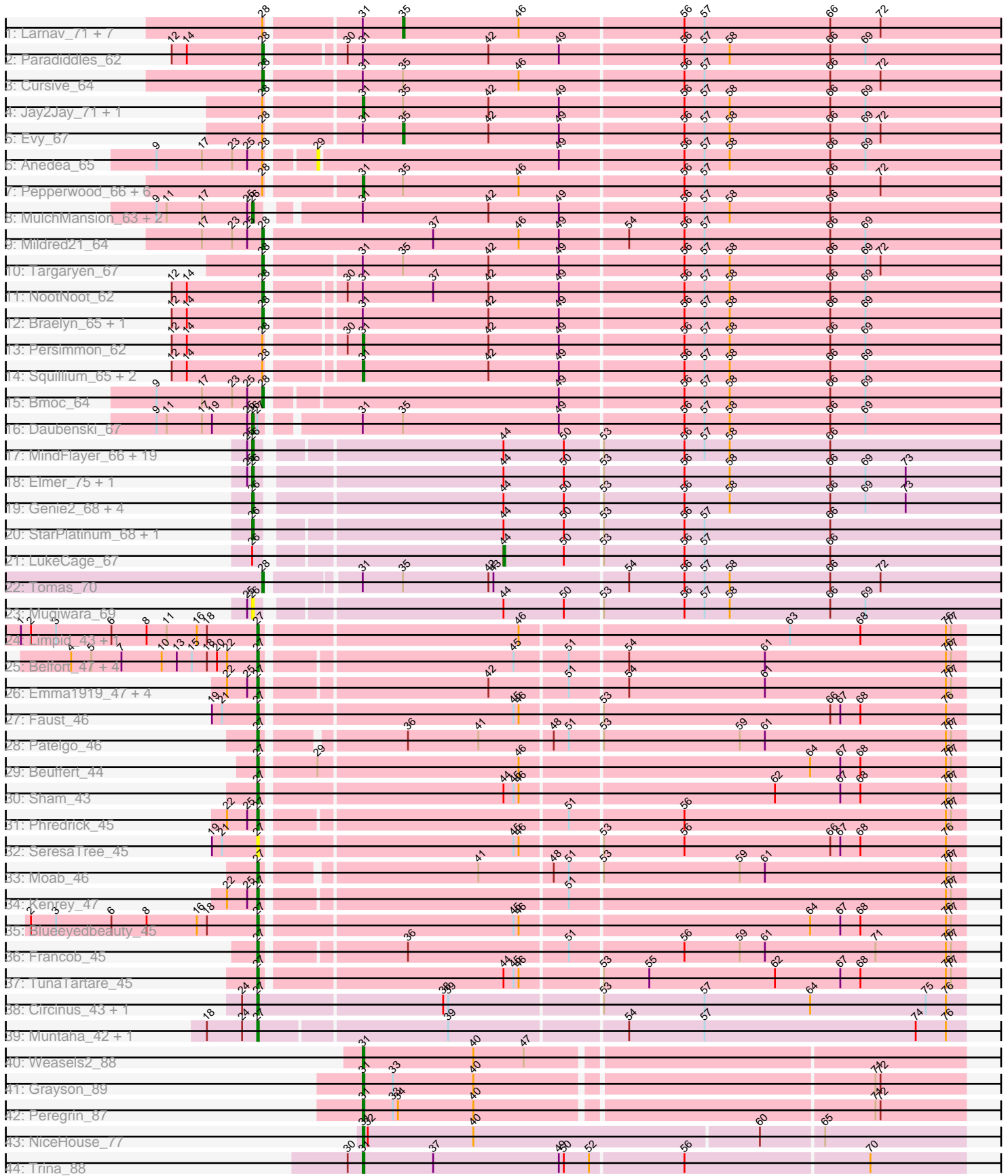


Pham 154616



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 154616 Report

This analysis was run 04/12/24 on database version 558.

Pham number 154616 has 99 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Larnav_71, BlueOtter_68, HangryHippo_68, Teutsch_66, PacManQ_67, Tribute_64, Samisti12_66, Lululemon_67
- Track 2 : Paradiddles_62
- Track 3 : Cursive_64
- Track 4 : Jay2Jay_71, Warpy_70
- Track 5 : Evy_67
- Track 6 : Anedea_65
- Track 7 : Pepperwood_66, Leo04_67, Watermoore_66, Cross_66, Peebs_65, Sushi23_66, EGole_67
- Track 8 : MulchMansion_63, LilMartin_63, Angela_63
- Track 9 : Mildred21_64
- Track 10 : Targaryen_67
- Track 11 : NootNoot_62
- Track 12 : Braelyn_65, Liandry_65
- Track 13 : Persimmon_62
- Track 14 : Squillium_65, Bartholomune_64, PinkiePie_64
- Track 15 : Bmoc_64
- Track 16 : Daubenski_67
- Track 17 : MindFlayer_66, Wipeout_66, Bordeaux_66, Battuta_66, Birchlyn_65, SaltySpitoon_68, Karimac_67, Gibbi_72, TomSawyer_66, Spilled_69, Spelly_68, Jollison_73, IchabodCrane_65, JimJam_68, KentuckyRacer_72, Starbow_66, PumpkinSpice_67, Amabiko_68, CeilingFan_70, Quarant19_68
- Track 18 : Elmer_75, Wofford_67
- Track 19 : Genie2_68, Stanimal_68, Sollertia_68, Yaboi_68, BoomerJR_68
- Track 20 : StarPlatinum_68, Enygma_68
- Track 21 : LukeCage_67
- Track 22 : Tomas_70
- Track 23 : Mugiwara_69
- Track 24 : Limpid_43, Annadreamy_43
- Track 25 : Belfort_47, Stigma_46, Karp_45, Comrade_46, SparkleGoddess_46
- Track 26 : Emma1919_47, Gilson_47, MeganTheeKilla_45, Forrest_47, Jada_45
- Track 27 : Faust_46
- Track 28 : Patelgo_46
- Track 29 : Beuffert_44
- Track 30 : Sham_43
- Track 31 : Phredrick_45
- Track 32 : SeresaTree_45

- Track 33 : Moab_46
- Track 34 : Kenrey_47
- Track 35 : Blueeyedbeauty_45
- Track 36 : Francob_45
- Track 37 : TunaTartare_45
- Track 38 : Circinus_43, BillNye_41
- Track 39 : Muntaha_42, Wakanda_42
- Track 40 : Weasels2_88
- Track 41 : Grayson_89
- Track 42 : Peregrin_87
- Track 43 : NiceHouse_77
- Track 44 : Trina_88

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

The start number called the most often in the published annotations is 26, it was called in 28 of the 86 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amabiko_68, Angela_63, Battuta_66, Birchlyn_65, BoomerJR_68, Bordeaux_66, CeilingFan_70, Daubenski_67, Elmer_75, Enygma_68, Genie2_68, Gibbi_72, IchabodCrane_65, JimJam_68, Jollison_73, Karimac_67, KentuckyRacer_72, LilMartin_63, MindFlayer_66, Mugiwara_69, MulchMansion_63, PumpkinSpice_67, Quaran19_68, SaltySpittoon_68, Sollertia_68, Spelly_68, Spilled_69, Stanimal_68, StarPlatinum_68, Starbow_66, TomSawyer_66, Wipeout_66, Wofford_67, Yaboi_68,

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

- LukeCage_67,

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

- Anedea_65, Annadreamy_43, Bartholomune_64, Belfort_47, Beuffert_44, BillNye_41, BlueOtter_68, Blueeyedbeauty_45, Bmoc_64, Braelyn_65, Circinus_43, Comrade_46, Cross_66, Cursive_64, EGole_67, Emma1919_47, Evy_67, Faust_46, Forrest_47, Francob_45, Gilson_47, Grayson_89, HangryHippo_68, Jada_45, Jay2Jay_71, Karp_45, Kenrey_47, Larnav_71, Leo04_67, Liandry_65, Limpid_43, Lululemon_67, MeganTheeKilla_45, Mildred21_64, Moab_46, Muntaha_42, NiceHouse_77, NootNoot_62, PacManQ_67, Paradiddles_62, Patelgo_46, Peebs_65, Pepperwood_66, Peregrin_87, Persimmon_62, Phredrick_45, PinkiePie_64, Samisti12_66, SeresaTree_45, Sham_43, SparkleGoddess_46, Squillium_65, Stigma_46, Sushi23_66, Targaryen_67, Teutsch_66, Tomas_70, Tribute_64, Trina_88, TunaTartare_45, Wakanda_42, Warpy_70, Watermoore_66, Weasels2_88,

Summary by start number:

Start 26:

- Found in 35 of 99 (35.4%) of genes in pham
- Manual Annotations of this start: 28 of 86
- Called 97.1% of time when present

- Phage (with cluster) where this start called: Amabiko_68 (BE2), Angela_63 (BE1), Battuta_66 (BE2), Birchlyn_65 (BE2), BoomerJR_68 (BE2), Bordeaux_66 (BE2), CeilingFan_70 (BE2), Daubenski_67 (BE1), Elmer_75 (BE2), Enygma_68 (BE2), Genie2_68 (BE2), Gibbi_72 (BE2), IchabodCrane_65 (BE2), JimJam_68 (BE2), Jollison_73 (BE2), Karimac_67 (BE2), KentuckyRacer_72 (BE2), LilMartin_63 (BE1), MindFlayer_66 (BE2), Mugiwara_69 (BE2), MulchMansion_63 (BE1), PumpkinSpice_67 (BE2), Quarant19_68 (BE2), SaltySpittoon_68 (BE2), Sollertia_68 (BE2), Spelly_68 (BE2), Spilled_69 (BE2), Stanimal_68 (BE2), StarPlatinum_68 (BE2), Starbow_66 (BE2), TomSawyer_66 (BE2), Wipeout_66 (BE2), Wofford_67 (BE2), Yaboi_68 (BE2),

Start 27:

- Found in 28 of 99 (28.3%) of genes in pham
- Manual Annotations of this start: 26 of 86
- Called 96.4% of time when present
- Phage (with cluster) where this start called: Annadreamy_43 (BK1), Belfort_47 (BK1), Beuffert_44 (BK1), BillNye_41 (BK2), Blueeyedbeauty_45 (BK1), Circinus_43 (BK2), Comrade_46 (BK1), Emma1919_47 (BK1), Faust_46 (BK1), Forrest_47 (BK1), Francob_45 (BK1), Gilson_47 (BK1), Jada_45 (BK1), Karp_45 (BK1), Kenrey_47 (BK1), Limpid_43 (BK1), MeganTheeKilla_45 (BK1), Moab_46 (BK1), Muntaha_42 (BK2), Patelgo_46 (BK1), Phredrick_45 (BK1), SeresaTree_45 (BK1), Sham_43 (BK1), SparkleGoddess_46 (BK1), Stigma_46 (BK1), TunaTartare_45 (BK1), Wakanda_42 (BK2),

Start 28:

- Found in 32 of 99 (32.3%) of genes in pham
- Manual Annotations of this start: 9 of 86
- Called 28.1% of time when present
- Phage (with cluster) where this start called: Bmoc_64 (BE1), Braelyn_65 (BE1), Cursive_64 (BE1), Liandry_65 (BE1), Mildred21_64 (BE1), NootNoot_62 (BE1), Paradiddles_62 (BE1), Targaryen_67 (BE1), Tomas_70 (BE2),

Start 29:

- Found in 2 of 99 (2.0%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Anedea_65 (BE1),

Start 31:

- Found in 38 of 99 (38.4%) of genes in pham
- Manual Annotations of this start: 18 of 86
- Called 47.4% of time when present
- Phage (with cluster) where this start called: Bartholomune_64 (BE1), Cross_66 (BE1), EGole_67 (BE1), Grayson_89 (CB), Jay2Jay_71 (BE1), Leo04_67 (BE1), NiceHouse_77 (CE), Peebs_65 (BE1), Pepperwood_66 (BE1), Peregrin_87 (CB), Persimmon_62 (BE1), PinkiePie_64 (BE1), Squillium_65 (BE1), Sushi23_66 (BE1), Trina_88 (CE), Warpy_70 (BE1), Watermoore_66 (BE1), Weasels2_88 (CB),

Start 35:

- Found in 22 of 99 (22.2%) of genes in pham
- Manual Annotations of this start: 4 of 86
- Called 40.9% of time when present

- Phage (with cluster) where this start called: BlueOtter_68 (BE1), Evy_67 (BE1), HangryHippo_68 (BE1), Larnav_71 (BE1), Lululemon_67 (BE1), PacManQ_67 (BE1), Samisti12_66 (BE1), Teutsch_66 (BE1), Tribute_64 (BE1),

Start 44:

- Found in 33 of 99 (33.3%) of genes in pham
- Manual Annotations of this start: 1 of 86
- Called 3.0% of time when present
- Phage (with cluster) where this start called: LukeCage_67 (BE2),

Summary by clusters:

There are 6 clusters represented in this pham: CB, CE, BK1, BK2, BE2, BE1,

Info for manual annotations of cluster BE1:

- Start number 26 was manually annotated 4 times for cluster BE1.
- Start number 28 was manually annotated 8 times for cluster BE1.
- Start number 31 was manually annotated 13 times for cluster BE1.
- Start number 35 was manually annotated 4 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 26 was manually annotated 24 times for cluster BE2.
- Start number 28 was manually annotated 1 time for cluster BE2.
- Start number 44 was manually annotated 1 time for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 27 was manually annotated 22 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 27 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster CB:

- Start number 31 was manually annotated 3 times for cluster CB.

Info for manual annotations of cluster CE:

- Start number 31 was manually annotated 2 times for cluster CE.

Gene Information:

Gene: Amabiko_68 Start: 51148, Stop: 51591, Start Num: 26

Candidate Starts for Amabiko_68:

(25, 51145), (Start: 26 @51148 has 28 MA's), (Start: 44 @51283 has 1 MA's), (50, 51319), (53, 51340), (56, 51388), (57, 51400), (58, 51415), (66, 51475),

Gene: Anedea_65 Start: 50749, Stop: 51165, Start Num: 29

Candidate Starts for Anedea_65:

(9, 50662), (17, 50689), (23, 50707), (25, 50716), (Start: 28 @50725 has 9 MA's), (29, 50749), (49, 50890), (56, 50962), (57, 50974), (58, 50989), (66, 51049), (69, 51070),

Gene: Angela_63 Start: 50183, Stop: 50626, Start Num: 26

Candidate Starts for Angela_63:

(9, 50126), (11, 50132), (17, 50153), (25, 50180), (Start: 26 @50183 has 28 MA's), (Start: 31 @50234 has 18 MA's), (42, 50309), (49, 50351), (56, 50423), (57, 50435), (58, 50450), (66, 50510),

Gene: Annadreamy_43 Start: 39981, Stop: 40388, Start Num: 27

Candidate Starts for Annadreamy_43:

(1, 39840), (2, 39846), (3, 39861), (6, 39894), (8, 39915), (11, 39927), (16, 39945), (18, 39951), (Start: 27 @39981 has 26 MA's), (46, 40128), (63, 40284), (68, 40326), (76, 40377), (77, 40380),

Gene: Bartholomune_64 Start: 50499, Stop: 50891, Start Num: 31

Candidate Starts for Bartholomune_64:

(12, 50397), (14, 50406), (Start: 28 @50451 has 9 MA's), (Start: 31 @50499 has 18 MA's), (42, 50574), (49, 50616), (56, 50688), (57, 50700), (58, 50715), (66, 50775), (69, 50796),

Gene: Battuta_66 Start: 51122, Stop: 51565, Start Num: 26

Candidate Starts for Battuta_66:

(25, 51119), (Start: 26 @51122 has 28 MA's), (Start: 44 @51257 has 1 MA's), (50, 51293), (53, 51314), (56, 51362), (57, 51374), (58, 51389), (66, 51449),

Gene: Belfort_47 Start: 42499, Stop: 42903, Start Num: 27

Candidate Starts for Belfort_47:

(4, 42388), (5, 42400), (7, 42418), (10, 42442), (13, 42451), (15, 42460), (18, 42469), (20, 42475), (22, 42481), (Start: 27 @42499 has 26 MA's), (45, 42640), (51, 42670), (54, 42703), (61, 42784), (76, 42892), (77, 42895),

Gene: Beuffert_44 Start: 41122, Stop: 41529, Start Num: 27

Candidate Starts for Beuffert_44:

(Start: 27 @41122 has 26 MA's), (29, 41152), (46, 41269), (64, 41437), (67, 41455), (68, 41467), (76, 41518), (77, 41521),

Gene: BillNye_41 Start: 43372, Stop: 43785, Start Num: 27

Candidate Starts for BillNye_41:

(24, 43363), (Start: 27 @43372 has 26 MA's), (38, 43480), (39, 43483), (53, 43570), (57, 43630), (64, 43693), (75, 43762), (76, 43774),

Gene: Birchlyn_65 Start: 49005, Stop: 49448, Start Num: 26

Candidate Starts for Birchlyn_65:

(25, 49002), (Start: 26 @49005 has 28 MA's), (Start: 44 @49140 has 1 MA's), (50, 49176), (53, 49197), (56, 49245), (57, 49257), (58, 49272), (66, 49332),

Gene: BlueOtter_68 Start: 51903, Stop: 52271, Start Num: 35

Candidate Starts for BlueOtter_68:

(Start: 28 @51828 has 9 MA's), (Start: 31 @51879 has 18 MA's), (Start: 35 @51903 has 4 MA's), (46, 51972), (56, 52068), (57, 52080), (66, 52155), (72, 52185),

Gene: Blueeyedbeauty_45 Start: 40493, Stop: 40900, Start Num: 27

Candidate Starts for Blueeyedbeauty_45:

(2, 40358), (3, 40373), (6, 40406), (8, 40427), (16, 40457), (18, 40463), (Start: 27 @40493 has 26 MA's), (45, 40637), (46, 40640), (64, 40808), (67, 40826), (68, 40838), (76, 40889), (77, 40892),

Gene: Bmoc_64 Start: 50529, Stop: 50969, Start Num: 28

Candidate Starts for Bmoc_64:

(9, 50466), (17, 50493), (23, 50511), (25, 50520), (Start: 28 @50529 has 9 MA's), (49, 50694), (56, 50766), (57, 50778), (58, 50793), (66, 50853), (69, 50874),

Gene: BoomerJR_68 Start: 50999, Stop: 51445, Start Num: 26

Candidate Starts for BoomerJR_68:

(Start: 26 @50999 has 28 MA's), (Start: 44 @51137 has 1 MA's), (50, 51173), (53, 51194), (56, 51242), (58, 51269), (66, 51329), (69, 51350), (73, 51374),

Gene: Bordeaux_66 Start: 51277, Stop: 51720, Start Num: 26

Candidate Starts for Bordeaux_66:

(25, 51274), (Start: 26 @51277 has 28 MA's), (Start: 44 @51412 has 1 MA's), (50, 51448), (53, 51469), (56, 51517), (57, 51529), (58, 51544), (66, 51604),

Gene: Braelyn_65 Start: 51218, Stop: 51658, Start Num: 28

Candidate Starts for Braelyn_65:

(12, 51164), (14, 51173), (Start: 28 @51218 has 9 MA's), (Start: 31 @51266 has 18 MA's), (42, 51341), (49, 51383), (56, 51455), (57, 51467), (58, 51482), (66, 51542), (69, 51563),

Gene: CeilingFan_70 Start: 51037, Stop: 51480, Start Num: 26

Candidate Starts for CeilingFan_70:

(25, 51034), (Start: 26 @51037 has 28 MA's), (Start: 44 @51172 has 1 MA's), (50, 51208), (53, 51229), (56, 51277), (57, 51289), (58, 51304), (66, 51364),

Gene: Circinus_43 Start: 43511, Stop: 43924, Start Num: 27

Candidate Starts for Circinus_43:

(24, 43502), (Start: 27 @43511 has 26 MA's), (38, 43619), (39, 43622), (53, 43709), (57, 43769), (64, 43832), (75, 43901), (76, 43913),

Gene: Comrade_46 Start: 42114, Stop: 42518, Start Num: 27

Candidate Starts for Comrade_46:

(4, 42003), (5, 42015), (7, 42033), (10, 42057), (13, 42066), (15, 42075), (18, 42084), (20, 42090), (22, 42096), (Start: 27 @42114 has 26 MA's), (45, 42255), (51, 42285), (54, 42318), (61, 42399), (76, 42507), (77, 42510),

Gene: Cross_66 Start: 51880, Stop: 52272, Start Num: 31

Candidate Starts for Cross_66:

(Start: 28 @51829 has 9 MA's), (Start: 31 @51880 has 18 MA's), (Start: 35 @51904 has 4 MA's), (46, 51973), (56, 52069), (57, 52081), (66, 52156), (72, 52186),

Gene: Cursive_64 Start: 51354, Stop: 51797, Start Num: 28

Candidate Starts for Cursive_64:

(Start: 28 @51354 has 9 MA's), (Start: 31 @51405 has 18 MA's), (Start: 35 @51429 has 4 MA's), (46, 51498), (56, 51594), (57, 51606), (66, 51681), (72, 51711),

Gene: Daubenski_67 Start: 51592, Stop: 52038, Start Num: 26

Candidate Starts for Daubenski_67:

(9, 51535), (11, 51541), (17, 51562), (19, 51568), (25, 51589), (Start: 26 @51592 has 28 MA's), (Start: 27 @51595 has 26 MA's), (Start: 31 @51646 has 18 MA's), (Start: 35 @51670 has 4 MA's), (49, 51763), (56, 51835), (57, 51847), (58, 51862), (66, 51922), (69, 51943),

Gene: EGole_67 Start: 52826, Stop: 53218, Start Num: 31

Candidate Starts for EGole_67:

(Start: 28 @52775 has 9 MA's), (Start: 31 @52826 has 18 MA's), (Start: 35 @52850 has 4 MA's), (46, 52919), (56, 53015), (57, 53027), (66, 53102), (72, 53132),

Gene: Elmer_75 Start: 52212, Stop: 52658, Start Num: 26

Candidate Starts for Elmer_75:

(25, 52209), (Start: 26 @52212 has 28 MA's), (Start: 44 @52350 has 1 MA's), (50, 52386), (53, 52407), (56, 52455), (58, 52482), (66, 52542), (69, 52563), (73, 52587),

Gene: Emma1919_47 Start: 40904, Stop: 41308, Start Num: 27

Candidate Starts for Emma1919_47:

(22, 40886), (25, 40898), (Start: 27 @40904 has 26 MA's), (42, 41030), (51, 41075), (54, 41108), (61, 41189), (76, 41297), (77, 41300),

Gene: Enygma_68 Start: 52940, Stop: 53383, Start Num: 26

Candidate Starts for Enygma_68:

(Start: 26 @52940 has 28 MA's), (Start: 44 @53075 has 1 MA's), (50, 53111), (53, 53132), (56, 53180), (57, 53192), (66, 53267),

Gene: Evy_67 Start: 51893, Stop: 52261, Start Num: 35

Candidate Starts for Evy_67:

(Start: 28 @51818 has 9 MA's), (Start: 31 @51869 has 18 MA's), (Start: 35 @51893 has 4 MA's), (42, 51944), (49, 51986), (56, 52058), (57, 52070), (58, 52085), (66, 52145), (69, 52166), (72, 52175),

Gene: Faust_46 Start: 41424, Stop: 41831, Start Num: 27

Candidate Starts for Faust_46:

(19, 41397), (21, 41403), (Start: 27 @41424 has 26 MA's), (45, 41568), (46, 41571), (53, 41616), (66, 41751), (67, 41757), (68, 41769), (76, 41820),

Gene: Forrest_47 Start: 41039, Stop: 41443, Start Num: 27

Candidate Starts for Forrest_47:

(22, 41021), (25, 41033), (Start: 27 @41039 has 26 MA's), (42, 41165), (51, 41210), (54, 41243), (61, 41324), (76, 41432), (77, 41435),

Gene: Francob_45 Start: 40974, Stop: 41378, Start Num: 27

Candidate Starts for Francob_45:

(Start: 27 @40974 has 26 MA's), (36, 41052), (51, 41145), (56, 41211), (59, 41244), (61, 41259), (71, 41325), (76, 41367), (77, 41370),

Gene: Genie2_68 Start: 51113, Stop: 51559, Start Num: 26

Candidate Starts for Genie2_68:

(Start: 26 @51113 has 28 MA's), (Start: 44 @51251 has 1 MA's), (50, 51287), (53, 51308), (56, 51356), (58, 51383), (66, 51443), (69, 51464), (73, 51488),

Gene: Gibbi_72 Start: 51260, Stop: 51703, Start Num: 26

Candidate Starts for Gibbi_72:

(25, 51257), (Start: 26 @51260 has 28 MA's), (Start: 44 @51395 has 1 MA's), (50, 51431), (53, 51452), (56, 51500), (57, 51512), (58, 51527), (66, 51587),

Gene: Gilson_47 Start: 40857, Stop: 41261, Start Num: 27

Candidate Starts for Gilson_47:

(22, 40839), (25, 40851), (Start: 27 @40857 has 26 MA's), (42, 40983), (51, 41028), (54, 41061), (61, 41142), (76, 41250), (77, 41253),

Gene: Grayson_89 Start: 54653, Stop: 55000, Start Num: 31

Candidate Starts for Grayson_89:

(Start: 31 @54653 has 18 MA's), (33, 54671), (40, 54719), (71, 54947), (72, 54950),

Gene: HangryHippo_68 Start: 51903, Stop: 52271, Start Num: 35

Candidate Starts for HangryHippo_68:

(Start: 28 @51828 has 9 MA's), (Start: 31 @51879 has 18 MA's), (Start: 35 @51903 has 4 MA's), (46, 51972), (56, 52068), (57, 52080), (66, 52155), (72, 52185),

Gene: IchabodCrane_65 Start: 50849, Stop: 51292, Start Num: 26

Candidate Starts for IchabodCrane_65:

(25, 50846), (Start: 26 @50849 has 28 MA's), (Start: 44 @50984 has 1 MA's), (50, 51020), (53, 51041), (56, 51089), (57, 51101), (58, 51116), (66, 51176),

Gene: Jada_45 Start: 40221, Stop: 40625, Start Num: 27

Candidate Starts for Jada_45:

(22, 40203), (25, 40215), (Start: 27 @40221 has 26 MA's), (42, 40347), (51, 40392), (54, 40425), (61, 40506), (76, 40614), (77, 40617),

Gene: Jay2Jay_71 Start: 52722, Stop: 53114, Start Num: 31

Candidate Starts for Jay2Jay_71:

(Start: 28 @52671 has 9 MA's), (Start: 31 @52722 has 18 MA's), (Start: 35 @52746 has 4 MA's), (42, 52797), (49, 52839), (56, 52911), (57, 52923), (58, 52938), (66, 52998), (69, 53019),

Gene: JimJam_68 Start: 51223, Stop: 51666, Start Num: 26

Candidate Starts for JimJam_68:

(25, 51220), (Start: 26 @51223 has 28 MA's), (Start: 44 @51358 has 1 MA's), (50, 51394), (53, 51415), (56, 51463), (57, 51475), (58, 51490), (66, 51550),

Gene: Jollison_73 Start: 51105, Stop: 51548, Start Num: 26

Candidate Starts for Jollison_73:

(25, 51102), (Start: 26 @51105 has 28 MA's), (Start: 44 @51240 has 1 MA's), (50, 51276), (53, 51297), (56, 51345), (57, 51357), (58, 51372), (66, 51432),

Gene: Karimac_67 Start: 51254, Stop: 51697, Start Num: 26

Candidate Starts for Karimac_67:

(25, 51251), (Start: 26 @51254 has 28 MA's), (Start: 44 @51389 has 1 MA's), (50, 51425), (53, 51446), (56, 51494), (57, 51506), (58, 51521), (66, 51581),

Gene: Karp_45 Start: 41714, Stop: 42118, Start Num: 27

Candidate Starts for Karp_45:

(4, 41603), (5, 41615), (7, 41633), (10, 41657), (13, 41666), (15, 41675), (18, 41684), (20, 41690), (22, 41696), (Start: 27 @41714 has 26 MA's), (45, 41855), (51, 41885), (54, 41918), (61, 41999), (76, 42107), (77, 42110),

Gene: Kenrey_47 Start: 41049, Stop: 41453, Start Num: 27

Candidate Starts for Kenrey_47:

(22, 41031), (25, 41043), (Start: 27 @41049 has 26 MA's), (51, 41220), (76, 41442), (77, 41445),

Gene: KentuckyRacer_72 Start: 51038, Stop: 51481, Start Num: 26

Candidate Starts for KentuckyRacer_72:

(25, 51035), (Start: 26 @51038 has 28 MA's), (Start: 44 @51173 has 1 MA's), (50, 51209), (53, 51230), (56, 51278), (57, 51290), (58, 51305), (66, 51365),

Gene: Larnav_71 Start: 51888, Stop: 52256, Start Num: 35

Candidate Starts for Larnav_71:

(Start: 28 @51813 has 9 MA's), (Start: 31 @51864 has 18 MA's), (Start: 35 @51888 has 4 MA's), (46, 51957), (56, 52053), (57, 52065), (66, 52140), (72, 52170),

Gene: Leo04_67 Start: 52379, Stop: 52771, Start Num: 31

Candidate Starts for Leo04_67:

(Start: 28 @52328 has 9 MA's), (Start: 31 @52379 has 18 MA's), (Start: 35 @52403 has 4 MA's), (46, 52472), (56, 52568), (57, 52580), (66, 52655), (72, 52685),

Gene: Liandry_65 Start: 51200, Stop: 51640, Start Num: 28

Candidate Starts for Liandry_65:

(12, 51146), (14, 51155), (Start: 28 @51200 has 9 MA's), (Start: 31 @51248 has 18 MA's), (42, 51323), (49, 51365), (56, 51437), (57, 51449), (58, 51464), (66, 51524), (69, 51545),

Gene: LilMartin_63 Start: 50131, Stop: 50574, Start Num: 26

Candidate Starts for LilMartin_63:

(9, 50074), (11, 50080), (17, 50101), (25, 50128), (Start: 26 @50131 has 28 MA's), (Start: 31 @50182 has 18 MA's), (42, 50257), (49, 50299), (56, 50371), (57, 50383), (58, 50398), (66, 50458),

Gene: Limpid_43 Start: 39980, Stop: 40387, Start Num: 27

Candidate Starts for Limpid_43:

(1, 39839), (2, 39845), (3, 39860), (6, 39893), (8, 39914), (11, 39926), (16, 39944), (18, 39950), (Start: 27 @39980 has 26 MA's), (46, 40127), (63, 40283), (68, 40325), (76, 40376), (77, 40379),

Gene: LukeCage_67 Start: 51143, Stop: 51451, Start Num: 44

Candidate Starts for LukeCage_67:

(Start: 26 @51008 has 28 MA's), (Start: 44 @51143 has 1 MA's), (50, 51179), (53, 51200), (56, 51248), (57, 51260), (66, 51335),

Gene: Lululemon_67 Start: 51284, Stop: 51652, Start Num: 35

Candidate Starts for Lululemon_67:

(Start: 28 @51209 has 9 MA's), (Start: 31 @51260 has 18 MA's), (Start: 35 @51284 has 4 MA's), (46, 51353), (56, 51449), (57, 51461), (66, 51536), (72, 51566),

Gene: MeganTheeKilla_45 Start: 40218, Stop: 40622, Start Num: 27

Candidate Starts for MeganTheeKilla_45:

(22, 40200), (25, 40212), (Start: 27 @40218 has 26 MA's), (42, 40344), (51, 40389), (54, 40422), (61, 40503), (76, 40611), (77, 40614),

Gene: Mildred21_64 Start: 50324, Stop: 50770, Start Num: 28

Candidate Starts for Mildred21_64:

(17, 50288), (23, 50306), (25, 50315), (Start: 28 @50324 has 9 MA's), (37, 50420), (46, 50471), (49, 50495), (54, 50534), (56, 50567), (57, 50579), (66, 50654), (69, 50675),

Gene: MindFlayer_66 Start: 50756, Stop: 51199, Start Num: 26

Candidate Starts for MindFlayer_66:

(25, 50753), (Start: 26 @50756 has 28 MA's), (Start: 44 @50891 has 1 MA's), (50, 50927), (53, 50948), (56, 50996), (57, 51008), (58, 51023), (66, 51083),

Gene: Moab_46 Start: 42091, Stop: 42492, Start Num: 27

Candidate Starts for Moab_46:

(Start: 27 @42091 has 26 MA's), (41, 42208), (48, 42250), (51, 42259), (53, 42277), (59, 42358), (61, 42373), (76, 42481), (77, 42484),

Gene: Mugiwara_69 Start: 51507, Stop: 51950, Start Num: 26

Candidate Starts for Mugiwara_69:

(25, 51504), (Start: 26 @51507 has 28 MA's), (Start: 44 @51642 has 1 MA's), (50, 51678), (53, 51699), (56, 51747), (57, 51759), (58, 51774), (66, 51834), (69, 51855),

Gene: MulchMansion_63 Start: 50131, Stop: 50574, Start Num: 26

Candidate Starts for MulchMansion_63:

(9, 50074), (11, 50080), (17, 50101), (25, 50128), (Start: 26 @50131 has 28 MA's), (Start: 31 @50182 has 18 MA's), (42, 50257), (49, 50299), (56, 50371), (57, 50383), (58, 50398), (66, 50458),

Gene: Muntaha_42 Start: 41788, Stop: 42198, Start Num: 27

Candidate Starts for Muntaha_42:

(18, 41758), (24, 41779), (Start: 27 @41788 has 26 MA's), (39, 41896), (54, 41998), (57, 42043), (74, 42169), (76, 42187),

Gene: NiceHouse_77 Start: 57280, Stop: 57633, Start Num: 31

Candidate Starts for NiceHouse_77:

(Start: 31 @57280 has 18 MA's), (32, 57283), (40, 57346), (60, 57514), (65, 57550),

Gene: NootNoot_62 Start: 50114, Stop: 50554, Start Num: 28

Candidate Starts for NootNoot_62:

(12, 50060), (14, 50069), (Start: 28 @50114 has 9 MA's), (30, 50153), (Start: 31 @50162 has 18 MA's), (37, 50204), (42, 50237), (49, 50279), (56, 50351), (57, 50363), (58, 50378), (66, 50438), (69, 50459),

Gene: PacManQ_67 Start: 51284, Stop: 51652, Start Num: 35

Candidate Starts for PacManQ_67:

(Start: 28 @51209 has 9 MA's), (Start: 31 @51260 has 18 MA's), (Start: 35 @51284 has 4 MA's), (46, 51353), (56, 51449), (57, 51461), (66, 51536), (72, 51566),

Gene: Paradiddles_62 Start: 50378, Stop: 50818, Start Num: 28

Candidate Starts for Paradiddles_62:

(12, 50324), (14, 50333), (Start: 28 @50378 has 9 MA's), (30, 50417), (Start: 31 @50426 has 18 MA's), (42, 50501), (49, 50543), (56, 50615), (57, 50627), (58, 50642), (66, 50702), (69, 50723),

Gene: Patelgo_46 Start: 42278, Stop: 42679, Start Num: 27

Candidate Starts for Patelgo_46:

(Start: 27 @42278 has 26 MA's), (36, 42353), (41, 42395), (48, 42437), (51, 42446), (53, 42464), (59, 42545), (61, 42560), (76, 42668), (77, 42671),

Gene: Peebs_65 Start: 51614, Stop: 52006, Start Num: 31

Candidate Starts for Peebs_65:

(Start: 28 @51563 has 9 MA's), (Start: 31 @51614 has 18 MA's), (Start: 35 @51638 has 4 MA's), (46, 51707), (56, 51803), (57, 51815), (66, 51890), (72, 51920),

Gene: Pepperwood_66 Start: 51747, Stop: 52139, Start Num: 31

Candidate Starts for Pepperwood_66:

(Start: 28 @51696 has 9 MA's), (Start: 31 @51747 has 18 MA's), (Start: 35 @51771 has 4 MA's), (46, 51840), (56, 51936), (57, 51948), (66, 52023), (72, 52053),

Gene: Peregrin_87 Start: 53436, Stop: 53783, Start Num: 31

Candidate Starts for Peregrin_87:

(Start: 31 @53436 has 18 MA's), (33, 53454), (34, 53457), (40, 53502), (71, 53730), (72, 53733),

Gene: Persimmon_62 Start: 50095, Stop: 50487, Start Num: 31

Candidate Starts for Persimmon_62:

(12, 49993), (14, 50002), (Start: 28 @50047 has 9 MA's), (30, 50086), (Start: 31 @50095 has 18 MA's), (42, 50170), (49, 50212), (56, 50284), (57, 50296), (58, 50311), (66, 50371), (69, 50392),

Gene: Phredrick_45 Start: 40120, Stop: 40524, Start Num: 27

Candidate Starts for Phredrick_45:

(22, 40102), (25, 40114), (Start: 27 @40120 has 26 MA's), (51, 40291), (56, 40357), (76, 40513), (77, 40516),

Gene: PinkiePie_64 Start: 51248, Stop: 51640, Start Num: 31

Candidate Starts for PinkiePie_64:

(12, 51146), (14, 51155), (Start: 28 @51200 has 9 MA's), (Start: 31 @51248 has 18 MA's), (42, 51323), (49, 51365), (56, 51437), (57, 51449), (58, 51464), (66, 51524), (69, 51545),

Gene: PumpkinSpice_67 Start: 51148, Stop: 51591, Start Num: 26

Candidate Starts for PumpkinSpice_67:

(25, 51145), (Start: 26 @51148 has 28 MA's), (Start: 44 @51283 has 1 MA's), (50, 51319), (53, 51340), (56, 51388), (57, 51400), (58, 51415), (66, 51475),

Gene: Quaran19_68 Start: 51139, Stop: 51582, Start Num: 26

Candidate Starts for Quaran19_68:

(25, 51136), (Start: 26 @51139 has 28 MA's), (Start: 44 @51274 has 1 MA's), (50, 51310), (53, 51331), (56, 51379), (57, 51391), (58, 51406), (66, 51466),

Gene: SaltySpittoon_68 Start: 51148, Stop: 51591, Start Num: 26

Candidate Starts for SaltySpittoon_68:

(25, 51145), (Start: 26 @51148 has 28 MA's), (Start: 44 @51283 has 1 MA's), (50, 51319), (53, 51340), (56, 51388), (57, 51400), (58, 51415), (66, 51475),

Gene: Samisti12_66 Start: 53078, Stop: 53446, Start Num: 35

Candidate Starts for Samisti12_66:

(Start: 28 @53003 has 9 MA's), (Start: 31 @53054 has 18 MA's), (Start: 35 @53078 has 4 MA's), (46, 53147), (56, 53243), (57, 53255), (66, 53330), (72, 53360),

Gene: SeresaTree_45 Start: 40814, Stop: 41221, Start Num: 27

Candidate Starts for SeresaTree_45:

(19, 40787), (21, 40793), (Start: 27 @40814 has 26 MA's), (45, 40958), (46, 40961), (53, 41006), (56, 41054), (66, 41141), (67, 41147), (68, 41159), (76, 41210),

Gene: Sham_43 Start: 41978, Stop: 42385, Start Num: 27

Candidate Starts for Sham_43:

(Start: 27 @41978 has 26 MA's), (Start: 44 @42116 has 1 MA's), (45, 42122), (46, 42125), (62, 42272), (67, 42311), (68, 42323), (76, 42374), (77, 42377),

Gene: Sollertia_68 Start: 51113, Stop: 51559, Start Num: 26

Candidate Starts for Sollertia_68:

(Start: 26 @51113 has 28 MA's), (Start: 44 @51251 has 1 MA's), (50, 51287), (53, 51308), (56, 51356), (58, 51383), (66, 51443), (69, 51464), (73, 51488),

Gene: SparkleGoddess_46 Start: 42116, Stop: 42520, Start Num: 27

Candidate Starts for SparkleGoddess_46:

(4, 42005), (5, 42017), (7, 42035), (10, 42059), (13, 42068), (15, 42077), (18, 42086), (20, 42092), (22, 42098), (Start: 27 @42116 has 26 MA's), (45, 42257), (51, 42287), (54, 42320), (61, 42401), (76, 42509), (77, 42512),

Gene: Spelly_68 Start: 51103, Stop: 51546, Start Num: 26

Candidate Starts for Spelly_68:

(25, 51100), (Start: 26 @51103 has 28 MA's), (Start: 44 @51238 has 1 MA's), (50, 51274), (53, 51295), (56, 51343), (57, 51355), (58, 51370), (66, 51430),

Gene: Spilled_69 Start: 51220, Stop: 51663, Start Num: 26

Candidate Starts for Spilled_69:

(25, 51217), (Start: 26 @51220 has 28 MA's), (Start: 44 @51355 has 1 MA's), (50, 51391), (53, 51412), (56, 51460), (57, 51472), (58, 51487), (66, 51547),

Gene: Squillium_65 Start: 51249, Stop: 51641, Start Num: 31

Candidate Starts for Squillium_65:

(12, 51147), (14, 51156), (Start: 28 @51201 has 9 MA's), (Start: 31 @51249 has 18 MA's), (42, 51324), (49, 51366), (56, 51438), (57, 51450), (58, 51465), (66, 51525), (69, 51546),

Gene: Stanimal_68 Start: 51002, Stop: 51448, Start Num: 26

Candidate Starts for Stanimal_68:

(Start: 26 @51002 has 28 MA's), (Start: 44 @51140 has 1 MA's), (50, 51176), (53, 51197), (56, 51245), (58, 51272), (66, 51332), (69, 51353), (73, 51377),

Gene: StarPlatinum_68 Start: 51648, Stop: 52091, Start Num: 26

Candidate Starts for StarPlatinum_68:

(Start: 26 @51648 has 28 MA's), (Start: 44 @51783 has 1 MA's), (50, 51819), (53, 51840), (56, 51888), (57, 51900), (66, 51975),

Gene: Starbow_66 Start: 51124, Stop: 51567, Start Num: 26

Candidate Starts for Starbow_66:

(25, 51121), (Start: 26 @51124 has 28 MA's), (Start: 44 @51259 has 1 MA's), (50, 51295), (53, 51316), (56, 51364), (57, 51376), (58, 51391), (66, 51451),

Gene: Stigma_46 Start: 42129, Stop: 42533, Start Num: 27

Candidate Starts for Stigma_46:

(4, 42018), (5, 42030), (7, 42048), (10, 42072), (13, 42081), (15, 42090), (18, 42099), (20, 42105), (22, 42111), (Start: 27 @42129 has 26 MA's), (45, 42270), (51, 42300), (54, 42333), (61, 42414), (76, 42522), (77, 42525),

Gene: Sushi23_66 Start: 51972, Stop: 52364, Start Num: 31

Candidate Starts for Sushi23_66:

(Start: 28 @51921 has 9 MA's), (Start: 31 @51972 has 18 MA's), (Start: 35 @51996 has 4 MA's), (46, 52065), (56, 52161), (57, 52173), (66, 52248), (72, 52278),

Gene: Targaryen_67 Start: 52720, Stop: 53163, Start Num: 28

Candidate Starts for Targaryen_67:

(Start: 28 @52720 has 9 MA's), (Start: 31 @52771 has 18 MA's), (Start: 35 @52795 has 4 MA's), (42, 52846), (49, 52888), (56, 52960), (57, 52972), (58, 52987), (66, 53047), (69, 53068), (72, 53077),

Gene: Teutsch_66 Start: 52259, Stop: 52627, Start Num: 35

Candidate Starts for Teutsch_66:

(Start: 28 @52184 has 9 MA's), (Start: 31 @52235 has 18 MA's), (Start: 35 @52259 has 4 MA's), (46, 52328), (56, 52424), (57, 52436), (66, 52511), (72, 52541),

Gene: TomSawyer_66 Start: 50742, Stop: 51185, Start Num: 26

Candidate Starts for TomSawyer_66:

(25, 50739), (Start: 26 @50742 has 28 MA's), (Start: 44 @50877 has 1 MA's), (50, 50913), (53, 50934), (56, 50982), (57, 50994), (58, 51009), (66, 51069),

Gene: Tomas_70 Start: 53465, Stop: 53905, Start Num: 28

Candidate Starts for Tomas_70:

(Start: 28 @53465 has 9 MA's), (Start: 31 @53513 has 18 MA's), (Start: 35 @53537 has 4 MA's), (42, 53588), (43, 53591), (54, 53669), (56, 53702), (57, 53714), (58, 53729), (66, 53789), (72, 53819),

Gene: Tribute_64 Start: 51465, Stop: 51833, Start Num: 35

Candidate Starts for Tribute_64:

(Start: 28 @51390 has 9 MA's), (Start: 31 @51441 has 18 MA's), (Start: 35 @51465 has 4 MA's), (46, 51534), (56, 51630), (57, 51642), (66, 51717), (72, 51747),

Gene: Trina_88 Start: 60434, Stop: 60787, Start Num: 31

Candidate Starts for Trina_88:

(30, 60425), (Start: 31 @60434 has 18 MA's), (37, 60476), (49, 60551), (50, 60554), (52, 60569), (56, 60623), (70, 60731),

Gene: TunaTartare_45 Start: 42276, Stop: 42683, Start Num: 27

Candidate Starts for TunaTartare_45:

(Start: 27 @42276 has 26 MA's), (Start: 44 @42414 has 1 MA's), (45, 42420), (46, 42423), (53, 42468), (55, 42495), (62, 42570), (67, 42609), (68, 42621), (76, 42672), (77, 42675),

Gene: Wakanda_42 Start: 41726, Stop: 42136, Start Num: 27

Candidate Starts for Wakanda_42:

(18, 41696), (24, 41717), (Start: 27 @41726 has 26 MA's), (39, 41834), (54, 41936), (57, 41981), (74, 42107), (76, 42125),

Gene: Warpy_70 Start: 52235, Stop: 52627, Start Num: 31

Candidate Starts for Warpy_70:

(Start: 28 @52184 has 9 MA's), (Start: 31 @52235 has 18 MA's), (Start: 35 @52259 has 4 MA's), (42, 52310), (49, 52352), (56, 52424), (57, 52436), (58, 52451), (66, 52511), (69, 52532),

Gene: Watermoore_66 Start: 52451, Stop: 52843, Start Num: 31

Candidate Starts for Watermoore_66:

(Start: 28 @52400 has 9 MA's), (Start: 31 @52451 has 18 MA's), (Start: 35 @52475 has 4 MA's), (46, 52544), (56, 52640), (57, 52652), (66, 52727), (72, 52757),

Gene: Weasels2_88 Start: 54194, Stop: 54541, Start Num: 31

Candidate Starts for Weasels2_88:

(Start: 31 @54194 has 18 MA's), (40, 54260), (47, 54290),

Gene: Wipeout_66 Start: 51493, Stop: 51936, Start Num: 26

Candidate Starts for Wipeout_66:

(25, 51490), (Start: 26 @51493 has 28 MA's), (Start: 44 @51628 has 1 MA's), (50, 51664), (53, 51685), (56, 51733), (57, 51745), (58, 51760), (66, 51820),

Gene: Wofford_67 Start: 52175, Stop: 52621, Start Num: 26

Candidate Starts for Wofford_67:

(25, 52172), (Start: 26 @52175 has 28 MA's), (Start: 44 @52313 has 1 MA's), (50, 52349), (53, 52370), (56, 52418), (58, 52445), (66, 52505), (69, 52526), (73, 52550),

Gene: Yaboi_68 Start: 51090, Stop: 51536, Start Num: 26

Candidate Starts for Yaboi_68:

(Start: 26 @51090 has 28 MA's), (Start: 44 @51228 has 1 MA's), (50, 51264), (53, 51285), (56, 51333), (58, 51360), (66, 51420), (69, 51441), (73, 51465),