 38485), (79, 38488), (113, 38710),

Gene: OlgasClover_10 Start: 5212, Stop: 5856, Start Num: 13

Candidate Starts for OlgasClover_10:

(7, 5176), (Start: 13 @5212 has 16 MA's), (30, 5281), (31, 5296), (43, 5389), (44, 5401), (54, 5464), (61, 5503), (72, 5560), (96, 5698), (111, 5815), (114, 5839),

Gene: Opia_43 Start: 38531, Stop: 39226, Start Num: 3

Candidate Starts for Opia_43:

(Start: 3 @38531 has 40 MA's), (40, 38741), (41, 38756), (51, 38834), (60, 38891), (72, 38957), (73, 38966), (75, 38975), (79, 38996), (97, 39089), (106, 39149), (110, 39173), (112, 39212),

Gene: OrangeOswald_42 Start: 38013, Stop: 38738, Start Num: 2

Candidate Starts for OrangeOswald_42:

(1, 37899), (Start: 2 @38013 has 45 MA's), (10, 38085), (37, 38232), (40, 38247), (45, 38310), (47, 38328), (48, 38331), (78, 38502), (79, 38505), (113, 38727),

Gene: PR_33 Start: 35135, Stop: 35845, Start Num: 3

Candidate Starts for PR_33:

(Start: 3 @35135 has 40 MA's), (9, 35174), (24, 35246), (26, 35261), (35, 35324), (41, 35366), (46, 35414), (60, 35504), (62, 35510), (66, 35534), (68, 35552), (73, 35582), (79, 35615), (86, 35651), (105, 35765),

Gene: Phaedrus_40 Start: 37933, Stop: 38658, Start Num: 2

Candidate Starts for Phaedrus_40:

(1, 37819), (Start: 2 @37933 has 45 MA's), (10, 38005), (37, 38152), (40, 38167), (45, 38230), (47, 38248), (48, 38251), (78, 38422), (79, 38425), (113, 38647),

Gene: Phantasmagoria_43 Start: 38543, Stop: 39238, Start Num: 3

Candidate Starts for Phantasmagoria_43:

(Start: 3 @38543 has 40 MA's), (40, 38753), (41, 38768), (51, 38846), (60, 38903), (72, 38969), (73, 38978), (75, 38987), (79, 39008), (97, 39101), (106, 39161), (110, 39185), (112, 39224),

Gene: Phayeta_43 Start: 37878, Stop: 38603, Start Num: 2

Candidate Starts for Phayeta_43:

(1, 37764), (Start: 2 @37878 has 45 MA's), (10, 37950), (37, 38097), (40, 38112), (45, 38175), (47, 38193), (48, 38196), (78, 38367), (79, 38370), (113, 38592),

Gene: Philly_41 Start: 37864, Stop: 38589, Start Num: 2

Candidate Starts for Philly_41:

(1, 37750), (Start: 2 @37864 has 45 MA's), (10, 37936), (37, 38083), (40, 38098), (45, 38161), (47, 38179), (48, 38182), (78, 38353), (79, 38356), (113, 38578),

Gene: Phlyer_42 Start: 38752, Stop: 39477, Start Num: 2

Candidate Starts for Phlyer_42:

(1, 38638), (Start: 2 @38752 has 45 MA's), (10, 38824), (37, 38971), (40, 38986), (45, 39049), (47, 39067), (48, 39070), (78, 39241), (79, 39244), (113, 39466),

Gene: Pipefish_44 Start: 39405, Stop: 40130, Start Num: 2

Candidate Starts for Pipefish_44:

(1, 39291), (Start: 2 @39405 has 45 MA's), (10, 39477), (37, 39624), (40, 39639), (45, 39702), (47, 39720), (48, 39723), (78, 39894), (79, 39897), (113, 40119),

Gene: Qyrzula_40 Start: 38689, Stop: 39384, Start Num: 3

Candidate Starts for Qyrzula_40:

(Start: 3 @38689 has 40 MA's), (41, 38914), (51, 38992), (60, 39049), (72, 39115), (73, 39124), (75, 39133), (79, 39154), (97, 39247), (106, 39307), (110, 39331), (112, 39370),

Gene: RagingRooster_42 Start: 38014, Stop: 38739, Start Num: 2

Candidate Starts for RagingRooster_42:

(1, 37900), (Start: 2 @38014 has 45 MA's), (10, 38086), (37, 38233), (40, 38248), (45, 38311), (47, 38329), (48, 38332), (78, 38503), (79, 38506), (113, 38728),

Gene: Refuge_9 Start: 5854, Stop: 6480, Start Num: 15

Candidate Starts for Refuge_9:

(Start: 15 @5854 has 1 MA's), (18, 5863), (20, 5866), (78, 6235), (84, 6265), (95, 6331), (108, 6403),

Gene: Rhinoforte_43 Start: 38652, Stop: 39347, Start Num: 3

Candidate Starts for Rhinoforte_43:

(Start: 3 @38652 has 40 MA's), (40, 38862), (41, 38877), (51, 38955), (60, 39012), (72, 39078), (73, 39087), (75, 39096), (79, 39117), (97, 39210), (106, 39270), (110, 39294), (112, 39333),

Gene: Rickmore_9 Start: 3777, Stop: 4421, Start Num: 13

Candidate Starts for Rickmore_9:

(7, 3741), (Start: 13 @3777 has 16 MA's), (30, 3846), (43, 3954), (56, 4041), (72, 4125), (96, 4263), (111, 4380), (114, 4404),

Gene: Rita1961_42 Start: 37997, Stop: 38722, Start Num: 2

Candidate Starts for Rita1961_42:

(1, 37883), (Start: 2 @37997 has 45 MA's), (10, 38069), (37, 38216), (40, 38231), (45, 38294), (47, 38312), (48, 38315), (78, 38486), (79, 38489), (113, 38711),

Gene: RoadKill_35 Start: 32625, Stop: 33329, Start Num: 5

Candidate Starts for RoadKill_35:

(Start: 5 @32625 has 28 MA's), (19, 32712), (22, 32721), (63, 32988), (66, 33006), (67, 33018), (81, 33096), (83, 33105), (85, 33120), (102, 33213),

Gene: RomaT_42 Start: 38787, Stop: 39512, Start Num: 2

Candidate Starts for RomaT_42:

(1, 38673), (Start: 2 @38787 has 45 MA's), (10, 38859), (37, 39006), (40, 39021), (45, 39084), (47, 39102), (48, 39105), (78, 39276), (79, 39279), (113, 39501),

Gene: Rosebush_42 Start: 38659, Stop: 39354, Start Num: 3

Candidate Starts for Rosebush_42:

(Start: 3 @38659 has 40 MA's), (40, 38869), (41, 38884), (51, 38962), (60, 39019), (72, 39085), (73, 39094), (75, 39103), (79, 39124), (97, 39217), (106, 39277), (110, 39301), (112, 39340),

Gene: Sabella_42 Start: 38536, Stop: 39231, Start Num: 3

Candidate Starts for Sabella_42:

(Start: 3 @38536 has 40 MA's), (40, 38746), (41, 38761), (51, 38839), (60, 38896), (72, 38962), (73, 38971), (75, 38980), (79, 39001), (97, 39094), (106, 39154), (110, 39178), (112, 39217),

Gene: Schwartz33_10 Start: 5228, Stop: 5884, Start Num: 13

Candidate Starts for Schwartz33_10:

(7, 5195), (Start: 13 @5228 has 16 MA's), (27, 5294), (30, 5309), (34, 5345), (43, 5417), (55, 5495), (59, 5525), (60, 5528), (64, 5543), (72, 5588), (74, 5600), (92, 5699), (106, 5789), (108, 5795), (111, 5843), (114, 5867),

Gene: Secretariat_6 Start: 2831, Stop: 3490, Start Num: 13

Candidate Starts for Secretariat_6:

(Start: 13 @2831 has 16 MA's), (33, 2933), (46, 3038), (49, 3059), (53, 3083), (54, 3092), (60, 3128), (61, 3131), (63, 3140), (66, 3152), (70, 3185), (76, 3224), (98, 3356),

Gene: Sejanus_36 Start: 35378, Stop: 36082, Start Num: 4

Candidate Starts for Sejanus_36:

(Start: 4 @35378 has 4 MA's), (12, 35441), (16, 35456), (23, 35480), (38, 35582), (39, 35588), (43, 35636), (60, 35744), (68, 35789), (69, 35795), (73, 35819), (85, 35885), (87, 35891), (90, 35903), (93, 35921), (107, 36008), (108, 36011),

Gene: Shatter_35 Start: 30447, Stop: 31139, Start Num: 5

Candidate Starts for Shatter_35:

(Start: 5 @30447 has 28 MA's), (8, 30483), (35, 30642), (39, 30663), (52, 30765), (63, 30819), (65, 30825), (66, 30831), (71, 30867), (75, 30888), (78, 30906), (79, 30909), (95, 30999), (103, 31041), (111, 31116),

Gene: Sisko_35 Start: 31297, Stop: 31995, Start Num: 5

Candidate Starts for Sisko_35:

(Start: 5 @31297 has 28 MA's), (43, 31561), (63, 31669), (66, 31681), (67, 31693), (79, 31759),

Gene: SlippinJimmy_42 Start: 38779, Stop: 39504, Start Num: 2

Candidate Starts for SlippinJimmy_42:

(1, 38665), (Start: 2 @38779 has 45 MA's), (10, 38851), (37, 38998), (40, 39013), (45, 39076), (47, 39094), (48, 39097), (78, 39268), (79, 39271), (113, 39493),

Gene: Sour_40 Start: 35182, Stop: 35880, Start Num: 5

Candidate Starts for Sour_40:

(Start: 5 @35182 has 28 MA's), (8, 35218), (43, 35446), (45, 35464), (52, 35500), (63, 35554), (66, 35566), (67, 35578), (73, 35614), (75, 35623), (78, 35641), (98, 35764), (100, 35770),

Gene: SynergyX_42 Start: 38014, Stop: 38739, Start Num: 2

Candidate Starts for SynergyX_42:

(1, 37900), (Start: 2 @38014 has 45 MA's), (10, 38086), (37, 38233), (40, 38248), (45, 38311), (47, 38329), (48, 38332), (78, 38503), (79, 38506), (113, 38728),

Gene: TA17A_43 Start: 38526, Stop: 39221, Start Num: 3

Candidate Starts for TA17A_43:

(Start: 3 @38526 has 40 MA's), (40, 38736), (41, 38751), (51, 38829), (60, 38886), (72, 38952), (73, 38961), (75, 38970), (79, 38991), (97, 39084), (106, 39144), (110, 39168), (112, 39207),

Gene: Taptic_33 Start: 34531, Stop: 35241, Start Num: 3

Candidate Starts for Taptic_33:

(Start: 3 @34531 has 40 MA's), (9, 34570), (24, 34642), (26, 34657), (35, 34720), (41, 34762), (46, 34810), (60, 34900), (62, 34906), (66, 34930), (68, 34948), (73, 34978), (79, 35011), (86, 35047), (105, 35161),

Gene: TenaciousP_10 Start: 5215, Stop: 5859, Start Num: 13

Candidate Starts for TenaciousP_10:

(7, 5179), (Start: 13 @5215 has 16 MA's), (30, 5284), (31, 5299), (43, 5392), (44, 5404), (54, 5467), (61, 5506), (72, 5563), (96, 5701), (111, 5818), (114, 5842),

Gene: Tiamoceli_38 Start: 33958, Stop: 34662, Start Num: 5

Candidate Starts for Tiamoceli_38:

(Start: 5 @33958 has 28 MA's), (19, 34045), (22, 34054), (36, 34156), (63, 34321), (66, 34339), (67, 34351), (81, 34429), (83, 34438), (85, 34453), (102, 34546),

Gene: Tinciduntolum_44 Start: 38664, Stop: 39359, Start Num: 3

Candidate Starts for Tinciduntolum_44:

(Start: 3 @38664 has 40 MA's), (40, 38874), (41, 38889), (51, 38967), (60, 39024), (72, 39090), (73, 39099), (75, 39108), (79, 39129), (97, 39222), (106, 39282), (110, 39306), (112, 39345),

Gene: Tres_43 Start: 38539, Stop: 39234, Start Num: 3

Candidate Starts for Tres_43:

(Start: 3 @38539 has 40 MA's), (40, 38749), (41, 38764), (51, 38842), (60, 38899), (72, 38965), (73, 38974), (75, 38983), (79, 39004), (97, 39097), (106, 39157), (110, 39181), (112, 39220),

Gene: Twonlo_35 Start: 32576, Stop: 33280, Start Num: 5

Candidate Starts for Twonlo_35:

(Start: 5 @32576 has 28 MA's), (19, 32663), (22, 32672), (63, 32939), (66, 32957), (67, 32969), (81, 33047), (83, 33056), (85, 33071), (102, 33164),

Gene: Tydolla_42 Start: 38748, Stop: 39473, Start Num: 2

Candidate Starts for Tydolla_42:

(1, 38634), (Start: 2 @38748 has 45 MA's), (10, 38820), (37, 38967), (40, 38982), (45, 39045), (47, 39063), (48, 39066), (78, 39237), (79, 39240), (113, 39462),

Gene: Vic9_43 Start: 39045, Stop: 39740, Start Num: 3

Candidate Starts for Vic9_43:

(Start: 3 @39045 has 40 MA's), (40, 39255), (41, 39270), (51, 39348), (60, 39405), (72, 39471), (73, 39480), (75, 39489), (79, 39510), (97, 39603), (106, 39663), (110, 39687), (112, 39726),

Gene: West99_43 Start: 38659, Stop: 39354, Start Num: 3

Candidate Starts for West99_43:

(Start: 3 @38659 has 40 MA's), (40, 38869), (41, 38884), (51, 38962), (60, 39019), (72, 39085), (73, 39094), (75, 39103), (79, 39124), (97, 39217), (106, 39277), (110, 39301), (112, 39340),

Gene: Wooper_37 Start: 32392, Stop: 33084, Start Num: 5

Candidate Starts for Wooper_37:

(Start: 5 @32392 has 28 MA's), (35, 32587), (46, 32677), (60, 32752), (71, 32812), (79, 32854), (85, 32887), (91, 32914), (95, 32944), (101, 32977), (107, 33010),

Gene: Yago84_35 Start: 31371, Stop: 32069, Start Num: 5

Candidate Starts for Yago84_35:

(Start: 5 @31371 has 28 MA's), (43, 31635), (63, 31743), (66, 31755), (67, 31767), (79, 31833),

Gene: Yahalom_42 Start: 38024, Stop: 38749, Start Num: 2

Candidate Starts for Yahalom_42:

(1, 37910), (Start: 2 @38024 has 45 MA's), (10, 38096), (37, 38243), (40, 38258), (45, 38321), (47, 38339), (48, 38342), (78, 38513), (79, 38516), (113, 38738),

Gene: Yinz_42 Start: 38050, Stop: 38775, Start Num: 2

Candidate Starts for Yinz_42:

(1, 37936), (Start: 2 @38050 has 45 MA's), (10, 38122), (37, 38269), (40, 38284), (45, 38347), (47, 38365), (48, 38368), (78, 38539), (79, 38542), (113, 38764),