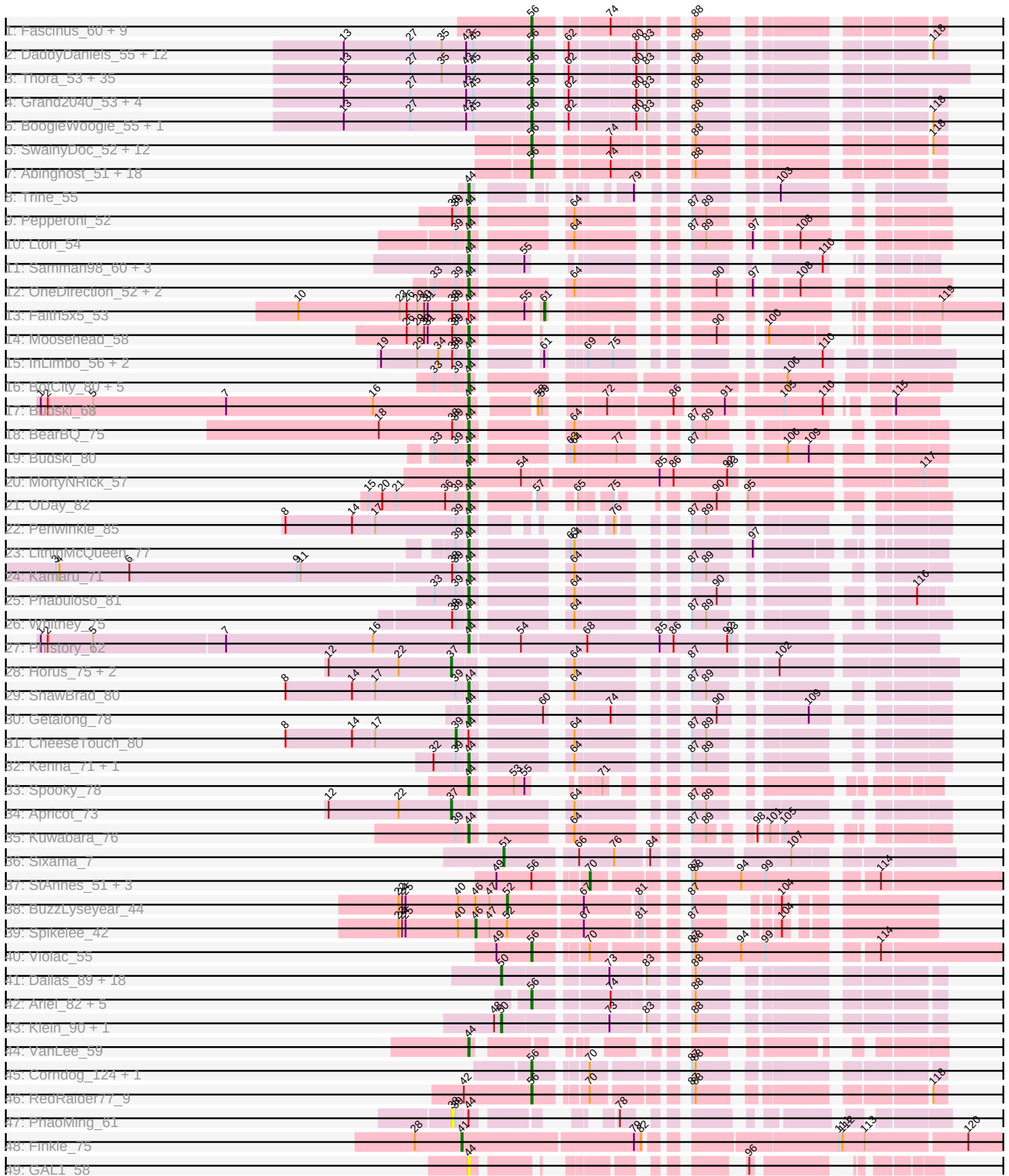


Pham 330516



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 330516 Report

This analysis was run 09/05/26 on database version 662.

Pham number 330516 has 183 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Fascinus_60, Blue_65, Makemake_71, Raid_64, CactusRose_66, Maroc7_64, Graduation_70, Paraselene_66, Bigfoot_58, Carlyle_66
- Track 2 : DaddyDaniels_55, HighStump_55, Childish_53, Soile_54, HenryJackson_53, Brilliant_55, Iridessa_54, Kahve_53, Longacauda_54, Craff_56, Legolas_55, Nicole21_54, Orwigg_53
- Track 3 : Thora_53, Lasso_53, Samaymay_53, Squid_53, Daffy_53, Haleema_52, Fozzie_52, CamL_53, Morgushi_53, Mosaic_52, Potter_52, SassyCat97_52, QueenBeane_53, Sophia_52, Mana_52, Solosis_52, Timmi_52, MitKao_53, LeeLot_53, Puhltonio_53, Maru_53, Serendipity_53, Xavier_52, Cosmolli16_54, TomBombadil_53, TallGrassMM_53, Vortex_53, Held_53, Hertubise_53, Surely_53, Chorkpop_53, Oosterbaan_53, Banjo_52, Zelda_53, Cannibal_53, Kwadwo_52
- Track 4 : Grand2040_53, LeiMonet_55, Giraffe_54, Mesh1_54, Lumine_54
- Track 5 : BoogieWoogie_55, Fringe_57
- Track 6 : SwainyDoc_52, Chentzyk_52, Kronus_51, MmasiCarm_52, Obutu_52, Phayeta_53, Mortcellus_51, Casbah_51, Ben11_51, Gervas_52, Rita1961_52, Mulaychimus_52, TinyTerror_52
- Track 7 : Abinghost_51, Audrey_51, Phlyer_51, Halfpint_50, Nozo_51, Daisy_51, Athena_52, Neos5_51, Kamiyu_51, GlenHope_52, ChaChing_51, OrangeOswald_51, Akoma_51, Glubnar_52, Philly_50, Baloo_51, SynergyX_51, Corofin_51, Chandler_51
- Track 8 : Trine_55
- Track 9 : Pepperoni_52
- Track 10 : Lton_54
- Track 11 : Samman98_60, Invecra_62, Clark_59, Rizz_60
- Track 12 : OneDirection_52, Leroy_74, Holliday_79
- Track 13 : Faith5x5_53
- Track 14 : Moosehead_58
- Track 15 : InLimbo_56, Morkie_59, PhorbesPhlower_55
- Track 16 : BotCity_80, Asapag_74, Ecliptus_80, BENtherdunthat_78, Birdsong_73, Frickyeah_80
- Track 17 : Budski_68
- Track 18 : BearBQ_75
- Track 19 : Budski_80
- Track 20 : MortyNRick_57
- Track 21 : ODay_82
- Track 22 : Periwinkle_85
- Track 23 : LitninMcQueen_77

- Track 24 : Kamaru_71
- Track 25 : Phabuloso_81
- Track 26 : Whitney_75
- Track 27 : Phistory_62
- Track 28 : Horus_75, Phistory_72, Crater_73
- Track 29 : ShawBrad_80
- Track 30 : Getalong_78
- Track 31 : CheeseTouch_80
- Track 32 : Kenna_71, Lutum_77
- Track 33 : Spooky_78
- Track 34 : Apricot_73
- Track 35 : Kuwabara_76
- Track 36 : Sixama_7
- Track 37 : StAnnes_51, Medindi_50, Filuzino_50, IMpilo_49
- Track 38 : BuzzLyseyear_44
- Track 39 : Spikelee_42
- Track 40 : Violac_55
- Track 41 : Dallas_89, Halley_91, Bombitas_78, Dove_75, Zelink_87, JuicyJay_87, DmpstrDiver_90, Odette_88, Schatzie_85, ThreeRngTarjay_87, Constella_75, Phoebe_92, Hughesyang_90, Beem_90, HokkenD_79, Kalah2_84, Yeet_83, Bagrid_89, NihilNomen_91
- Track 42 : Ariel_82, Squint_83, Lucky2013_80, Porcelain_82, Courthouse_78, MiaZeal_83
- Track 43 : Klein_90, Wanda_94
- Track 44 : VanLee_59
- Track 45 : Corndog_124, Smooch_99
- Track 46 : RedRaider77_9
- Track 47 : PhaoMing_61
- Track 48 : Finkle_75
- Track 49 : GAL1_58

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

The start number called the most often in the published annotations is 56, it was called in 108 of the 174 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_51, Akoma_51, Ariel_82, Athena_52, Audrey_51, Baloo_51, Banjo_52, Ben11_51, Bigfoot_58, Blue_65, BoogieWoogie_55, Brilliant_55, CactusRose_66, CamL_53, Cannibal_53, Carlyle_66, Casbah_51, ChaChing_51, Chandler_51, Chentzyk_52, Childish_53, Chorkpop_53, Corndog_124, Corofin_51, Cosmolli16_54, Courthouse_78, Craff_56, DaddyDaniels_55, Daffy_53, Daisy_51, Fascinus_60, Fozzie_52, Fringe_57, Gervas_52, Giraffe_54, GlenHope_52, Glubnar_52, Graduation_70, Grand2040_53, Haleema_52, Halfpint_50, Held_53, HenryJackson_53, Hertubise_53, HighStump_55, Iridessa_54, Kahve_53, Kamiyu_51, Kronus_51, Kwadwo_52, Lasso_53, LeeLot_53, Legolas_55, LeiMonet_55, Longacauda_54, Lucky2013_80, Lumine_54, Makemake_71, Mana_52, Maroc7_64, Maru_53, Mesh1_54, MiaZeal_83, MitKao_53, MmasiCarm_52, Morgushi_53, Mortcellus_51, Mosaic_52, Mulaychimus_52, Neos5_51, Nicole21_54, Nozo_51, Obutu_52, Oosterbaan_53, OrangeOswald_51,

Orwigg_53, Paraselene_66, Phayeta_53, Philly_50, Phlyer_51, Porcelain_82, Potter_52, Puhltonio_53, QueenBeane_53, Raid_64, RedRaider77_9, Rita1961_52, Samaymay_53, SassyCat97_52, Serendipity_53, Smooch_99, Soile_54, Solosis_52, Sophia_52, Squid_53, Squint_83, Surely_53, SwainyDoc_52, SynergyX_51, TallGrassMM_53, Thora_53, Timmi_52, TinyTerror_52, TomBombadil_53, Violac_55, Vortex_53, Xavier_52, Zelda_53,

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

- Filuzino_50, IMpilo_49, Medindi_50, StAnnes_51,

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

- Apricot_73, Asapag_74, BENtherdunthat_78, Bagrid_89, BearBQ_75, Beem_90, Birdsong_73, Bombitas_78, BotCity_80, Budski_68, Budski_80, BuzzLyseyear_44, CheeseTouch_80, Clark_59, Constella_75, Crater_73, Dallas_89, DmpstrDiver_90, Dove_75, Ecliptus_80, Faith5x5_53, Finkle_75, Frickyeh_80, GAL1_58, Getalong_78, Halley_91, HokkenD_79, Holliday_79, Horus_75, Hughesyang_90, InLimbo_56, Invectra_62, JuicyJay_87, Kalah2_84, Kamaru_71, Kenna_71, Klein_90, Kuwabara_76, Leroy_74, LitninMcQueen_77, Lton_54, Lutum_77, Moosehead_58, Morkie_59, MortyNRick_57, NihilNomen_91, ODay_82, Odette_88, OneDirection_52, Pepperoni_52, Periwinkle_85, Phabuloso_81, PhaoMing_61, Phistory_62, Phistory_72, Phoebus_92, PhorbesPhlower_55, Rizz_60, Samman98_60, Schatzie_85, ShawBrad_80, Sixama_7, Spikelee_42, Spooky_78, ThreeRngTarjay_87, Trine_55, VanLee_59, Wanda_94, Whitney_75, Yeet_83, Zelink_87,

Summary by start number:

Start 37:

- Found in 4 of 183 (2.2%) of genes in pham
- Manual Annotations of this start: 4 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot_73 (DN3), Crater_73 (DN3), Horus_75 (DN1), Phistory_72 (DN1),

Start 38:

- Found in 10 of 183 (5.5%) of genes in pham
- No Manual Annotations of this start.
- Called 10.0% of time when present
- Phage (with cluster) where this start called: PhaoMing_61 (UNK),

Start 39:

- Found in 30 of 183 (16.4%) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 3.3% of time when present
- Phage (with cluster) where this start called: CheeseTouch_80 (DN1),

Start 41:

- Found in 1 of 183 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finkle_75 (singleton),

Start 44:

- Found in 42 of 183 (23.0%) of genes in pham
- Manual Annotations of this start: 35 of 174
- Called 92.9% of time when present
- Phage (with cluster) where this start called: Asapag_74 (DN1), BENTherdunthat_78 (DN1), BearBQ_75 (DN), Birdsong_73 (DN), BotCity_80 (DN), Budski_68 (DN), Budski_80 (DN), Clark_59 (CZ4), Ecliptus_80 (DN), Frickyeh_80 (DN1), GAL1_58 (singleton), Getalong_78 (DN1), Holliday_79 (DN1), InLimbo_56 (DH), Invecra_62 (CZ4), Kamaru_71 (DN1), Kenna_71 (DN1), Kuwabara_76 (DN4), Leroy_74 (DN1), LitninMcQueen_77 (DN1), Lton_54 (CZ), Lutum_77 (DN1), Moosehead_58 (CZ6), Morkie_59 (DH), MortyNRick_57 (DN), ODay_82 (DN), OneDirection_52 (CZ6), Pepperoni_52 (CZ), Periwinkle_85 (DN1), Phabuloso_81 (DN1), Phistory_62 (DN1), PhorbesPhlower_55 (DH), Rizz_60 (CZ4), Samman98_60 (CZ4), ShawBrad_80 (DN1), Spooky_78 (DN2), Trine_55 (CD), VanLee_59 (KA), Whitney_75 (DN1),

Start 46:

- Found in 2 of 183 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Spikelee_42 (F1),

Start 50:

- Found in 21 of 183 (11.5%) of genes in pham
- Manual Annotations of this start: 19 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bagrid_89 (J), Beem_90 (J), Bombitas_78 (J), Constella_75 (J), Dallas_89 (J), DmpstrDiver_90 (J), Dove_75 (J), Halley_91 (J), HokkenD_79 (J), Hughesyang_90 (J), JuicyJay_87 (J), Kalah2_84 (J), Klein_90 (J), NihilNomen_91 (J), Odette_88 (J), Phoebus_92 (J), Schatzie_85 (J), ThreeRngTarjay_87 (J), Wanda_94 (J), Yeet_83 (J), Zelink_87 (J),

Start 51:

- Found in 1 of 183 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sixama_7 (DS),

Start 52:

- Found in 2 of 183 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 50.0% of time when present
- Phage (with cluster) where this start called: BuzzLyseyear_44 (F1),

Start 56:

- Found in 112 of 183 (61.2%) of genes in pham
- Manual Annotations of this start: 108 of 174
- Called 96.4% of time when present
- Phage (with cluster) where this start called: Abinghost_51 (B3), Akoma_51 (B3), Ariel_82 (J), Athena_52 (B3), Audrey_51 (B3), Baloo_51 (B3), Banjo_52 (B1), Ben11_51 (B3), Bigfoot_58 (A1), Blue_65 (A1), BoogieWoogie_55 (B1), Brilliant_55 (B1), CactusRose_66 (A1), CamL_53 (B1), Cannibal_53 (B1), Carlyle_66 (A1), Casbah_51 (B3), ChaChing_51 (B3), Chandler_51 (B3), Chentzyk_52 (B3), Childish_53 (B1), Chorkpop_53 (B1), Corndog_124 (O), Corofin_51 (B3), Cosmolli16_54 (B1), Courthouse_78 (J), Craff_56 (B1), DaddyDaniels_55 (B1),

Daffy_53 (B1), Daisy_51 (B3), Fascinus_60 (A1), Fozzie_52 (B1), Fringe_57 (B1), Gervas_52 (B3), Giraffe_54 (B1), GlenHope_52 (B3), Glubnar_52 (B3), Graduation_70 (A1), Grand2040_53 (B1), Haleema_52 (B1), Halfpint_50 (B3), Held_53 (B1), HenryJackson_53 (B1), Hertubise_53 (B1), HighStump_55 (B1), Iridessa_54 (B1), Kahve_53 (B1), Kamiyu_51 (B3), Kronus_51 (B3), Kwadwo_52 (B1), Lasso_53 (B1), LeeLot_53 (B1), Legolas_55 (B1), LeiMonet_55 (B1), Longacauda_54 (B1), Lucky2013_80 (J), Lumine_54 (B1), Makemake_71 (A1), Mana_52 (B1), Maroc7_64 (A1), Maru_53 (B1), Mesh1_54 (B1), MiaZeal_83 (J), MitKao_53 (B1), MmasiCarm_52 (B3), Morgushi_53 (B1), Mortcellus_51 (B3), Mosaic_52 (B1), Mulaychimus_52 (B3), Neos5_51 (B3), Nicole21_54 (B1), Nozo_51 (B3), Obutu_52 (B3), Oosterbaan_53 (B1), OrangeOswald_51 (B3), Orwigg_53 (B1), Paraselene_66 (A1), Phayeta_53 (B3), Philly_50 (B3), Phlyer_51 (B3), Porcelain_82 (J), Potter_52 (B1), Puhltonio_53 (B1), QueenBeane_53 (B1), Raid_64 (A1), RedRaider77_9 (S), Rita1961_52 (B3), Samaymay_53 (B1), SassyCat97_52 (B1), Serendipity_53 (B1), Smooch_99 (O), Soile_54 (B1), Solosis_52 (B1), Sophia_52 (B1), Squid_53 (B1), Squint_83 (J), Surely_53 (B1), SwainyDoc_52 (B3), SynergyX_51 (B3), TallGrassMM_53 (B1), Thora_53 (B1), Timmi_52 (B1), TinyTerror_52 (B3), TomBombadil_53 (B1), Violac_55 (F1), Vortex_53 (B1), Xavier_52 (B1), Zelda_53 (B1),

Start 61:

- Found in 4 of 183 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Faith5x5_53 (CZ6),

Start 70:

- Found in 8 of 183 (4.4%) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Filuzino_50 (F1), IMpilo_49 (F1), Medindi_50 (F1), StAnnes_51 (F1),

Summary by clusters:

There are 21 clusters represented in this pham: DN, F1, singleton, O, DH, DN4, J, CZ6, KA, CZ4, CD, A1, DN2, S, DN1, B1, DN3, B3, CZ, UNK, DS,

Info for manual annotations of cluster A1:

- Start number 56 was manually annotated 10 times for cluster A1.

Info for manual annotations of cluster B1:

- Start number 56 was manually annotated 56 times for cluster B1.

Info for manual annotations of cluster B3:

- Start number 56 was manually annotated 32 times for cluster B3.

Info for manual annotations of cluster CD:

- Start number 44 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CZ:

- Start number 44 was manually annotated 2 times for cluster CZ.

Info for manual annotations of cluster CZ4:

- Start number 44 was manually annotated 3 times for cluster CZ4.

Info for manual annotations of cluster CZ6:

- Start number 44 was manually annotated 2 times for cluster CZ6.
- Start number 61 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DH:

- Start number 44 was manually annotated 2 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 44 was manually annotated 8 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 37 was manually annotated 2 times for cluster DN1.
- Start number 39 was manually annotated 1 time for cluster DN1.
- Start number 44 was manually annotated 14 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 44 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 37 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 44 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DS:

- Start number 51 was manually annotated 1 time for cluster DS.

Info for manual annotations of cluster F1:

- Start number 46 was manually annotated 1 time for cluster F1.
- Start number 52 was manually annotated 1 time for cluster F1.
- Start number 56 was manually annotated 1 time for cluster F1.
- Start number 70 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster J:

- Start number 50 was manually annotated 19 times for cluster J.
- Start number 56 was manually annotated 6 times for cluster J.

Info for manual annotations of cluster KA:

- Start number 44 was manually annotated 1 time for cluster KA.

Info for manual annotations of cluster O:

- Start number 56 was manually annotated 2 times for cluster O.

Info for manual annotations of cluster S:

- Start number 56 was manually annotated 1 time for cluster S.

Gene Information:

Gene: Abinghost_51 Start: 45404, Stop: 45135, Start Num: 56

Candidate Starts for Abinghost_51:

(Start: 56 @45404 has 108 MA's), (74, 45350), (88, 45302),

Gene: Akoma_51 Start: 45415, Stop: 45146, Start Num: 56

Candidate Starts for Akoma_51:

(Start: 56 @45415 has 108 MA's), (74, 45361), (88, 45313),

Gene: Apricot_73 Start: 42951, Stop: 43250, Start Num: 37

Candidate Starts for Apricot_73:

(12, 42846), (22, 42906), (Start: 37 @42951 has 4 MA's), (64, 43029), (87, 43095), (89, 43107),

Gene: Ariel_82 Start: 49253, Stop: 48984, Start Num: 56

Candidate Starts for Ariel_82:

(Start: 56 @49253 has 108 MA's), (74, 49199), (88, 49151),

Gene: Asapag_74 Start: 43606, Stop: 43938, Start Num: 44

Candidate Starts for Asapag_74:

(33, 43579), (Start: 39 @43597 has 1 MA's), (Start: 44 @43606 has 35 MA's), (106, 43819),

Gene: Athena_52 Start: 46162, Stop: 45893, Start Num: 56

Candidate Starts for Athena_52:

(Start: 56 @46162 has 108 MA's), (74, 46108), (88, 46060),

Gene: Audrey_51 Start: 45410, Stop: 45141, Start Num: 56

Candidate Starts for Audrey_51:

(Start: 56 @45410 has 108 MA's), (74, 45356), (88, 45308),

Gene: BENtherdunthat_78 Start: 44652, Stop: 44984, Start Num: 44

Candidate Starts for BENtherdunthat_78:

(33, 44625), (Start: 39 @44643 has 1 MA's), (Start: 44 @44652 has 35 MA's), (106, 44865),

Gene: Bagrid_89 Start: 55770, Stop: 56066, Start Num: 50

Candidate Starts for Bagrid_89:

(Start: 50 @55770 has 19 MA's), (73, 55848), (83, 55875), (88, 55899),

Gene: Baloo_51 Start: 45413, Stop: 45144, Start Num: 56

Candidate Starts for Baloo_51:

(Start: 56 @45413 has 108 MA's), (74, 45359), (88, 45311),

Gene: Banjo_52 Start: 47062, Stop: 46769, Start Num: 56

Candidate Starts for Banjo_52:

(13, 47221), (27, 47164), (35, 47137), (43, 47116), (45, 47110), (Start: 56 @47062 has 108 MA's), (62, 47038), (80, 46990), (83, 46984), (88, 46960),

Gene: BearBQ_75 Start: 45677, Stop: 45961, Start Num: 44

Candidate Starts for BearBQ_75:

(18, 45602), (38, 45665), (Start: 39 @45668 has 1 MA's), (Start: 44 @45677 has 35 MA's), (64, 45743), (87, 45809), (89, 45821),

Gene: Beem_90 Start: 56631, Stop: 56927, Start Num: 50

Candidate Starts for Beem_90:

(Start: 50 @56631 has 19 MA's), (73, 56709), (83, 56736), (88, 56760),

Gene: Ben11_51 Start: 45695, Stop: 45426, Start Num: 56
Candidate Starts for Ben11_51:
(Start: 56 @45695 has 108 MA's), (74, 45641), (88, 45593), (118, 45437),

Gene: Bigfoot_58 Start: 41545, Stop: 41276, Start Num: 56
Candidate Starts for Bigfoot_58:
(Start: 56 @41545 has 108 MA's), (74, 41491), (88, 41443),

Gene: Birdsong_73 Start: 43342, Stop: 43674, Start Num: 44
Candidate Starts for Birdsong_73:
(33, 43315), (Start: 39 @43333 has 1 MA's), (Start: 44 @43342 has 35 MA's), (106, 43555),

Gene: Blue_65 Start: 43245, Stop: 42976, Start Num: 56
Candidate Starts for Blue_65:
(Start: 56 @43245 has 108 MA's), (74, 43191), (88, 43143),

Gene: Bombitas_78 Start: 53794, Stop: 54090, Start Num: 50
Candidate Starts for Bombitas_78:
(Start: 50 @53794 has 19 MA's), (73, 53872), (83, 53899), (88, 53923),

Gene: BoogieWoogie_55 Start: 47637, Stop: 47368, Start Num: 56
Candidate Starts for BoogieWoogie_55:
(13, 47796), (27, 47739), (43, 47691), (45, 47685), (Start: 56 @47637 has 108 MA's), (62, 47613), (80, 47565), (83, 47559), (88, 47535), (118, 47379),

Gene: BotCity_80 Start: 46160, Stop: 46492, Start Num: 44
Candidate Starts for BotCity_80:
(33, 46133), (Start: 39 @46151 has 1 MA's), (Start: 44 @46160 has 35 MA's), (106, 46373),

Gene: Brilliant_55 Start: 47604, Stop: 47335, Start Num: 56
Candidate Starts for Brilliant_55:
(13, 47763), (27, 47706), (35, 47679), (43, 47658), (45, 47652), (Start: 56 @47604 has 108 MA's), (62, 47580), (80, 47532), (83, 47526), (88, 47502), (118, 47346),

Gene: Budski_68 Start: 41006, Stop: 41320, Start Num: 44
Candidate Starts for Budski_68:
(1, 40640), (2, 40646), (5, 40685), (7, 40799), (16, 40925), (Start: 44 @41006 has 35 MA's), (58, 41048), (59, 41051), (72, 41087), (86, 41138), (91, 41174), (105, 41216), (110, 41249), (115, 41285),

Gene: Budski_80 Start: 45490, Stop: 45795, Start Num: 44
Candidate Starts for Budski_80:
(33, 45463), (Start: 39 @45481 has 1 MA's), (Start: 44 @45490 has 35 MA's), (63, 45553), (64, 45556), (77, 45589), (87, 45622), (106, 45685), (109, 45703),

Gene: BuzzLyseyear_44 Start: 32289, Stop: 32008, Start Num: 52
Candidate Starts for BuzzLyseyear_44:
(22, 32382), (24, 32379), (25, 32376), (40, 32331), (Start: 46 @32316 has 1 MA's), (47, 32304), (Start: 52 @32289 has 1 MA's), (67, 32229), (81, 32187), (87, 32163), (104, 32115),

Gene: CactusRose_66 Start: 42565, Stop: 42296, Start Num: 56
Candidate Starts for CactusRose_66:
(Start: 56 @42565 has 108 MA's), (74, 42511), (88, 42463),

Gene: CamL_53 Start: 47369, Stop: 47076, Start Num: 56

Candidate Starts for CamL_53:

(13, 47528), (27, 47471), (35, 47444), (43, 47423), (45, 47417), (Start: 56 @47369 has 108 MA's), (62, 47345), (80, 47297), (83, 47291), (88, 47267),

Gene: Cannibal_53 Start: 47352, Stop: 47059, Start Num: 56

Candidate Starts for Cannibal_53:

(13, 47511), (27, 47454), (35, 47427), (43, 47406), (45, 47400), (Start: 56 @47352 has 108 MA's), (62, 47328), (80, 47280), (83, 47274), (88, 47250),

Gene: Carlyle_66 Start: 41351, Stop: 41082, Start Num: 56

Candidate Starts for Carlyle_66:

(Start: 56 @41351 has 108 MA's), (74, 41297), (88, 41249),

Gene: Casbah_51 Start: 45725, Stop: 45456, Start Num: 56

Candidate Starts for Casbah_51:

(Start: 56 @45725 has 108 MA's), (74, 45671), (88, 45623), (118, 45467),

Gene: ChaChing_51 Start: 45427, Stop: 45158, Start Num: 56

Candidate Starts for ChaChing_51:

(Start: 56 @45427 has 108 MA's), (74, 45373), (88, 45325),

Gene: Chandler_51 Start: 46194, Stop: 45925, Start Num: 56

Candidate Starts for Chandler_51:

(Start: 56 @46194 has 108 MA's), (74, 46140), (88, 46092),

Gene: CheeseTouch_80 Start: 40886, Stop: 41182, Start Num: 39

Candidate Starts for CheeseTouch_80:

(8, 40742), (14, 40799), (17, 40817), (Start: 39 @40886 has 1 MA's), (Start: 44 @40895 has 35 MA's), (64, 40961), (87, 41027), (89, 41039),

Gene: Chentzyk_52 Start: 46237, Stop: 45968, Start Num: 56

Candidate Starts for Chentzyk_52:

(Start: 56 @46237 has 108 MA's), (74, 46183), (88, 46135), (118, 45979),

Gene: Childish_53 Start: 47631, Stop: 47362, Start Num: 56

Candidate Starts for Childish_53:

(13, 47790), (27, 47733), (35, 47706), (43, 47685), (45, 47679), (Start: 56 @47631 has 108 MA's), (62, 47607), (80, 47559), (83, 47553), (88, 47529), (118, 47373),

Gene: Chorkpop_53 Start: 47108, Stop: 46815, Start Num: 56

Candidate Starts for Chorkpop_53:

(13, 47267), (27, 47210), (35, 47183), (43, 47162), (45, 47156), (Start: 56 @47108 has 108 MA's), (62, 47084), (80, 47036), (83, 47030), (88, 47006),

Gene: Clark_59 Start: 39693, Stop: 39938, Start Num: 44

Candidate Starts for Clark_59:

(Start: 44 @39693 has 35 MA's), (55, 39732), (110, 39882),

Gene: Constella_75 Start: 50768, Stop: 51064, Start Num: 50

Candidate Starts for Constella_75:

(Start: 50 @50768 has 19 MA's), (73, 50846), (83, 50873), (88, 50897),

Gene: Corndog_124 Start: 60770, Stop: 60504, Start Num: 56

Candidate Starts for Corndog_124:

(Start: 56 @60770 has 108 MA's), (Start: 70 @60734 has 2 MA's), (87, 60674), (88, 60671),

Gene: Corofin_51 Start: 45437, Stop: 45168, Start Num: 56

Candidate Starts for Corofin_51:

(Start: 56 @45437 has 108 MA's), (74, 45383), (88, 45335),

Gene: Cosmolli16_54 Start: 47811, Stop: 47542, Start Num: 56

Candidate Starts for Cosmolli16_54:

(13, 47970), (27, 47913), (35, 47886), (43, 47865), (45, 47859), (Start: 56 @47811 has 108 MA's), (62, 47787), (80, 47739), (83, 47733), (88, 47709),

Gene: Courthouse_78 Start: 48853, Stop: 48584, Start Num: 56

Candidate Starts for Courthouse_78:

(Start: 56 @48853 has 108 MA's), (74, 48799), (88, 48751),

Gene: Craff_56 Start: 48056, Stop: 47787, Start Num: 56

Candidate Starts for Craff_56:

(13, 48215), (27, 48158), (35, 48131), (43, 48110), (45, 48104), (Start: 56 @48056 has 108 MA's), (62, 48032), (80, 47984), (83, 47978), (88, 47954), (118, 47798),

Gene: Crater_73 Start: 43346, Stop: 43687, Start Num: 37

Candidate Starts for Crater_73:

(12, 43241), (22, 43301), (Start: 37 @43346 has 4 MA's), (64, 43424), (87, 43490), (102, 43553),

Gene: DaddyDaniels_55 Start: 47588, Stop: 47319, Start Num: 56

Candidate Starts for DaddyDaniels_55:

(13, 47747), (27, 47690), (35, 47663), (43, 47642), (45, 47636), (Start: 56 @47588 has 108 MA's), (62, 47564), (80, 47516), (83, 47510), (88, 47486), (118, 47330),

Gene: Daffy_53 Start: 47094, Stop: 46801, Start Num: 56

Candidate Starts for Daffy_53:

(13, 47253), (27, 47196), (35, 47169), (43, 47148), (45, 47142), (Start: 56 @47094 has 108 MA's), (62, 47070), (80, 47022), (83, 47016), (88, 46992),

Gene: Daisy_51 Start: 45439, Stop: 45170, Start Num: 56

Candidate Starts for Daisy_51:

(Start: 56 @45439 has 108 MA's), (74, 45385), (88, 45337),

Gene: Dallas_89 Start: 55552, Stop: 55848, Start Num: 50

Candidate Starts for Dallas_89:

(Start: 50 @55552 has 19 MA's), (73, 55630), (83, 55657), (88, 55681),

Gene: DmpstrDiver_90 Start: 55966, Stop: 56262, Start Num: 50

Candidate Starts for DmpstrDiver_90:

(Start: 50 @55966 has 19 MA's), (73, 56044), (83, 56071), (88, 56095),

Gene: Dove_75 Start: 52060, Stop: 52356, Start Num: 50

Candidate Starts for Dove_75:

(Start: 50 @52060 has 19 MA's), (73, 52138), (83, 52165), (88, 52189),

Gene: Ecliptus_80 Start: 46255, Stop: 46587, Start Num: 44

Candidate Starts for Ecliptus_80:

(33, 46228), (Start: 39 @46246 has 1 MA's), (Start: 44 @46255 has 35 MA's), (106, 46468),

Gene: Faith5x5_53 Start: 34268, Stop: 34585, Start Num: 61

Candidate Starts for Faith5x5_53:

(10, 34076), (23, 34163), (26, 34169), (29, 34178), (30, 34184), (31, 34187), (38, 34208), (Start: 39 @34211 has 1 MA's), (Start: 44 @34220 has 35 MA's), (55, 34259), (Start: 61 @34268 has 1 MA's), (119, 34496),

Gene: Fascinus_60 Start: 42059, Stop: 41790, Start Num: 56

Candidate Starts for Fascinus_60:

(Start: 56 @42059 has 108 MA's), (74, 42005), (88, 41957),

Gene: Filuzino_50 Start: 36021, Stop: 36323, Start Num: 70

Candidate Starts for Filuzino_50:

(49, 35955), (Start: 56 @35985 has 108 MA's), (Start: 70 @36021 has 2 MA's), (87, 36081), (88, 36084), (94, 36123), (99, 36144), (114, 36222),

Gene: Finkle_75 Start: 44664, Stop: 45092, Start Num: 41

Candidate Starts for Finkle_75:

(28, 44625), (Start: 41 @44664 has 1 MA's), (79, 44805), (82, 44811), (111, 44952), (112, 44955), (113, 44973), (120, 45057),

Gene: Fozzie_52 Start: 47398, Stop: 47105, Start Num: 56

Candidate Starts for Fozzie_52:

(13, 47557), (27, 47500), (35, 47473), (43, 47452), (45, 47446), (Start: 56 @47398 has 108 MA's), (62, 47374), (80, 47326), (83, 47320), (88, 47296),

Gene: Frickyeh_80 Start: 44783, Stop: 45115, Start Num: 44

Candidate Starts for Frickyeh_80:

(33, 44756), (Start: 39 @44774 has 1 MA's), (Start: 44 @44783 has 35 MA's), (106, 44996),

Gene: Fringe_57 Start: 48533, Stop: 48264, Start Num: 56

Candidate Starts for Fringe_57:

(13, 48692), (27, 48635), (43, 48587), (45, 48581), (Start: 56 @48533 has 108 MA's), (62, 48509), (80, 48461), (83, 48455), (88, 48431), (118, 48275),

Gene: GAL1_58 Start: 39448, Stop: 39708, Start Num: 44

Candidate Starts for GAL1_58:

(Start: 44 @39448 has 35 MA's), (96, 39592),

Gene: Gervas_52 Start: 45854, Stop: 45585, Start Num: 56

Candidate Starts for Gervas_52:

(Start: 56 @45854 has 108 MA's), (74, 45800), (88, 45752), (118, 45596),

Gene: Getalong_78 Start: 45864, Stop: 46163, Start Num: 44

Candidate Starts for Getalong_78:

(Start: 44 @45864 has 35 MA's), (60, 45918), (74, 45957), (90, 46014), (109, 46071),

Gene: Giraffe_54 Start: 47592, Stop: 47323, Start Num: 56

Candidate Starts for Giraffe_54:

(13, 47751), (27, 47694), (43, 47646), (45, 47640), (Start: 56 @47592 has 108 MA's), (62, 47568), (80, 47520), (83, 47514), (88, 47490),

Gene: GlenHope_52 Start: 45405, Stop: 45136, Start Num: 56

Candidate Starts for GlenHope_52:

(Start: 56 @45405 has 108 MA's), (74, 45351), (88, 45303),

Gene: Glubnar_52 Start: 45405, Stop: 45136, Start Num: 56

Candidate Starts for Glubnar_52:

(Start: 56 @45405 has 108 MA's), (74, 45351), (88, 45303),

Gene: Graduation_70 Start: 43891, Stop: 43622, Start Num: 56

Candidate Starts for Graduation_70:

(Start: 56 @43891 has 108 MA's), (74, 43837), (88, 43789),

Gene: Grand2040_53 Start: 47586, Stop: 47317, Start Num: 56

Candidate Starts for Grand2040_53:

(13, 47745), (27, 47688), (43, 47640), (45, 47634), (Start: 56 @47586 has 108 MA's), (62, 47562), (80, 47514), (83, 47508), (88, 47484),

Gene: Haleema_52 Start: 47090, Stop: 46797, Start Num: 56

Candidate Starts for Haleema_52:

(13, 47249), (27, 47192), (35, 47165), (43, 47144), (45, 47138), (Start: 56 @47090 has 108 MA's), (62, 47066), (80, 47018), (83, 47012), (88, 46988),

Gene: Halfpint_50 Start: 45230, Stop: 44961, Start Num: 56

Candidate Starts for Halfpint_50:

(Start: 56 @45230 has 108 MA's), (74, 45176), (88, 45128),

Gene: Halley_91 Start: 56631, Stop: 56927, Start Num: 50

Candidate Starts for Halley_91:

(Start: 50 @56631 has 19 MA's), (73, 56709), (83, 56736), (88, 56760),

Gene: Held_53 Start: 47095, Stop: 46802, Start Num: 56

Candidate Starts for Held_53:

(13, 47254), (27, 47197), (35, 47170), (43, 47149), (45, 47143), (Start: 56 @47095 has 108 MA's), (62, 47071), (80, 47023), (83, 47017), (88, 46993),

Gene: HenryJackson_53 Start: 47620, Stop: 47351, Start Num: 56

Candidate Starts for HenryJackson_53:

(13, 47779), (27, 47722), (35, 47695), (43, 47674), (45, 47668), (Start: 56 @47620 has 108 MA's), (62, 47596), (80, 47548), (83, 47542), (88, 47518), (118, 47362),

Gene: Hertubise_53 Start: 47387, Stop: 47094, Start Num: 56

Candidate Starts for Hertubise_53:

(13, 47546), (27, 47489), (35, 47462), (43, 47441), (45, 47435), (Start: 56 @47387 has 108 MA's), (62, 47363), (80, 47315), (83, 47309), (88, 47285),

Gene: HighStump_55 Start: 48156, Stop: 47887, Start Num: 56

Candidate Starts for HighStump_55:

(13, 48315), (27, 48258), (35, 48231), (43, 48210), (45, 48204), (Start: 56 @48156 has 108 MA's), (62, 48132), (80, 48084), (83, 48078), (88, 48054), (118, 47898),

Gene: HokkenD_79 Start: 54900, Stop: 55196, Start Num: 50
Candidate Starts for HokkenD_79:
(Start: 50 @54900 has 19 MA's), (73, 54978), (83, 55005), (88, 55029),

Gene: Holliday_79 Start: 47725, Stop: 48021, Start Num: 44
Candidate Starts for Holliday_79:
(33, 47698), (Start: 39 @47716 has 1 MA's), (Start: 44 @47725 has 35 MA's), (64, 47791), (90, 47878),
(97, 47896), (108, 47923),

Gene: Horus_75 Start: 45413, Stop: 45754, Start Num: 37
Candidate Starts for Horus_75:
(12, 45308), (22, 45368), (Start: 37 @45413 has 4 MA's), (64, 45491), (87, 45557), (102, 45620),

Gene: Hughesyang_90 Start: 56589, Stop: 56885, Start Num: 50
Candidate Starts for Hughesyang_90:
(Start: 50 @56589 has 19 MA's), (73, 56667), (83, 56694), (88, 56718),

Gene: IMpilo_49 Start: 35464, Stop: 35766, Start Num: 70
Candidate Starts for IMpilo_49:
(49, 35398), (Start: 56 @35428 has 108 MA's), (Start: 70 @35464 has 2 MA's), (87, 35524), (88,
35527), (94, 35566), (99, 35587), (114, 35665),

Gene: InLimbo_56 Start: 35600, Stop: 35902, Start Num: 44
Candidate Starts for InLimbo_56:
(19, 35528), (29, 35558), (34, 35576), (38, 35588), (Start: 39 @35591 has 1 MA's), (Start: 44 @35600
has 35 MA's), (Start: 61 @35648 has 1 MA's), (69, 35666), (75, 35687), (110, 35810),

Gene: Invecetra_62 Start: 41266, Stop: 41511, Start Num: 44
Candidate Starts for Invecetra_62:
(Start: 44 @41266 has 35 MA's), (55, 41305), (110, 41455),

Gene: Iridessa_54 Start: 47600, Stop: 47331, Start Num: 56
Candidate Starts for Iridessa_54:
(13, 47759), (27, 47702), (35, 47675), (43, 47654), (45, 47648), (Start: 56 @47600 has 108 MA's), (62,
47576), (80, 47528), (83, 47522), (88, 47498), (118, 47342),

Gene: JuicyJay_87 Start: 57765, Stop: 58061, Start Num: 50
Candidate Starts for JuicyJay_87:
(Start: 50 @57765 has 19 MA's), (73, 57843), (83, 57870), (88, 57894),

Gene: Kahve_53 Start: 47617, Stop: 47348, Start Num: 56
Candidate Starts for Kahve_53:
(13, 47776), (27, 47719), (35, 47692), (43, 47671), (45, 47665), (Start: 56 @47617 has 108 MA's), (62,
47593), (80, 47545), (83, 47539), (88, 47515), (118, 47359),

Gene: Kalah2_84 Start: 55924, Stop: 56220, Start Num: 50
Candidate Starts for Kalah2_84:
(Start: 50 @55924 has 19 MA's), (73, 56002), (83, 56029), (88, 56053),

Gene: Kamaru_71 Start: 43317, Stop: 43604, Start Num: 44
Candidate Starts for Kamaru_71:
(3, 42969), (4, 42972), (6, 43032), (9, 43176), (11, 43179), (38, 43305), (Start: 39 @43308 has 1 MA's),
(Start: 44 @43317 has 35 MA's), (64, 43383), (87, 43449), (89, 43461),

Gene: Kamiyu_51 Start: 45383, Stop: 45114, Start Num: 56

Candidate Starts for Kamiyu_51:

(Start: 56 @45383 has 108 MA's), (74, 45329), (88, 45281),

Gene: Kenna_71 Start: 43390, Stop: 43677, Start Num: 44

Candidate Starts for Kenna_71:

(32, 43363), (Start: 39 @43381 has 1 MA's), (Start: 44 @43390 has 35 MA's), (64, 43456), (87, 43522), (89, 43534),

Gene: Klein_90 Start: 55600, Stop: 55896, Start Num: 50

Candidate Starts for Klein_90:

(48, 55594), (Start: 50 @55600 has 19 MA's), (73, 55678), (83, 55705), (88, 55729),

Gene: Kronus_51 Start: 46457, Stop: 46188, Start Num: 56

Candidate Starts for Kronus_51:

(Start: 56 @46457 has 108 MA's), (74, 46403), (88, 46355), (118, 46199),

Gene: Kuwabara_76 Start: 45678, Stop: 45968, Start Num: 44

Candidate Starts for Kuwabara_76:

(Start: 39 @45669 has 1 MA's), (Start: 44 @45678 has 35 MA's), (64, 45744), (87, 45810), (89, 45822), (98, 45843), (101, 45849), (105, 45858),

Gene: Kwadwo_52 Start: 47069, Stop: 46776, Start Num: 56

Candidate Starts for Kwadwo_52:

(13, 47228), (27, 47171), (35, 47144), (43, 47123), (45, 47117), (Start: 56 @47069 has 108 MA's), (62, 47045), (80, 46997), (83, 46991), (88, 46967),

Gene: Lasso_53 Start: 47344, Stop: 47051, Start Num: 56

Candidate Starts for Lasso_53:

(13, 47503), (27, 47446), (35, 47419), (43, 47398), (45, 47392), (Start: 56 @47344 has 108 MA's), (62, 47320), (80, 47272), (83, 47266), (88, 47242),

Gene: LeeLot_53 Start: 47396, Stop: 47103, Start Num: 56

Candidate Starts for LeeLot_53:

(13, 47555), (27, 47498), (35, 47471), (43, 47450), (45, 47444), (Start: 56 @47396 has 108 MA's), (62, 47372), (80, 47324), (83, 47318), (88, 47294),

Gene: Legolas_55 Start: 48053, Stop: 47784, Start Num: 56

Candidate Starts for Legolas_55:

(13, 48212), (27, 48155), (35, 48128), (43, 48107), (45, 48101), (Start: 56 @48053 has 108 MA's), (62, 48029), (80, 47981), (83, 47975), (88, 47951), (118, 47795),

Gene: LeiMonet_55 Start: 47572, Stop: 47303, Start Num: 56

Candidate Starts for LeiMonet_55:

(13, 47731), (27, 47674), (43, 47626), (45, 47620), (Start: 56 @47572 has 108 MA's), (62, 47548), (80, 47500), (83, 47494), (88, 47470),

Gene: Leroy_74 Start: 43665, Stop: 43955, Start Num: 44

Candidate Starts for Leroy_74:

(33, 43638), (Start: 39 @43656 has 1 MA's), (Start: 44 @43665 has 35 MA's), (64, 43731), (90, 43818), (97, 43836), (108, 43863),

Gene: LitninMcQueen_77 Start: 44377, Stop: 44670, Start Num: 44
Candidate Starts for LitninMcQueen_77:
(Start: 39 @44368 has 1 MA's), (Start: 44 @44377 has 35 MA's), (63, 44440), (64, 44443), (97, 44548),

Gene: Longacauda_54 Start: 48016, Stop: 47747, Start Num: 56
Candidate Starts for Longacauda_54:
(13, 48175), (27, 48118), (35, 48091), (43, 48070), (45, 48064), (Start: 56 @48016 has 108 MA's), (62, 47992), (80, 47944), (83, 47938), (88, 47914), (118, 47758),

Gene: Lton_54 Start: 33162, Stop: 33458, Start Num: 44
Candidate Starts for Lton_54:
(Start: 39 @33153 has 1 MA's), (Start: 44 @33162 has 35 MA's), (64, 33228), (87, 33294), (89, 33306), (97, 33333), (108, 33360),

Gene: Lucky2013_80 Start: 49269, Stop: 49000, Start Num: 56
Candidate Starts for Lucky2013_80:
(Start: 56 @49269 has 108 MA's), (74, 49215), (88, 49167),

Gene: Lumine_54 Start: 47804, Stop: 47535, Start Num: 56
Candidate Starts for Lumine_54:
(13, 47963), (27, 47906), (43, 47858), (45, 47852), (Start: 56 @47804 has 108 MA's), (62, 47780), (80, 47732), (83, 47726), (88, 47702),

Gene: Lutum_77 Start: 44553, Stop: 44840, Start Num: 44
Candidate Starts for Lutum_77:
(32, 44526), (Start: 39 @44544 has 1 MA's), (Start: 44 @44553 has 35 MA's), (64, 44619), (87, 44685), (89, 44697),

Gene: Makemake_71 Start: 44586, Stop: 44317, Start Num: 56
Candidate Starts for Makemake_71:
(Start: 56 @44586 has 108 MA's), (74, 44532), (88, 44484),

Gene: Mana_52 Start: 47084, Stop: 46791, Start Num: 56
Candidate Starts for Mana_52:
(13, 47243), (27, 47186), (35, 47159), (43, 47138), (45, 47132), (Start: 56 @47084 has 108 MA's), (62, 47060), (80, 47012), (83, 47006), (88, 46982),

Gene: Maroc7_64 Start: 43049, Stop: 42780, Start Num: 56
Candidate Starts for Maroc7_64:
(Start: 56 @43049 has 108 MA's), (74, 42995), (88, 42947),

Gene: Maru_53 Start: 47523, Stop: 47254, Start Num: 56
Candidate Starts for Maru_53:
(13, 47682), (27, 47625), (35, 47598), (43, 47577), (45, 47571), (Start: 56 @47523 has 108 MA's), (62, 47499), (80, 47451), (83, 47445), (88, 47421),

Gene: Medindi_50 Start: 35302, Stop: 35604, Start Num: 70
Candidate Starts for Medindi_50:
(49, 35236), (Start: 56 @35266 has 108 MA's), (Start: 70 @35302 has 2 MA's), (87, 35362), (88, 35365), (94, 35404), (99, 35425), (114, 35503),

Gene: Mesh1_54 Start: 47616, Stop: 47323, Start Num: 56
Candidate Starts for Mesh1_54:

(13, 47775), (27, 47718), (43, 47670), (45, 47664), (Start: 56 @47616 has 108 MA's), (62, 47592), (80, 47544), (83, 47538), (88, 47514),

Gene: MiaZeal_83 Start: 49925, Stop: 49656, Start Num: 56

Candidate Starts for MiaZeal_83:

(Start: 56 @49925 has 108 MA's), (74, 49871), (88, 49823),

Gene: MitKao_53 Start: 47094, Stop: 46801, Start Num: 56

Candidate Starts for MitKao_53:

(13, 47253), (27, 47196), (35, 47169), (43, 47148), (45, 47142), (Start: 56 @47094 has 108 MA's), (62, 47070), (80, 47022), (83, 47016), (88, 46992),

Gene: MmasiCarm_52 Start: 45904, Stop: 45635, Start Num: 56

Candidate Starts for MmasiCarm_52:

(Start: 56 @45904 has 108 MA's), (74, 45850), (88, 45802), (118, 45646),

Gene: Moosehead_58 Start: 34673, Stop: 34924, Start Num: 44

Candidate Starts for Moosehead_58:

(26, 34622), (29, 34631), (30, 34637), (31, 34640), (38, 34661), (Start: 39 @34664 has 1 MA's), (Start: 44 @34673 has 35 MA's), (90, 34805), (100, 34823),

Gene: Morgushi_53 Start: 47083, Stop: 46790, Start Num: 56

Candidate Starts for Morgushi_53:

(13, 47242), (27, 47185), (35, 47158), (43, 47137), (45, 47131), (Start: 56 @47083 has 108 MA's), (62, 47059), (80, 47011), (83, 47005), (88, 46981),

Gene: Morkie_59 Start: 36074, Stop: 36376, Start Num: 44

Candidate Starts for Morkie_59:

(19, 36002), (29, 36032), (34, 36050), (38, 36062), (Start: 39 @36065 has 1 MA's), (Start: 44 @36074 has 35 MA's), (Start: 61 @36122 has 1 MA's), (69, 36140), (75, 36161), (110, 36284),

Gene: Mortcellus_51 Start: 46511, Stop: 46242, Start Num: 56

Candidate Starts for Mortcellus_51:

(Start: 56 @46511 has 108 MA's), (74, 46457), (88, 46409), (118, 46253),

Gene: MortyNRick_57 Start: 40191, Stop: 40568, Start Num: 44

Candidate Starts for MortyNRick_57:

(Start: 44 @40191 has 35 MA's), (54, 40236), (85, 40344), (86, 40356), (92, 40401), (93, 40404), (117, 40551),

Gene: Mosaic_52 Start: 47088, Stop: 46795, Start Num: 56

Candidate Starts for Mosaic_52:

(13, 47247), (27, 47190), (35, 47163), (43, 47142), (45, 47136), (Start: 56 @47088 has 108 MA's), (62, 47064), (80, 47016), (83, 47010), (88, 46986),

Gene: Mulaychimus_52 Start: 45840, Stop: 45571, Start Num: 56

Candidate Starts for Mulaychimus_52:

(Start: 56 @45840 has 108 MA's), (74, 45786), (88, 45738), (118, 45582),

Gene: Neos5_51 Start: 46209, Stop: 45940, Start Num: 56

Candidate Starts for Neos5_51:

(Start: 56 @46209 has 108 MA's), (74, 46155), (88, 46107),

Gene: Nicole21_54 Start: 47889, Stop: 47620, Start Num: 56

Candidate Starts for Nicole21_54:

(13, 48048), (27, 47991), (35, 47964), (43, 47943), (45, 47937), (Start: 56 @47889 has 108 MA's), (62, 47865), (80, 47817), (83, 47811), (88, 47787), (118, 47631),

Gene: NihilNomen_91 Start: 56718, Stop: 57014, Start Num: 50

Candidate Starts for NihilNomen_91:

(Start: 50 @56718 has 19 MA's), (73, 56796), (83, 56823), (88, 56847),

Gene: Nozo_51 Start: 46173, Stop: 45904, Start Num: 56

Candidate Starts for Nozo_51:

(Start: 56 @46173 has 108 MA's), (74, 46119), (88, 46071),

Gene: ODay_82 Start: 46976, Stop: 47251, Start Num: 44

Candidate Starts for ODay_82:

(15, 46892), (20, 46904), (21, 46916), (36, 46958), (Start: 39 @46967 has 1 MA's), (Start: 44 @46976 has 35 MA's), (57, 47021), (65, 47036), (75, 47057), (90, 47099), (95, 47111),

Gene: Obutu_52 Start: 45859, Stop: 45590, Start Num: 56

Candidate Starts for Obutu_52:

(Start: 56 @45859 has 108 MA's), (74, 45805), (88, 45757), (118, 45601),

Gene: Odette_88 Start: 55760, Stop: 56056, Start Num: 50

Candidate Starts for Odette_88:

(Start: 50 @55760 has 19 MA's), (73, 55838), (83, 55865), (88, 55889),

Gene: OneDirection_52 Start: 33066, Stop: 33362, Start Num: 44

Candidate Starts for OneDirection_52:

(33, 33039), (Start: 39 @33057 has 1 MA's), (Start: 44 @33066 has 35 MA's), (64, 33132), (90, 33219), (97, 33237), (108, 33264),

Gene: Oosterbaan_53 Start: 47374, Stop: 47081, Start Num: 56

Candidate Starts for Oosterbaan_53:

(13, 47533), (27, 47476), (35, 47449), (43, 47428), (45, 47422), (Start: 56 @47374 has 108 MA's), (62, 47350), (80, 47302), (83, 47296), (88, 47272),

Gene: OrangeOswald_51 Start: 45414, Stop: 45145, Start Num: 56

Candidate Starts for OrangeOswald_51:

(Start: 56 @45414 has 108 MA's), (74, 45360), (88, 45312),

Gene: Orwigg_53 Start: 47574, Stop: 47305, Start Num: 56

Candidate Starts for Orwigg_53:

(13, 47733), (27, 47676), (35, 47649), (43, 47628), (45, 47622), (Start: 56 @47574 has 108 MA's), (62, 47550), (80, 47502), (83, 47496), (88, 47472), (118, 47316),

Gene: Paraselene_66 Start: 43378, Stop: 43109, Start Num: 56

Candidate Starts for Paraselene_66:

(Start: 56 @43378 has 108 MA's), (74, 43324), (88, 43276),

Gene: Pepperoni_52 Start: 34463, Stop: 34750, Start Num: 44

Candidate Starts for Pepperoni_52:

(38, 34451), (Start: 39 @34454 has 1 MA's), (Start: 44 @34463 has 35 MA's), (64, 34529), (87, 34595), (89, 34607),

Gene: Periwinkle_85 Start: 46796, Stop: 47035, Start Num: 44

Candidate Starts for Periwinkle_85:

(8, 46643), (14, 46700), (17, 46718), (Start: 39 @46787 has 1 MA's), (Start: 44 @46796 has 35 MA's), (76, 46853), (87, 46880), (89, 46892),

Gene: Phabuloso_81 Start: 45523, Stop: 45816, Start Num: 44

Candidate Starts for Phabuloso_81:

(33, 45496), (Start: 39 @45514 has 1 MA's), (Start: 44 @45523 has 35 MA's), (64, 45589), (90, 45676), (116, 45799),

Gene: PhaoMing_61 Start: 40801, Stop: 41079, Start Num: 38

Candidate Starts for PhaoMing_61:

(38, 40801), (Start: 39 @40804 has 1 MA's), (Start: 44 @40813 has 35 MA's), (78, 40885),

Gene: Phayeta_53 Start: 45741, Stop: 45472, Start Num: 56

Candidate Starts for Phayeta_53:

(Start: 56 @45741 has 108 MA's), (74, 45687), (88, 45639), (118, 45483),

Gene: Philly_50 Start: 45265, Stop: 44996, Start Num: 56

Candidate Starts for Philly_50:

(Start: 56 @45265 has 108 MA's), (74, 45211), (88, 45163),

Gene: Phistory_62 Start: 38511, Stop: 38888, Start Num: 44

Candidate Starts for Phistory_62:

(1, 38148), (2, 38154), (5, 38193), (7, 38304), (16, 38430), (Start: 44 @38511 has 35 MA's), (54, 38553), (68, 38610), (85, 38670), (86, 38682), (92, 38727), (93, 38730),

Gene: Phistory_72 Start: 42511, Stop: 42852, Start Num: 37

Candidate Starts for Phistory_72:

(12, 42406), (22, 42466), (Start: 37 @42511 has 4 MA's), (64, 42589), (87, 42655), (102, 42718),

Gene: Phlyer_51 Start: 46154, Stop: 45885, Start Num: 56

Candidate Starts for Phlyer_51:

(Start: 56 @46154 has 108 MA's), (74, 46100), (88, 46052),

Gene: Phoebus_92 Start: 57900, Stop: 58196, Start Num: 50

Candidate Starts for Phoebus_92:

(Start: 50 @57900 has 19 MA's), (73, 57978), (83, 58005), (88, 58029),

Gene: PhorbesPhlower_55 Start: 35141, Stop: 35443, Start Num: 44

Candidate Starts for PhorbesPhlower_55:

(19, 35069), (29, 35099), (34, 35117), (38, 35129), (Start: 39 @35132 has 1 MA's), (Start: 44 @35141 has 35 MA's), (Start: 61 @35189 has 1 MA's), (69, 35207), (75, 35228), (110, 35351),

Gene: Porcelain_82 Start: 49925, Stop: 49656, Start Num: 56

Candidate Starts for Porcelain_82:

(Start: 56 @49925 has 108 MA's), (74, 49871), (88, 49823),

Gene: Potter_52 Start: 47105, Stop: 46812, Start Num: 56

Candidate Starts for Potter_52:

(13, 47264), (27, 47207), (35, 47180), (43, 47159), (45, 47153), (Start: 56 @47105 has 108 MA's), (62, 47081), (80, 47033), (83, 47027), (88, 47003),

Gene: Puhltonio_53 Start: 47379, Stop: 47086, Start Num: 56

Candidate Starts for Puhltonio_53:

(13, 47538), (27, 47481), (35, 47454), (43, 47433), (45, 47427), (Start: 56 @47379 has 108 MA's), (62, 47355), (80, 47307), (83, 47301), (88, 47277),

Gene: QueenBeane_53 Start: 47369, Stop: 47076, Start Num: 56

Candidate Starts for QueenBeane_53:

(13, 47528), (27, 47471), (35, 47444), (43, 47423), (45, 47417), (Start: 56 @47369 has 108 MA's), (62, 47345), (80, 47297), (83, 47291), (88, 47267),

Gene: Raid_64 Start: 42642, Stop: 42373, Start Num: 56

Candidate Starts for Raid_64:

(Start: 56 @42642 has 108 MA's), (74, 42588), (88, 42540),

Gene: RedRaider77_9 Start: 2886, Stop: 3152, Start Num: 56

Candidate Starts for RedRaider77_9:

(42, 2829), (Start: 56 @2886 has 108 MA's), (Start: 70 @2922 has 2 MA's), (87, 2982), (88, 2985), (118, 3141),

Gene: Rita1961_52 Start: 45860, Stop: 45591, Start Num: 56

Candidate Starts for Rita1961_52:

(Start: 56 @45860 has 108 MA's), (74, 45806), (88, 45758), (118, 45602),

Gene: Rizz_60 Start: 40479, Stop: 40724, Start Num: 44

Candidate Starts for Rizz_60:

(Start: 44 @40479 has 35 MA's), (55, 40518), (110, 40668),

Gene: Samaymay_53 Start: 47369, Stop: 47076, Start Num: 56

Candidate Starts for Samaymay_53:

(13, 47528), (27, 47471), (35, 47444), (43, 47423), (45, 47417), (Start: 56 @47369 has 108 MA's), (62, 47345), (80, 47297), (83, 47291), (88, 47267),

Gene: Samman98_60 Start: 39796, Stop: 40041, Start Num: 44

Candidate Starts for Samman98_60:

(Start: 44 @39796 has 35 MA's), (55, 39835), (110, 39985),

Gene: SassyCat97_52 Start: 47096, Stop: 46803, Start Num: 56

Candidate Starts for SassyCat97_52:

(13, 47255), (27, 47198), (35, 47171), (43, 47150), (45, 47144), (Start: 56 @47096 has 108 MA's), (62, 47072), (80, 47024), (83, 47018), (88, 46994),

Gene: Schatzie_85 Start: 55507, Stop: 55803, Start Num: 50

Candidate Starts for Schatzie_85:

(Start: 50 @55507 has 19 MA's), (73, 55585), (83, 55612), (88, 55636),

Gene: Serendipity_53 Start: 47393, Stop: 47100, Start Num: 56

Candidate Starts for Serendipity_53:

(13, 47552), (27, 47495), (35, 47468), (43, 47447), (45, 47441), (Start: 56 @47393 has 108 MA's), (62, 47369), (80, 47321), (83, 47315), (88, 47291),

Gene: ShawBrad_80 Start: 44287, Stop: 44574, Start Num: 44

Candidate Starts for ShawBrad_80:

(8, 44134), (14, 44191), (17, 44209), (Start: 39 @44278 has 1 MA's), (Start: 44 @44287 has 35 MA's), (64, 44353), (87, 44419), (89, 44431),

Gene: Sixama_7 Start: 2706, Stop: 2383, Start Num: 51

Candidate Starts for Sixama_7:

(Start: 51 @2706 has 1 MA's), (66, 2649), (76, 2619), (84, 2592), (107, 2502),

Gene: Smooch_99 Start: 62468, Stop: 62202, Start Num: 56

Candidate Starts for Smooch_99:

(Start: 56 @62468 has 108 MA's), (Start: 70 @62432 has 2 MA's), (87, 62372), (88, 62369),

Gene: Soile_54 Start: 47617, Stop: 47348, Start Num: 56

Candidate Starts for Soile_54:

(13, 47776), (27, 47719), (35, 47692), (43, 47671), (45, 47665), (Start: 56 @47617 has 108 MA's), (62, 47593), (80, 47545), (83, 47539), (88, 47515), (118, 47359),

Gene: Solosis_52 Start: 47090, Stop: 46797, Start Num: 56

Candidate Starts for Solosis_52:

(13, 47249), (27, 47192), (35, 47165), (43, 47144), (45, 47138), (Start: 56 @47090 has 108 MA's), (62, 47066), (80, 47018), (83, 47012), (88, 46988),

Gene: Sophia_52 Start: 47084, Stop: 46791, Start Num: 56

Candidate Starts for Sophia_52:

(13, 47243), (27, 47186), (35, 47159), (43, 47138), (45, 47132), (Start: 56 @47084 has 108 MA's), (62, 47060), (80, 47012), (83, 47006), (88, 46982),

Gene: Spikelee_42 Start: 31774, Stop: 31466, Start Num: 46

Candidate Starts for Spikelee_42:

(22, 31840), (24, 31837), (25, 31834), (40, 31789), (Start: 46 @31774 has 1 MA's), (47, 31762), (Start: 52 @31747 has 1 MA's), (67, 31687), (81, 31645), (87, 31621), (104, 31573),

Gene: Spooky_78 Start: 45719, Stop: 45976, Start Num: 44

Candidate Starts for Spooky_78:

(Start: 44 @45719 has 35 MA's), (53, 45749), (55, 45758), (71, 45782),

Gene: Squid_53 Start: 47096, Stop: 46803, Start Num: 56

Candidate Starts for Squid_53:

(13, 47255), (27, 47198), (35, 47171), (43, 47150), (45, 47144), (Start: 56 @47096 has 108 MA's), (62, 47072), (80, 47024), (83, 47018), (88, 46994),

Gene: Squint_83 Start: 50044, Stop: 49775, Start Num: 56

Candidate Starts for Squint_83:

(Start: 56 @50044 has 108 MA's), (74, 49990), (88, 49942),

Gene: StAnnes_51 Start: 37319, Stop: 37621, Start Num: 70

Candidate Starts for StAnnes_51:

(49, 37253), (Start: 56 @37283 has 108 MA's), (Start: 70 @37319 has 2 MA's), (87, 37379), (88, 37382), (94, 37421), (99, 37442), (114, 37520),

Gene: Surely_53 Start: 47386, Stop: 47093, Start Num: 56

Candidate Starts for Surely_53:

(13, 47545), (27, 47488), (35, 47461), (43, 47440), (45, 47434), (Start: 56 @47386 has 108 MA's), (62, 47362), (80, 47314), (83, 47308), (88, 47284),

Gene: SwainyDoc_52 Start: 45872, Stop: 45603, Start Num: 56
Candidate Starts for SwainyDoc_52:
(Start: 56 @45872 has 108 MA's), (74, 45818), (88, 45770), (118, 45614),

Gene: SynergyX_51 Start: 45415, Stop: 45146, Start Num: 56
Candidate Starts for SynergyX_51:
(Start: 56 @45415 has 108 MA's), (74, 45361), (88, 45313),

Gene: TallGrassMM_53 Start: 47000, Stop: 46707, Start Num: 56
Candidate Starts for TallGrassMM_53:
(13, 47159), (27, 47102), (35, 47075), (43, 47054), (45, 47048), (Start: 56 @47000 has 108 MA's), (62, 46976), (80, 46928), (83, 46922), (88, 46898),

Gene: Thora_53 Start: 47382, Stop: 47089, Start Num: 56
Candidate Starts for Thora_53:
(13, 47541), (27, 47484), (35, 47457), (43, 47436), (45, 47430), (Start: 56 @47382 has 108 MA's), (62, 47358), (80, 47310), (83, 47304), (88, 47280),

Gene: ThreeRngTarjay_87 Start: 56792, Stop: 57088, Start Num: 50
Candidate Starts for ThreeRngTarjay_87:
(Start: 50 @56792 has 19 MA's), (73, 56870), (83, 56897), (88, 56921),

Gene: Timmi_52 Start: 47085, Stop: 46792, Start Num: 56
Candidate Starts for Timmi_52:
(13, 47244), (27, 47187), (35, 47160), (43, 47139), (45, 47133), (Start: 56 @47085 has 108 MA's), (62, 47061), (80, 47013), (83, 47007), (88, 46983),

Gene: TinyTerror_52 Start: 45907, Stop: 45638, Start Num: 56
Candidate Starts for TinyTerror_52:
(Start: 56 @45907 has 108 MA's), (74, 45853), (88, 45805), (118, 45649),

Gene: TomBombadil_53 Start: 47370, Stop: 47077, Start Num: 56
Candidate Starts for TomBombadil_53:
(13, 47529), (27, 47472), (35, 47445), (43, 47424), (45, 47418), (Start: 56 @47370 has 108 MA's), (62, 47346), (80, 47298), (83, 47292), (88, 47268),

Gene: Trine_55 Start: 39935, Stop: 39684, Start Num: 44
Candidate Starts for Trine_55:
(Start: 44 @39935 has 35 MA's), (79, 39860), (103, 39788),

Gene: VanLee_59 Start: 39559, Stop: 39819, Start Num: 44
Candidate Starts for VanLee_59:
(Start: 44 @39559 has 35 MA's),

Gene: Violac_55 Start: 38665, Stop: 39003, Start Num: 56
Candidate Starts for Violac_55:
(49, 38635), (Start: 56 @38665 has 108 MA's), (Start: 70 @38701 has 2 MA's), (87, 38761), (88, 38764), (94, 38803), (99, 38824), (114, 38902),

Gene: Vortex_53 Start: 47080, Stop: 46787, Start Num: 56
Candidate Starts for Vortex_53:

(13, 47239), (27, 47182), (35, 47155), (43, 47134), (45, 47128), (Start: 56 @47080 has 108 MA's), (62, 47056), (80, 47008), (83, 47002), (88, 46978),

Gene: Wanda_94 Start: 55909, Stop: 56205, Start Num: 50

Candidate Starts for Wanda_94:

(48, 55903), (Start: 50 @55909 has 19 MA's), (73, 55987), (83, 56014), (88, 56038),

Gene: Whitney_75 Start: 45513, Stop: 45800, Start Num: 44

Candidate Starts for Whitney_75:

(38, 45501), (Start: 39 @45504 has 1 MA's), (Start: 44 @45513 has 35 MA's), (64, 45579), (87, 45645), (89, 45657),

Gene: Xavier_52 Start: 47087, Stop: 46794, Start Num: 56

Candidate Starts for Xavier_52:

(13, 47246), (27, 47189), (35, 47162), (43, 47141), (45, 47135), (Start: 56 @47087 has 108 MA's), (62, 47063), (80, 47015), (83, 47009), (88, 46985),

Gene: Yeet_83 Start: 55009, Stop: 55305, Start Num: 50

Candidate Starts for Yeet_83:

(Start: 50 @55009 has 19 MA's), (73, 55087), (83, 55114), (88, 55138),

Gene: Zelda_53 Start: 47424, Stop: 47131, Start Num: 56

Candidate Starts for Zelda_53:

(13, 47583), (27, 47526), (35, 47499), (43, 47478), (45, 47472), (Start: 56 @47424 has 108 MA's), (62, 47400), (80, 47352), (83, 47346), (88, 47322),

Gene: Zelink_87 Start: 57104, Stop: 57400, Start Num: 50

Candidate Starts for Zelink_87:

(Start: 50 @57104 has 19 MA's), (73, 57182), (83, 57209), (88, 57233),