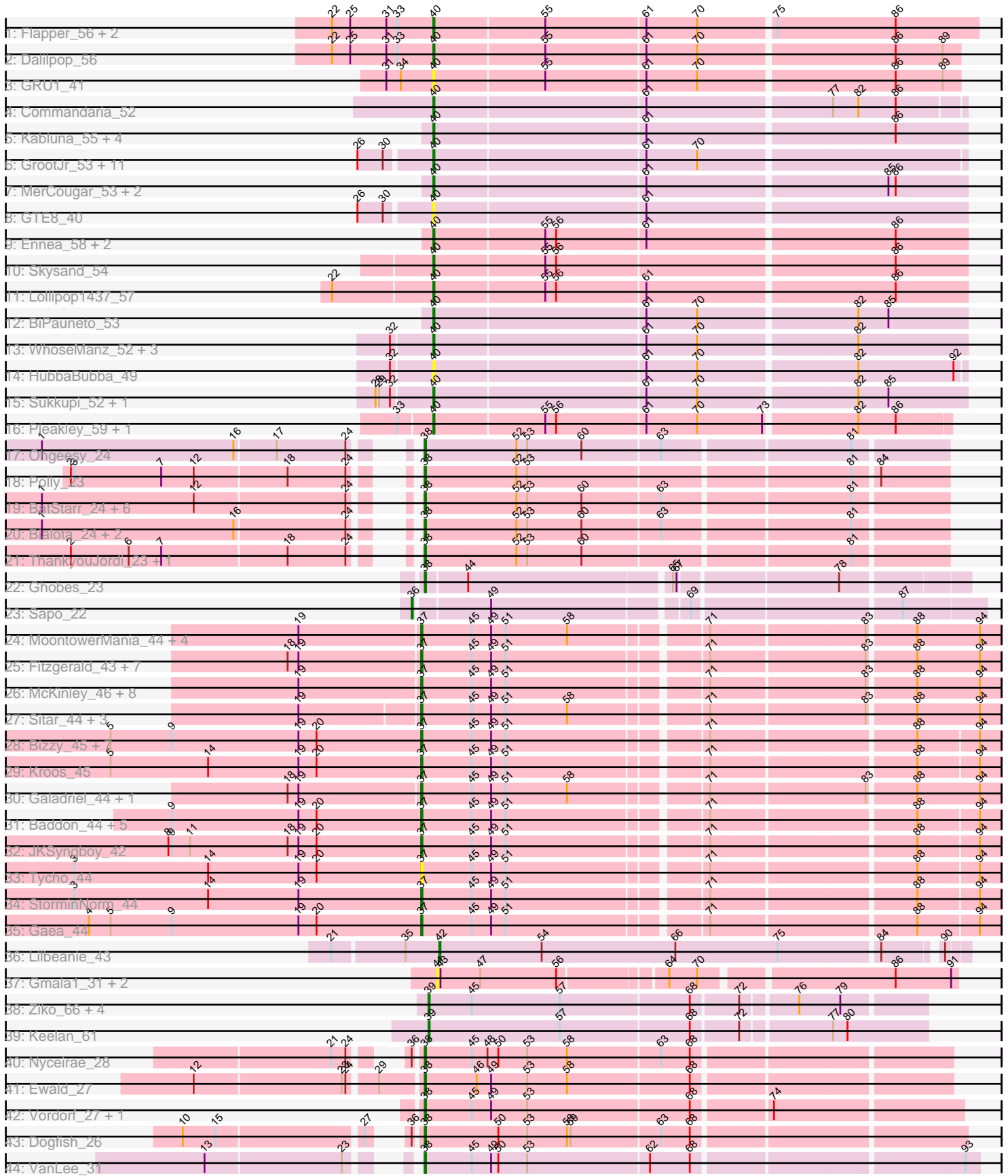


Pham 163451



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 163451 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163451 has 121 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Flapper_56, GTE5_43, Turuncu_56
- Track 2 : Dalilpop_56
- Track 3 : GRU1_41
- Track 4 : Commandaria_52
- Track 5 : Kabluna_55, Bonum_55, SuperSulley_53, Buggaboo_53, NosilaM_55
- Track 6 : GrootJr_53, NovumRegina_51, Kurt_51, KidneyBean_51, Jifall16_50, NatB6_51, Wheezy_51, Tracker_51, Arti_51, Emianna_51, Phomeo_50, Foxboro_52
- Track 7 : MerCougar_53, Outis_53, StarStruck_53
- Track 8 : GTE8_40
- Track 9 : Ennea_58, Float294_54, Patio_55
- Track 10 : Skysand_54
- Track 11 : Lollipop1437_57
- Track 12 : BiPauneto_53
- Track 13 : WhoseManz_52, IDyn_52, Marietta_53, NadineRae_51
- Track 14 : HubbaBubba_49
- Track 15 : Sukkupi_52, Yndexa_52
- Track 16 : Pleakley_59, Fury_59
- Track 17 : Ohgeesy_24
- Track 18 : Polly_23
- Track 19 : BatStarr_24, Nymphadora_24, TimTam_24, Bosnia_24, Hugley_24, Herod_24, Eviarto_24
- Track 20 : Bialota_24, Zirinka_24, Madeline_24
- Track 21 : ThankyouJordi_23, WelcomeAyanna_23
- Track 22 : Ghobes_23
- Track 23 : Sapo_22
- Track 24 : MoontowerMania_44, Barsten_45, ChadMasterC_45, Jabberwocky_43, Shivanishola_44
- Track 25 : Fitzgerald_43, Tangent_45, Charming_45, Nordenberg_39, Brandonk123_46, BobBob_42, Rofo_45, Sanjuju_43
- Track 26 : McKinley_46, Kamashten_42, Vivi2_47, Geodirt_43, Love_48, Fosterous_42, Thing3_42, Stultus_43, Kewpiedoll_44
- Track 27 : Sitar_44, Affeca_42, Lennon_44, Angelicage_42
- Track 28 : Bizzy_45, SchottB_43, Baumdotcom_43, Tangerine_44, Kwobi_45, Flatwoods_45, Ribeye_45, LilHam_42
- Track 29 : Kroos_45
- Track 30 : Galadriel_44, Paries_47

- Track 31 : Baddon_44, Saronaya_44, Gustavo_44, Derg_42, YorkOnyx_45, Ashertheman_45
- Track 32 : JKSyngboy_42
- Track 33 : Tycho_44
- Track 34 : StorminNorm_44
- Track 35 : Gaea_44
- Track 36 : Lilbeanie_43
- Track 37 : Gmala1_31, GordDuk1_31, GordTnk2_31
- Track 38 : Ziko_66, Fryberger_63, Ronaldo_66, Guey18_69, Volt_66
- Track 39 : Keelan_61
- Track 40 : Nyceirae_28
- Track 41 : Ewald_27
- Track 42 : Vordorf_27, Meyran_26
- Track 43 : Dogfish_26
- Track 44 : VanLee_31

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

The start number called the most often in the published annotations is 37, it was called in 38 of the 102 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca_42, Angelicage_42, Ashertheman_45, Baddon_44, Barsten_45, Baumdotcom_43, Bizzy_45, BobBob_42, Brandonk123_46, ChadMasterC_45, Charming_45, Derg_42, Fitzgerald_43, Flatwoods_45, Fosterous_42, Gaea_44, Galadriel_44, Geodirt_43, Gustavo_44, JKSyngboy_42, Jabberwocky_43, Kamashten_42, Kewpiedoll_44, Kroos_45, Kwobi_45, Lennon_44, LilHam_42, Love_48, McKinley_46, MoontowerMania_44, Nordenberg_39, Paries_47, Ribeye_45, Rofo_45, Sanjuju_43, Saronaya_44, SchottB_43, Shivanishola_44, Sitar_44, StorminNorm_44, Stultus_43, Tangent_45, Tangerine_44, Thing3_42, Tycho_44, Vivi2_47, YorkOnyx_45,

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

-

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

- Arti_51, BatStarr_24, BiPauneto_53, Bialota_24, Bonum_55, Bosnia_24, Buggaboo_53, Commandaria_52, Dalilpop_56, Dogfish_26, Emianna_51, Ennea_58, Eviarto_24, Ewald_27, Flapper_56, Float294_54, Foxboro_52, Fryberger_63, Fury_59, GRU1_41, GTE5_43, GTE8_40, Ghobes_23, Gmala1_31, GordDuk1_31, GordTnk2_31, GrootJr_53, Guey18_69, Herod_24, HubbaBubba_49, Hugley_24, IDyn_52, Jifall16_50, Kabluna_55, Keelan_61, KidneyBean_51, Kurt_51, Lilbeanie_43, Lollipop1437_57, Madeline_24, Marietta_53, MerCougar_53, Meyran_26, NadineRae_51, NatB6_51, NosilaM_55, NovumRegina_51, Nyceirae_28, Nymphadora_24, Ohgeesy_24, Outis_53, Patio_55, Phomeo_50, Pleakley_59, Polly_23, Ronaldo_66, Sapo_22, Skysand_54, StarStruck_53, Sukkupi_52, SuperSulley_53, ThankyouJordi_23, TimTam_24, Tracker_51, Turuncu_56, VanLee_31, Volt_66, Vordorf_27, WelcomeAyanna_23, Wheezy_51, WhoseManz_52, Yndexa_52, Ziko_66, Zirinka_24,

Summary by start number:

Start 36:

- Found in 3 of 121 (2.5%) of genes in pham
- Manual Annotations of this start: 1 of 102
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Sapo_22 (DA),

Start 37:

- Found in 47 of 121 (38.8%) of genes in pham
- Manual Annotations of this start: 38 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca_42 (DE1), Angelicage_42 (DE1), Ashertheman_45 (DE1), Baddon_44 (DE1), Barsten_45 (DE1), Baumdotcom_43 (DE1), Bizzy_45 (DE1), BobBob_42 (DE1), Brandonk123_46 (DE1), ChadMasterC_45 (DE1), Charming_45 (DE1), Derg_42 (DE1), Fitzgerald_43 (DE1), Flatwoods_45 (DE1), Fosterous_42 (DE1), Gaea_44 (DE1), Galadriel_44 (DE1), Geodirt_43 (DE1), Gustavo_44 (DE1), JKSyngboy_42 (DE1), Jabberwocky_43 (DE1), Kamashten_42 (DE1), Kewpiedoll_44 (DE1), Kroos_45 (DE1), Kwobi_45 (DE1), Lennon_44 (DE1), LilHam_42 (DE1), Love_48 (DE1), McKinley_46 (DE1), MoontowerMania_44 (DE1), Nordenberg_39 (DE1), Paries_47 (DE1), Ribeye_45 (DE1), Rofo_45 (DE1), Sanjuju_43 (DE1), Saronaya_44 (DE1), SchottB_43 (DE1), Shivanishola_44 (DE1), Sitar_44 (DE1), StorminNorm_44 (DE1), Stultus_43 (DE1), Tangent_45 (DE1), Tangerine_44 (DE1), Thing3_42 (DE1), Tycho_44 (DE1), Vivi2_47 (DE1), YorkOnyx_45 (DE1),

Start 38:

- Found in 21 of 121 (17.4%) of genes in pham
- Manual Annotations of this start: 19 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BatStarr_24 (CZ1), Bialota_24 (CZ1), Bosnia_24 (CZ1), Dogfish_26 (DT), Eviarto_24 (CZ1), Ewald_27 (DT), Ghobes_23 (DA), Herod_24 (CZ1), Hugley_24 (CZ1), Madeline_24 (CZ1), Meyran_26 (DT), Nyceirae_28 (DT), Nymphadora_24 (CZ1), Ohgeesy_24 (CZ), Polly_23 (CZ1), ThankyouJordi_23 (CZ1), TimTam_24 (CZ1), VanLee_31 (singleton), Vordorf_27 (DT), WelcomeAyanna_23 (CZ1), Zirinka_24 (CZ1),

Start 39:

- Found in 6 of 121 (5.0%) of genes in pham
- Manual Annotations of this start: 6 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fryberger_63 (DP), Guey18_69 (DP), Keelan_61 (DP), Ronaldo_66 (DP), Volt_66 (DP), Ziko_66 (DP),

Start 40:

- Found in 42 of 121 (34.7%) of genes in pham
- Manual Annotations of this start: 37 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arti_51 (CR2), BiPauneto_53 (CR4), Bonum_55 (CR2), Buggaboo_53 (CR2), Commandaria_52 (CR2), Dalilpop_56 (CR1), Emianna_51 (CR2), Ennea_58 (CR3), Flapper_56 (CR1), Float294_54 (CR3), Foxboro_52 (CR2), Fury_59 (CR5), GRU1_41 (CR1), GTE5_43 (CR1), GTE8_40 (CR2), GrootJr_53 (CR2), HubbaBubba_49 (CR4), IDyn_52 (CR4), Jifall16_50 (CR2),

Kabluna_55 (CR2), KidneyBean_51 (CR2), Kurt_51 (CR2), Lollipop1437_57 (CR3), Marietta_53 (CR4), MerCougar_53 (CR2), NadineRae_51 (CR4), NatB6_51 (CR2), NosilaM_55 (CR2), NovumRegina_51 (CR2), Outis_53 (CR2), Patio_55 (CR3), Phomeo_50 (CR2), Pleakley_59 (CR5), Skysand_54 (CR3), StarStruck_53 (CR2), Sukkupi_52 (CR4), SuperSulley_53 (CR2), Tracker_51 (CR2), Turuncu_56 (CR1), Wheezy_51 (CR2), WhoseManz_52 (CR4), Yndexa_52 (CR4),

Start 41:

- Found in 3 of 121 (2.5%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gmala1_31 (DF1), GordDuk1_31 (DF1), GordTnk2_31 (DF1),

Start 42:

- Found in 1 of 121 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie_43 (DE5),

Summary by clusters:

There are 14 clusters represented in this pham: CR2, CR3, singleton, CR1, CR4, CR5, DE1, CZ1, DF1, DE5, DA, CZ, DT, DP,

Info for manual annotations of cluster CR1:

- Start number 40 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 40 was manually annotated 20 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 40 was manually annotated 5 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 40 was manually annotated 7 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 40 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CZ:

- Start number 38 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 38 was manually annotated 12 times for cluster CZ1.

Info for manual annotations of cluster DA:

- Start number 36 was manually annotated 1 time for cluster DA.
- Start number 38 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DE1:

- Start number 37 was manually annotated 38 times for cluster DE1.

Info for manual annotations of cluster DE5:

- Start number 42 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DP:

- Start number 39 was manually annotated 6 times for cluster DP.

Info for manual annotations of cluster DT:

- Start number 38 was manually annotated 4 times for cluster DT.

Gene Information:

Gene: Affeca_42 Start: 39008, Stop: 39457, Start Num: 37

Candidate Starts for Affeca_42:

(19, 38912), (Start: 37 @39008 has 38 MA's), (45, 39050), (49, 39065), (51, 39077), (58, 39128), (71, 39230), (83, 39353), (88, 39389), (94, 39440),

Gene: Angelicage_42 Start: 39426, Stop: 39875, Start Num: 37

Candidate Starts for Angelicage_42:

(19, 39330), (Start: 37 @39426 has 38 MA's), (45, 39468), (49, 39483), (51, 39495), (58, 39546), (71, 39648), (83, 39771), (88, 39807), (94, 39858),

Gene: Arti_51 Start: 39161, Stop: 39586, Start Num: 40

Candidate Starts for Arti_51:

(26, 39104), (30, 39125), (Start: 40 @39161 has 37 MA's), (61, 39332), (70, 39374),

Gene: Ashertheman_45 Start: 39429, Stop: 39875, Start Num: 37

Candidate Starts for Ashertheman_45:

(9, 39222), (19, 39327), (20, 39342), (Start: 37 @39429 has 38 MA's), (45, 39471), (49, 39486), (51, 39498), (71, 39651), (88, 39810), (94, 39858),

Gene: Baddon_44 Start: 39967, Stop: 40413, Start Num: 37

Candidate Starts for Baddon_44:

(9, 39760), (19, 39865), (20, 39880), (Start: 37 @39967 has 38 MA's), (45, 40009), (49, 40024), (51, 40036), (71, 40189), (88, 40348), (94, 40396),

Gene: Barsten_45 Start: 39581, Stop: 40030, Start Num: 37

Candidate Starts for Barsten_45:

(19, 39482), (Start: 37 @39581 has 38 MA's), (45, 39623), (49, 39638), (51, 39650), (58, 39701), (71, 39803), (83, 39926), (88, 39962), (94, 40013),

Gene: BatStarr_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for BatStarr_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Baumdotcom_43 Start: 38818, Stop: 39264, Start Num: 37

Candidate Starts for Baumdotcom_43:

(5, 38560), (9, 38611), (19, 38716), (20, 38731), (Start: 37 @38818 has 38 MA's), (45, 38860), (49, 38875), (51, 38887), (71, 39040), (88, 39199), (94, 39247),

Gene: BiPauneto_53 Start: 38687, Stop: 39115, Start Num: 40
Candidate Starts for BiPauneto_53:
(Start: 40 @38687 has 37 MA's), (61, 38858), (70, 38900), (82, 39026), (85, 39050),

Gene: Bialota_24 Start: 21911, Stop: 22324, Start Num: 38
Candidate Starts for Bialota_24:
(1, 21641), (16, 21800), (24, 21890), (Start: 38 @21911 has 19 MA's), (52, 21986), (53, 21995), (60, 22040), (63, 22103), (81, 22250),

Gene: Bizzy_45 Start: 39124, Stop: 39570, Start Num: 37
Candidate Starts for Bizzy_45:
(5, 38866), (9, 38917), (19, 39022), (20, 39037), (Start: 37 @39124 has 38 MA's), (45, 39166), (49, 39181), (51, 39193), (71, 39346), (88, 39505), (94, 39553),

Gene: BobBob_42 Start: 38700, Stop: 39149, Start Num: 37
Candidate Starts for BobBob_42:
(18, 38592), (19, 38601), (Start: 37 @38700 has 38 MA's), (45, 38742), (49, 38757), (51, 38769), (71, 38922), (83, 39045), (88, 39081), (94, 39132),

Gene: Bonum_55 Start: 39814, Stop: 40242, Start Num: 40
Candidate Starts for Bonum_55:
(Start: 40 @39814 has 37 MA's), (61, 39985), (86, 40183),

Gene: Bosnia_24 Start: 21899, Stop: 22312, Start Num: 38
Candidate Starts for Bosnia_24:
(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Brandonk123_46 Start: 39835, Stop: 40284, Start Num: 37
Candidate Starts for Brandonk123_46:
(18, 39727), (19, 39736), (Start: 37 @39835 has 38 MA's), (45, 39877), (49, 39892), (51, 39904), (71, 40057), (83, 40180), (88, 40216), (94, 40267),

Gene: Buggaboo_53 Start: 40293, Stop: 40721, Start Num: 40
Candidate Starts for Buggaboo_53:
(Start: 40 @40293 has 37 MA's), (61, 40464), (86, 40662),

Gene: ChadMasterC_45 Start: 40980, Stop: 41429, Start Num: 37
Candidate Starts for ChadMasterC_45:
(19, 40881), (Start: 37 @40980 has 38 MA's), (45, 41022), (49, 41037), (51, 41049), (58, 41100), (71, 41202), (83, 41325), (88, 41361), (94, 41412),

Gene: Charming_45 Start: 39336, Stop: 39785, Start Num: 37
Candidate Starts for Charming_45:
(18, 39228), (19, 39237), (Start: 37 @39336 has 38 MA's), (45, 39378), (49, 39393), (51, 39405), (71, 39558), (83, 39681), (88, 39717), (94, 39768),

Gene: Commandaria_52 Start: 40288, Stop: 40710, Start Num: 40
Candidate Starts for Commandaria_52:
(Start: 40 @40288 has 37 MA's), (61, 40459), (77, 40606), (82, 40627), (86, 40657),

Gene: Dalilpop_56 Start: 41448, Stop: 41870, Start Num: 40
Candidate Starts for Dalilpop_56:

(22, 41364), (25, 41379), (31, 41409), (33, 41418), (Start: 40 @41448 has 37 MA's), (55, 41538), (61, 41619), (70, 41661), (86, 41817), (89, 41856),

Gene: Derg_42 Start: 38716, Stop: 39162, Start Num: 37

Candidate Starts for Derg_42:

(9, 38509), (19, 38614), (20, 38629), (Start: 37 @38716 has 38 MA's), (45, 38758), (49, 38773), (51, 38785), (71, 38938), (88, 39097), (94, 39145),

Gene: Dogfish_26 Start: 22166, Stop: 22594, Start Num: 38

Candidate Starts for Dogfish_26:

(10, 22007), (15, 22034), (27, 22148), (Start: 36 @22160 has 1 MA's), (Start: 38 @22166 has 19 MA's), (50, 22226), (53, 22250), (58, 22283), (59, 22286), (63, 22358), (68, 22382),

Gene: Emianna_51 Start: 40153, Stop: 40578, Start Num: 40

Candidate Starts for Emianna_51:

(26, 40096), (30, 40117), (Start: 40 @40153 has 37 MA's), (61, 40324), (70, 40366),

Gene: Ennea_58 Start: 41167, Stop: 41595, Start Num: 40

Candidate Starts for Ennea_58:

(Start: 40 @41167 has 37 MA's), (55, 41257), (56, 41266), (61, 41338), (86, 41536),

Gene: Eviarto_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for Eviarto_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Ewald_27 Start: 22552, Stop: 22968, Start Num: 38

Candidate Starts for Ewald_27:

(12, 22375), (23, 22495), (24, 22498), (29, 22519), (Start: 38 @22552 has 19 MA's), (46, 22594), (49, 22606), (53, 22636), (58, 22669), (68, 22768),

Gene: Fitzgerald_43 Start: 40238, Stop: 40687, Start Num: 37

Candidate Starts for Fitzgerald_43:

(18, 40130), (19, 40139), (Start: 37 @40238 has 38 MA's), (45, 40280), (49, 40295), (51, 40307), (71, 40460), (83, 40583), (88, 40619), (94, 40670),

Gene: Flapper_56 Start: 40879, Stop: 41316, Start Num: 40

Candidate Starts for Flapper_56:

(22, 40795), (25, 40810), (31, 40840), (33, 40849), (Start: 40 @40879 has 37 MA's), (55, 40969), (61, 41050), (70, 41092), (75, 41152), (86, 41248),

Gene: Flatwoods_45 Start: 39068, Stop: 39514, Start Num: 37

Candidate Starts for Flatwoods_45:

(5, 38810), (9, 38861), (19, 38966), (20, 38981), (Start: 37 @39068 has 38 MA's), (45, 39110), (49, 39125), (51, 39137), (71, 39290), (88, 39449), (94, 39497),

Gene: Float294_54 Start: 40609, Stop: 41037, Start Num: 40

Candidate Starts for Float294_54:

(Start: 40 @40609 has 37 MA's), (55, 40699), (56, 40708), (61, 40780), (86, 40978),

Gene: Fosterous_42 Start: 38797, Stop: 39246, Start Num: 37

Candidate Starts for Fosterous_42:

(19, 38698), (Start: 37 @38797 has 38 MA's), (45, 38839), (49, 38854), (51, 38866), (71, 39019), (83, 39142), (88, 39178), (94, 39229),

Gene: Foxboro_52 Start: 40659, Stop: 41084, Start Num: 40

Candidate Starts for Foxboro_52:

(26, 40602), (30, 40623), (Start: 40 @40659 has 37 MA's), (61, 40830), (70, 40872),

Gene: Fryberger_63 Start: 35468, Stop: 35857, Start Num: 39

Candidate Starts for Fryberger_63:

(Start: 39 @35468 has 6 MA's), (45, 35504), (57, 35576), (68, 35681), (72, 35717), (76, 35759), (79, 35792),

Gene: Fury_59 Start: 39331, Stop: 39744, Start Num: 40

Candidate Starts for Fury_59:

(33, 39304), (Start: 40 @39331 has 37 MA's), (55, 39421), (56, 39430), (61, 39502), (70, 39544), (73, 39598), (82, 39670), (86, 39700),

Gene: GRU1_41 Start: 32426, Stop: 32848, Start Num: 40

Candidate Starts for GRU1_41:

(31, 32387), (34, 32399), (Start: 40 @32426 has 37 MA's), (55, 32516), (61, 32597), (70, 32639), (86, 32795), (89, 32834),

Gene: GTE5_43 Start: 33736, Stop: 34173, Start Num: 40

Candidate Starts for GTE5_43:

(22, 33652), (25, 33667), (31, 33697), (33, 33706), (Start: 40 @33736 has 37 MA's), (55, 33826), (61, 33907), (70, 33949), (75, 34009), (86, 34105),

Gene: GTE8_40 Start: 33411, Stop: 33839, Start Num: 40

Candidate Starts for GTE8_40:

(26, 33354), (30, 33375), (Start: 40 @33411 has 37 MA's), (61, 33582),

Gene: Gaea_44 Start: 38712, Stop: 39158, Start Num: 37

Candidate Starts for Gaea_44:

(4, 38436), (5, 38454), (9, 38505), (19, 38610), (20, 38625), (Start: 37 @38712 has 38 MA's), (45, 38754), (49, 38769), (51, 38781), (71, 38934), (88, 39093), (94, 39141),

Gene: Galadriel_44 Start: 39604, Stop: 40053, Start Num: 37

Candidate Starts for Galadriel_44:

(18, 39496), (19, 39505), (Start: 37 @39604 has 38 MA's), (45, 39646), (49, 39661), (51, 39673), (58, 39724), (71, 39826), (83, 39949), (88, 39985), (94, 40036),

Gene: Geodirt_43 Start: 40216, Stop: 40665, Start Num: 37

Candidate Starts for Geodirt_43:

(19, 40117), (Start: 37 @40216 has 38 MA's), (45, 40258), (49, 40273), (51, 40285), (71, 40438), (83, 40561), (88, 40597), (94, 40648),

Gene: Ghobes_23 Start: 19556, Stop: 19969, Start Num: 38

Candidate Starts for Ghobes_23:

(Start: 38 @19556 has 19 MA's), (44, 19589), (65, 19748), (67, 19751), (78, 19874),

Gene: Gmala1_31 Start: 36456, Stop: 36854, Start Num: 41

Candidate Starts for Gmala1_31:

(41, 36456), (43, 36459), (47, 36492), (56, 36555), (64, 36636), (70, 36657), (86, 36804), (91, 36849),

Gene: GordDuk1_31 Start: 36394, Stop: 36792, Start Num: 41

Candidate Starts for GordDuk1_31:

(41, 36394), (43, 36397), (47, 36430), (56, 36493), (64, 36574), (70, 36595), (86, 36742), (91, 36787),

Gene: GordTnk2_31 Start: 36363, Stop: 36761, Start Num: 41

Candidate Starts for GordTnk2_31:

(41, 36363), (43, 36366), (47, 36399), (56, 36462), (64, 36543), (70, 36564), (86, 36711), (91, 36756),

Gene: GrootJr_53 Start: 39535, Stop: 39960, Start Num: 40

Candidate Starts for GrootJr_53:

(26, 39478), (30, 39499), (Start: 40 @39535 has 37 MA's), (61, 39706), (70, 39748),

Gene: Guey18_69 Start: 36988, Stop: 37377, Start Num: 39

Candidate Starts for Guey18_69:

(Start: 39 @36988 has 6 MA's), (45, 37024), (57, 37096), (68, 37201), (72, 37237), (76, 37279), (79, 37312),

Gene: Gustavo_44 Start: 38884, Stop: 39330, Start Num: 37

Candidate Starts for Gustavo_44:

(9, 38677), (19, 38782), (20, 38797), (Start: 37 @38884 has 38 MA's), (45, 38926), (49, 38941), (51, 38953), (71, 39106), (88, 39265), (94, 39313),

Gene: Herod_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for Herod_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: HubbaBubba_49 Start: 35702, Stop: 36127, Start Num: 40

Candidate Starts for HubbaBubba_49:

(32, 35669), (Start: 40 @35702 has 37 MA's), (61, 35873), (70, 35915), (82, 36041), (92, 36119),

Gene: Hugley_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for Hugley_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: IDyn_52 Start: 37131, Stop: 37559, Start Num: 40

Candidate Starts for IDyn_52:

(32, 37098), (Start: 40 @37131 has 37 MA's), (61, 37302), (70, 37344), (82, 37470),

Gene: JKSyngboy_42 Start: 39483, Stop: 39929, Start Num: 37

Candidate Starts for JKSyngboy_42:

(8, 39273), (9, 39276), (11, 39291), (18, 39372), (19, 39381), (20, 39396), (Start: 37 @39483 has 38 MA's), (45, 39525), (49, 39540), (51, 39552), (71, 39705), (88, 39864), (94, 39912),

Gene: Jabberwocky_43 Start: 40642, Stop: 41091, Start Num: 37

Candidate Starts for Jabberwocky_43:

(19, 40543), (Start: 37 @40642 has 38 MA's), (45, 40684), (49, 40699), (51, 40711), (58, 40762), (71, 40864), (83, 40987), (88, 41023), (94, 41074),

Gene: Jifall16_50 Start: 39807, Stop: 40232, Start Num: 40

Candidate Starts for Jifall16_50:

(26, 39750), (30, 39771), (Start: 40 @39807 has 37 MA's), (61, 39978), (70, 40020),

Gene: Kabluna_55 Start: 39229, Stop: 39657, Start Num: 40

Candidate Starts for Kabluna_55:

(Start: 40 @39229 has 37 MA's), (61, 39400), (86, 39598),

Gene: Kamashten_42 Start: 38577, Stop: 39026, Start Num: 37

Candidate Starts for Kamashten_42:

(19, 38478), (Start: 37 @38577 has 38 MA's), (45, 38619), (49, 38634), (51, 38646), (71, 38799), (83, 38922), (88, 38958), (94, 39009),

Gene: Keelan_61 Start: 35707, Stop: 36102, Start Num: 39

Candidate Starts for Keelan_61:

(Start: 39 @35707 has 6 MA's), (57, 35815), (68, 35920), (72, 35956), (77, 36025), (80, 36037),

Gene: Kewpiedoll_44 Start: 39518, Stop: 39967, Start Num: 37

Candidate Starts for Kewpiedoll_44:

(19, 39419), (Start: 37 @39518 has 38 MA's), (45, 39560), (49, 39575), (51, 39587), (71, 39740), (83, 39863), (88, 39899), (94, 39950),

Gene: KidneyBean_51 Start: 39931, Stop: 40356, Start Num: 40

Candidate Starts for KidneyBean_51:

(26, 39874), (30, 39895), (Start: 40 @39931 has 37 MA's), (61, 40102), (70, 40144),

Gene: Kroos_45 Start: 39624, Stop: 40070, Start Num: 37

Candidate Starts for Kroos_45:

(5, 39366), (14, 39447), (19, 39522), (20, 39537), (Start: 37 @39624 has 38 MA's), (45, 39666), (49, 39681), (51, 39693), (71, 39846), (88, 40005), (94, 40053),

Gene: Kurt_51 Start: 40168, Stop: 40593, Start Num: 40

Candidate Starts for Kurt_51:

(26, 40111), (30, 40132), (Start: 40 @40168 has 37 MA's), (61, 40339), (70, 40381),

Gene: Kwobi_45 Start: 39610, Stop: 40056, Start Num: 37

Candidate Starts for Kwobi_45:

(5, 39352), (9, 39403), (19, 39508), (20, 39523), (Start: 37 @39610 has 38 MA's), (45, 39652), (49, 39667), (51, 39679), (71, 39832), (88, 39991), (94, 40039),

Gene: Lennon_44 Start: 40321, Stop: 40770, Start Num: 37

Candidate Starts for Lennon_44:

(19, 40225), (Start: 37 @40321 has 38 MA's), (45, 40363), (49, 40378), (51, 40390), (58, 40441), (71, 40543), (83, 40666), (88, 40702), (94, 40753),

Gene: LilHam_42 Start: 38211, Stop: 38657, Start Num: 37

Candidate Starts for LilHam_42:

(5, 37953), (9, 38004), (19, 38109), (20, 38124), (Start: 37 @38211 has 38 MA's), (45, 38253), (49, 38268), (51, 38280), (71, 38433), (88, 38592), (94, 38640),

Gene: Lilbeanie_43 Start: 34683, Stop: 35099, Start Num: 42

Candidate Starts for Lilbeanie_43:

(21, 34599), (35, 34656), (Start: 42 @34683 has 1 MA's), (54, 34767), (66, 34878), (75, 34962), (84, 35040), (90, 35082),

Gene: Lollipop1437_57 Start: 41155, Stop: 41583, Start Num: 40
Candidate Starts for Lollipop1437_57:
(22, 41074), (Start: 40 @41155 has 37 MA's), (55, 41245), (56, 41254), (61, 41326), (86, 41524),

Gene: Love_48 Start: 40769, Stop: 41218, Start Num: 37
Candidate Starts for Love_48:
(19, 40670), (Start: 37 @40769 has 38 MA's), (45, 40811), (49, 40826), (51, 40838), (71, 40991), (83, 41114), (88, 41150), (94, 41201),

Gene: Madeline_24 Start: 22197, Stop: 22610, Start Num: 38
Candidate Starts for Madeline_24:
(1, 21927), (16, 22086), (24, 22176), (Start: 38 @22197 has 19 MA's), (52, 22272), (53, 22281), (60, 22326), (63, 22389), (81, 22536),

Gene: Marietta_53 Start: 37025, Stop: 37453, Start Num: 40
Candidate Starts for Marietta_53:
(32, 36992), (Start: 40 @37025 has 37 MA's), (61, 37196), (70, 37238), (82, 37364),

Gene: McKinley_46 Start: 40142, Stop: 40591, Start Num: 37
Candidate Starts for McKinley_46:
(19, 40043), (Start: 37 @40142 has 38 MA's), (45, 40184), (49, 40199), (51, 40211), (71, 40364), (83, 40487), (88, 40523), (94, 40574),

Gene: MerCougar_53 Start: 40431, Stop: 40859, Start Num: 40
Candidate Starts for MerCougar_53:
(Start: 40 @40431 has 37 MA's), (61, 40602), (85, 40794), (86, 40800),

Gene: Meyran_26 Start: 23021, Stop: 23446, Start Num: 38
Candidate Starts for Meyran_26:
(Start: 38 @23021 has 19 MA's), (45, 23060), (49, 23075), (53, 23105), (68, 23237), (74, 23297),

Gene: MoontowerMania_44 Start: 39977, Stop: 40426, Start Num: 37
Candidate Starts for MoontowerMania_44:
(19, 39878), (Start: 37 @39977 has 38 MA's), (45, 40019), (49, 40034), (51, 40046), (58, 40097), (71, 40199), (83, 40322), (88, 40358), (94, 40409),

Gene: NadineRae_51 Start: 36272, Stop: 36697, Start Num: 40
Candidate Starts for NadineRae_51:
(32, 36239), (Start: 40 @36272 has 37 MA's), (61, 36443), (70, 36485), (82, 36611),

Gene: NatB6_51 Start: 39225, Stop: 39650, Start Num: 40
Candidate Starts for NatB6_51:
(26, 39168), (30, 39189), (Start: 40 @39225 has 37 MA's), (61, 39396), (70, 39438),

Gene: Nordenberg_39 Start: 38962, Stop: 39411, Start Num: 37
Candidate Starts for Nordenberg_39:
(18, 38854), (19, 38863), (Start: 37 @38962 has 38 MA's), (45, 39004), (49, 39019), (51, 39031), (71, 39184), (83, 39307), (88, 39343), (94, 39394),

Gene: NosilaM_55 Start: 40126, Stop: 40554, Start Num: 40
Candidate Starts for NosilaM_55:
(Start: 40 @40126 has 37 MA's), (61, 40297), (86, 40495),

Gene: NovumRegina_51 Start: 39534, Stop: 39959, Start Num: 40
Candidate Starts for NovumRegina_51:
(26, 39477), (30, 39498), (Start: 40 @39534 has 37 MA's), (61, 39705), (70, 39747),

Gene: Nyceirae_28 Start: 22758, Stop: 23174, Start Num: 38
Candidate Starts for Nyceirae_28:
(21, 22719), (24, 22731), (Start: 36 @22752 has 1 MA's), (Start: 38 @22758 has 19 MA's), (45, 22797), (48, 22809), (50, 22818), (53, 22842), (58, 22875), (63, 22950), (68, 22974),

Gene: Nymphadora_24 Start: 21899, Stop: 22312, Start Num: 38
Candidate Starts for Nymphadora_24:
(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Ohgeesy_24 Start: 21522, Stop: 21935, Start Num: 38
Candidate Starts for Ohgeesy_24:
(1, 21252), (16, 21411), (17, 21444), (24, 21501), (Start: 38 @21522 has 19 MA's), (52, 21597), (53, 21606), (60, 21651), (63, 21714), (81, 21861),

Gene: Outis_53 Start: 40125, Stop: 40553, Start Num: 40
Candidate Starts for Outis_53:
(Start: 40 @40125 has 37 MA's), (61, 40296), (85, 40488), (86, 40494),

Gene: Paries_47 Start: 40431, Stop: 40880, Start Num: 37
Candidate Starts for Paries_47:
(18, 40323), (19, 40332), (Start: 37 @40431 has 38 MA's), (45, 40473), (49, 40488), (51, 40500), (58, 40551), (71, 40653), (83, 40776), (88, 40812), (94, 40863),

Gene: Patio_55 Start: 40391, Stop: 40819, Start Num: 40
Candidate Starts for Patio_55:
(Start: 40 @40391 has 37 MA's), (55, 40481), (56, 40490), (61, 40562), (86, 40760),

Gene: Phomeo_50 Start: 39803, Stop: 40228, Start Num: 40
Candidate Starts for Phomeo_50:
(26, 39746), (30, 39767), (Start: 40 @39803 has 37 MA's), (61, 39974), (70, 40016),

Gene: Pleakley_59 Start: 39332, Stop: 39745, Start Num: 40
Candidate Starts for Pleakley_59:
(33, 39305), (Start: 40 @39332 has 37 MA's), (55, 39422), (56, 39431), (61, 39503), (70, 39545), (73, 39599), (82, 39671), (86, 39701),

Gene: Polly_23 Start: 21339, Stop: 21752, Start Num: 38
Candidate Starts for Polly_23:
(2, 21093), (3, 21096), (7, 21168), (12, 21195), (18, 21270), (24, 21318), (Start: 38 @21339 has 19 MA's), (52, 21414), (53, 21423), (81, 21678), (84, 21696),

Gene: Ribeye_45 Start: 40042, Stop: 40488, Start Num: 37
Candidate Starts for Ribeye_45:
(5, 39784), (9, 39835), (19, 39940), (20, 39955), (Start: 37 @40042 has 38 MA's), (45, 40084), (49, 40099), (51, 40111), (71, 40264), (88, 40423), (94, 40471),

Gene: Rofo_45 Start: 39757, Stop: 40206, Start Num: 37
Candidate Starts for Rofo_45:

(18, 39649), (19, 39658), (Start: 37 @39757 has 38 MA's), (45, 39799), (49, 39814), (51, 39826), (71, 39979), (83, 40102), (88, 40138), (94, 40189),

Gene: Ronaldo_66 Start: 36367, Stop: 36756, Start Num: 39

Candidate Starts for Ronaldo_66:

(Start: 39 @36367 has 6 MA's), (45, 36403), (57, 36475), (68, 36580), (72, 36616), (76, 36658), (79, 36691),

Gene: Sanjuju_43 Start: 40371, Stop: 40820, Start Num: 37

Candidate Starts for Sanjuju_43:

(18, 40263), (19, 40272), (Start: 37 @40371 has 38 MA's), (45, 40413), (49, 40428), (51, 40440), (71, 40593), (83, 40716), (88, 40752), (94, 40803),

Gene: Sapo_22 Start: 19503, Stop: 19937, Start Num: 36

Candidate Starts for Sapo_22:

(Start: 36 @19503 has 1 MA's), (49, 19560), (69, 19713), (87, 19872),

Gene: Saronaya_44 Start: 38884, Stop: 39330, Start Num: 37

Candidate Starts for Saronaya_44:

(9, 38677), (19, 38782), (20, 38797), (Start: 37 @38884 has 38 MA's), (45, 38926), (49, 38941), (51, 38953), (71, 39106), (88, 39265), (94, 39313),

Gene: SchottB_43 Start: 39884, Stop: 40330, Start Num: 37

Candidate Starts for SchottB_43:

(5, 39626), (9, 39677), (19, 39782), (20, 39797), (Start: 37 @39884 has 38 MA's), (45, 39926), (49, 39941), (51, 39953), (71, 40106), (88, 40265), (94, 40313),

Gene: Shivanishola_44 Start: 38638, Stop: 39087, Start Num: 37

Candidate Starts for Shivanishola_44:

(19, 38539), (Start: 37 @38638 has 38 MA's), (45, 38680), (49, 38695), (51, 38707), (58, 38758), (71, 38860), (83, 38983), (88, 39019), (94, 39070),

Gene: Sitar_44 Start: 40321, Stop: 40770, Start Num: 37

Candidate Starts for Sitar_44:

(19, 40225), (Start: 37 @40321 has 38 MA's), (45, 40363), (49, 40378), (51, 40390), (58, 40441), (71, 40543), (83, 40666), (88, 40702), (94, 40753),

Gene: Skysand_54 Start: 40611, Stop: 41039, Start Num: 40

Candidate Starts for Skysand_54:

(Start: 40 @40611 has 37 MA's), (55, 40701), (56, 40710), (86, 40980),

Gene: StarStruck_53 Start: 40125, Stop: 40553, Start Num: 40

Candidate Starts for StarStruck_53:

(Start: 40 @40125 has 37 MA's), (61, 40296), (85, 40488), (86, 40494),

Gene: StorminNorm_44 Start: 38975, Stop: 39421, Start Num: 37

Candidate Starts for StorminNorm_44:

(3, 38687), (14, 38798), (19, 38873), (Start: 37 @38975 has 38 MA's), (45, 39017), (49, 39032), (51, 39044), (71, 39197), (88, 39356), (94, 39404),

Gene: Stultus_43 Start: 39274, Stop: 39723, Start Num: 37

Candidate Starts for Stultus_43:

(19, 39175), (Start: 37 @39274 has 38 MA's), (45, 39316), (49, 39331), (51, 39343), (71, 39496), (83, 39619), (88, 39655), (94, 39706),

Gene: Sukkupi_52 Start: 38578, Stop: 39006, Start Num: 40

Candidate Starts for Sukkupi_52:

(28, 38533), (29, 38536), (32, 38545), (Start: 40 @38578 has 37 MA's), (61, 38749), (70, 38791), (82, 38917), (85, 38941),

Gene: SuperSulley_53 Start: 40293, Stop: 40721, Start Num: 40

Candidate Starts for SuperSulley_53:

(Start: 40 @40293 has 37 MA's), (61, 40464), (86, 40662),

Gene: Tangent_45 Start: 39348, Stop: 39797, Start Num: 37

Candidate Starts for Tangent_45:

(18, 39240), (19, 39249), (Start: 37 @39348 has 38 MA's), (45, 39390), (49, 39405), (51, 39417), (71, 39570), (83, 39693), (88, 39729), (94, 39780),

Gene: Tangerine_44 Start: 38756, Stop: 39202, Start Num: 37

Candidate Starts for Tangerine_44:

(5, 38498), (9, 38549), (19, 38654), (20, 38669), (Start: 37 @38756 has 38 MA's), (45, 38798), (49, 38813), (51, 38825), (71, 38978), (88, 39137), (94, 39185),

Gene: ThankyouJordi_23 Start: 21874, Stop: 22287, Start Num: 38

Candidate Starts for ThankyouJordi_23:

(2, 21628), (6, 21676), (7, 21703), (18, 21805), (24, 21853), (Start: 38 @21874 has 19 MA's), (52, 21949), (53, 21958), (60, 22003), (81, 22213),

Gene: Thing3_42 Start: 38577, Stop: 39026, Start Num: 37

Candidate Starts for Thing3_42:

(19, 38478), (Start: 37 @38577 has 38 MA's), (45, 38619), (49, 38634), (51, 38646), (71, 38799), (83, 38922), (88, 38958), (94, 39009),

Gene: TimTam_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for TimTam_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Tracker_51 Start: 38952, Stop: 39377, Start Num: 40

Candidate Starts for Tracker_51:

(26, 38895), (30, 38916), (Start: 40 @38952 has 37 MA's), (61, 39123), (70, 39165),

Gene: Turuncu_56 Start: 40541, Stop: 40978, Start Num: 40

Candidate Starts for Turuncu_56:

(22, 40457), (25, 40472), (31, 40502), (33, 40511), (Start: 40 @40541 has 37 MA's), (55, 40631), (61, 40712), (70, 40754), (75, 40814), (86, 40910),

Gene: Tycho_44 Start: 38843, Stop: 39289, Start Num: 37

Candidate Starts for Tycho_44:

(3, 38555), (14, 38666), (19, 38741), (20, 38756), (Start: 37 @38843 has 38 MA's), (45, 38885), (49, 38900), (51, 38912), (71, 39065), (88, 39224), (94, 39272),

Gene: VanLee_31 Start: 26056, Stop: 26493, Start Num: 38

Candidate Starts for VanLee_31:

(13, 25918), (23, 26029), (Start: 38 @26056 has 19 MA's), (45, 26095), (49, 26110), (50, 26116), (53, 26140), (62, 26239), (68, 26272), (93, 26482),

Gene: Vivi2_47 Start: 40374, Stop: 40823, Start Num: 37

Candidate Starts for Vivi2_47:

(19, 40275), (Start: 37 @40374 has 38 MA's), (45, 40416), (49, 40431), (51, 40443), (71, 40596), (83, 40719), (88, 40755), (94, 40806),

Gene: Volt_66 Start: 36531, Stop: 36920, Start Num: 39

Candidate Starts for Volt_66:

(Start: 39 @36531 has 6 MA's), (45, 36567), (57, 36639), (68, 36744), (72, 36780), (76, 36822), (79, 36855),

Gene: Vordorf_27 Start: 22487, Stop: 22912, Start Num: 38

Candidate Starts for Vordorf_27:

(Start: 38 @22487 has 19 MA's), (45, 22526), (49, 22541), (53, 22571), (68, 22703), (74, 22763),

Gene: WelcomeAyanna_23 Start: 21874, Stop: 22287, Start Num: 38

Candidate Starts for WelcomeAyanna_23:

(2, 21628), (6, 21676), (7, 21703), (18, 21805), (24, 21853), (Start: 38 @21874 has 19 MA's), (52, 21949), (53, 21958), (60, 22003), (81, 22213),

Gene: Wheezy_51 Start: 39157, Stop: 39582, Start Num: 40

Candidate Starts for Wheezy_51:

(26, 39100), (30, 39121), (Start: 40 @39157 has 37 MA's), (61, 39328), (70, 39370),

Gene: WhoseManz_52 Start: 36638, Stop: 37066, Start Num: 40

Candidate Starts for WhoseManz_52:

(32, 36605), (Start: 40 @36638 has 37 MA's), (61, 36809), (70, 36851), (82, 36977),

Gene: Yndexa_52 Start: 38578, Stop: 39006, Start Num: 40

Candidate Starts for Yndexa_52:

(28, 38533), (29, 38536), (32, 38545), (Start: 40 @38578 has 37 MA's), (61, 38749), (70, 38791), (82, 38917), (85, 38941),

Gene: YorkOnyx_45 Start: 39100, Stop: 39546, Start Num: 37

Candidate Starts for YorkOnyx_45:

(9, 38893), (19, 38998), (20, 39013), (Start: 37 @39100 has 38 MA's), (45, 39142), (49, 39157), (51, 39169), (71, 39322), (88, 39481), (94, 39529),

Gene: Ziko_66 Start: 36353, Stop: 36742, Start Num: 39

Candidate Starts for Ziko_66:

(Start: 39 @36353 has 6 MA's), (45, 36389), (57, 36461), (68, 36566), (72, 36602), (76, 36644), (79, 36677),

Gene: Zirinka_24 Start: 21911, Stop: 22324, Start Num: 38

Candidate Starts for Zirinka_24:

(1, 21641), (16, 21800), (24, 21890), (Start: 38 @21911 has 19 MA's), (52, 21986), (53, 21995), (60, 22040), (63, 22103), (81, 22250),