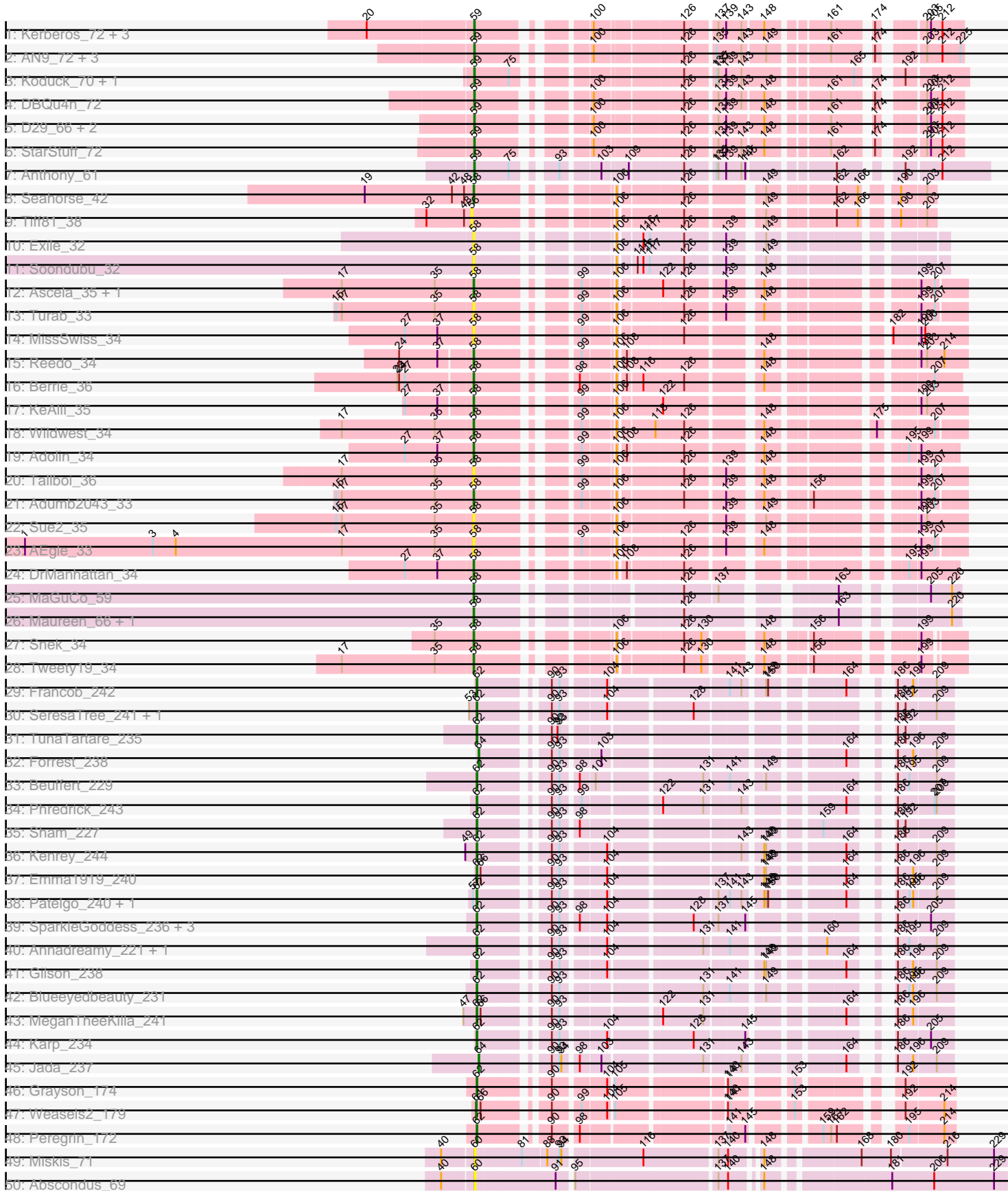
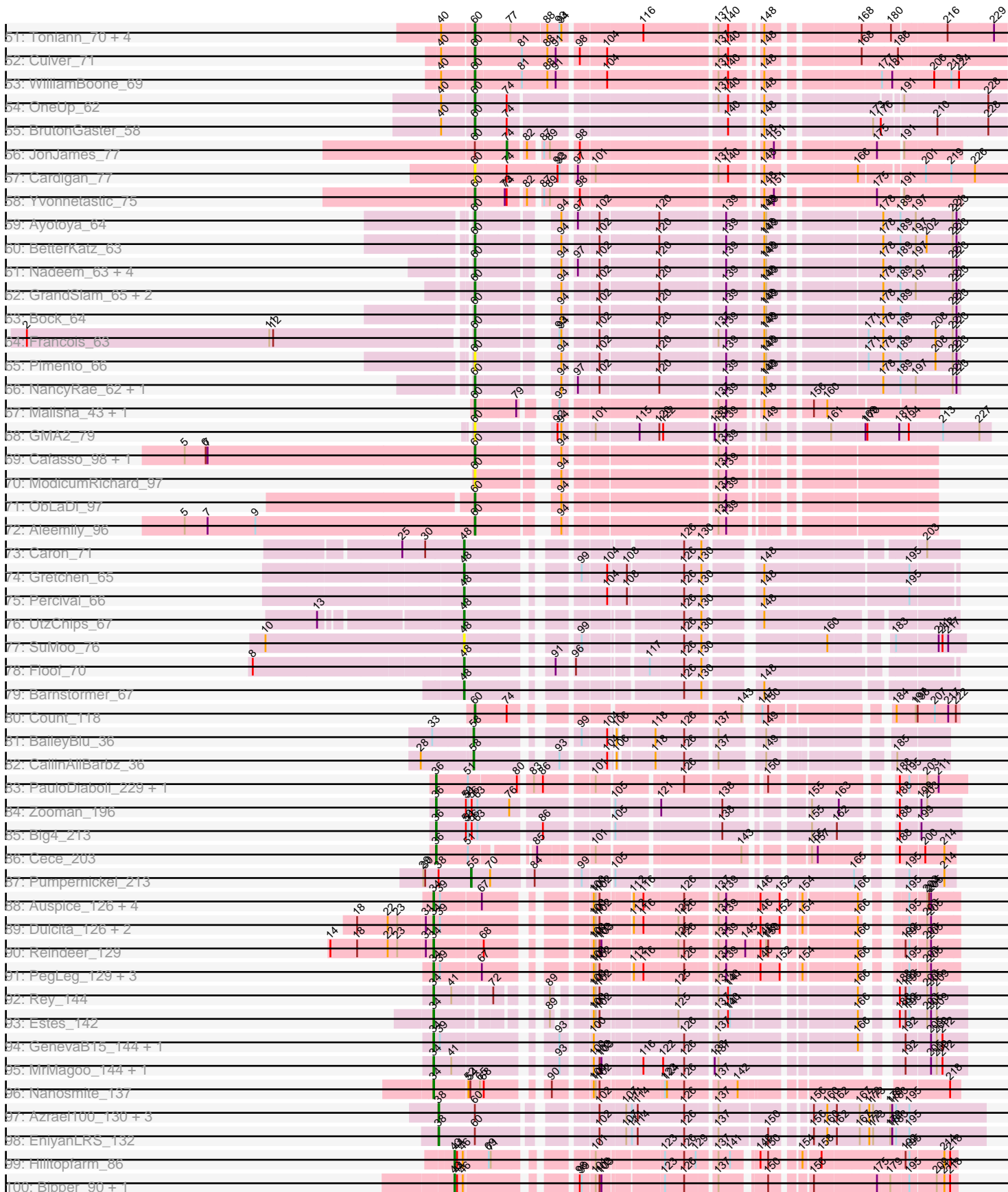


Pham 157648



Pham 157648



Pham 157648



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 157648 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157648 has 152 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Kerberos_72, Pomar16_71, Tomathan_72, Duplo_72
- Track 2 : AN9_72, VC3_71, ANI8_72, C3_65
- Track 3 : Koduck_70, L5_66
- Track 4 : DBQu4n_72
- Track 5 : D29_66, D32_71, Naji_72
- Track 6 : StarStuff_72
- Track 7 : Anthony_61
- Track 8 : Seahorse_42
- Track 9 : Tiff81_38
- Track 10 : Exile_32
- Track 11 : Soondubu_32
- Track 12 : Ascela_35, lter_35
- Track 13 : Turab_33
- Track 14 : MissSwiss_34
- Track 15 : Reedo_34
- Track 16 : Berrie_36
- Track 17 : KeAlii_35
- Track 18 : Wildwest_34
- Track 19 : Adolin_34
- Track 20 : Tallboi_36
- Track 21 : Adumb2043_33
- Track 22 : Sue2_35
- Track 23 : AEgle_33
- Track 24 : DrManhattan_34
- Track 25 : MaGuCo_59
- Track 26 : Maureen_66, Liebe_66
- Track 27 : Snek_34
- Track 28 : Tweety19_34
- Track 29 : Francob_242
- Track 30 : SeresaTree_241, Faust_237
- Track 31 : TunaTartare_235
- Track 32 : Forrest_238
- Track 33 : Beuffert_229
- Track 34 : Phredrick_243
- Track 35 : Sham_227
- Track 36 : Kenrey_244
- Track 37 : Emma1919_240

- Track 38 : Patelgo_240, Moab_241
- Track 39 : SparkleGoddess_236, Stigma_234, Comrade_232, Belfort_236
- Track 40 : Annadreamy_221, Limpid_228
- Track 41 : Gilson_238
- Track 42 : Blueeyedbeauty_231
- Track 43 : MeganTheeKilla_241
- Track 44 : Karp_234
- Track 45 : Jada_237
- Track 46 : Grayson_174
- Track 47 : Weasels2_179
- Track 48 : Peregrin_172
- Track 49 : Miskis_71
- Track 50 : Abscondus_69
- Track 51 : Toniann_70, PhinkBoden_69, ClubL_70, Norvs_70, Cucurbita_71
- Track 52 : Culver_71
- Track 53 : WilliamBoone_69
- Track 54 : OneUp_62
- Track 55 : BrutonGaster_58
- Track 56 : JonJames_77
- Track 57 : Cardigan_77
- Track 58 : Yvonnetastic_75
- Track 59 : Ayotoya_64
- Track 60 : BetterKatz_63
- Track 61 : Nadeem_63, Brylie_63, Mulch_63, Parada_63, WheatThin_62
- Track 62 : GrandSlam_65, Hamood_65, Chop_65
- Track 63 : Bock_64
- Track 64 : Francois_63
- Track 65 : Pimento_66
- Track 66 : NancyRae_62, DelRio_64
- Track 67 : Malisha_43, Squiddly_43
- Track 68 : GMA2_79
- Track 69 : Cafasso_98, Morgana_104
- Track 70 : ModicumRichard_97
- Track 71 : ObLaDi_97
- Track 72 : Aleemily_96
- Track 73 : Caron_71
- Track 74 : Gretchen_65
- Track 75 : Percival_66
- Track 76 : UtzChips_67
- Track 77 : SuMoo_76
- Track 78 : Floof_70
- Track 79 : Barnstormer_67
- Track 80 : Count_118
- Track 81 : BaileyBlu_36
- Track 82 : CallinAllBarbz_36
- Track 83 : PauloDiaboli_229, A3Wally_229
- Track 84 : Zooman_196
- Track 85 : Big4_213
- Track 86 : Cece_203
- Track 87 : Pumpernickel_213
- Track 88 : Auspice_126, Bongo_125, Bricole_128, TyDawg_121, IPhane7_124
- Track 89 : Dulcita_126, Diminimus_126, Glaske16_128
- Track 90 : Reindeer_129

- Track 91 : PegLeg_129, LilhomieP_126, Skinny_132, SlimJimmy_125
- Track 92 : Rey_144
- Track 93 : Estes_142
- Track 94 : GenevaB15_144, Aziz_141
- Track 95 : MrMagoo_144, GardenSalsa_142
- Track 96 : Nanosmite_137
- Track 97 : Azrael100_130, MaryV_123, Cosmo_138, Wildcat_137
- Track 98 : EniyanLRS_132
- Track 99 : Hilltopfarm_86
- Track 100 : Bipper_90, Cracklewink_91
- Track 101 : DrWorm_141
- Track 102 : StAugustine_163
- Track 103 : P1201_60
- Track 104 : Kumao_95
- Track 105 : REQ2_72
- Track 106 : JeanGrey_18

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

The start number called the most often in the published annotations is 60, it was called in 30 of the 129 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abscondus_69, Aleemily_96, Ayotoya_64, BetterKatz_63, Bock_64, BrutonGaster_58, Brylie_63, Cafasso_98, Cardigan_77, Chop_65, ClubL_70, Count_118, Cucurbita_71, Culver_71, DelRio_64, Francois_63, GMA2_79, GrandSlam_65, Hamood_65, Malisha_43, Miskis_71, ModicumRichard_97, Morgana_104, Mulch_63, Nadeem_63, NancyRae_62, Norvs_70, ObLaDi_97, OneUp_62, Parada_63, PhinkBoden_69, Pimento_66, REQ2_72, Squiddly_43, Toniann_70, WheatThin_62, WilliamBoone_69, Yvonnetastic_75,

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

- Azrael100_130, Cosmo_138, EniyanLRS_132, JonJames_77, MaryV_123, Wildcat_137,

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

- A3Wally_229, AEgle_33, AN9_72, ANI8_72, Adolin_34, Adumb2043_33, Annadreamy_221, Anthony_61, Ascela_35, Auspice_126, Aziz_141, BaileyBlu_36, Barnstormer_67, Belfort_236, Berrie_36, Beuffert_229, Big4_213, Bipper_90, Blueeyedbeauty_231, Bongo_125, Bricole_128, C3_65, CallinAllBarbz_36, Caron_71, Cece_203, Comrade_232, Cracklewink_91, D29_66, D32_71, DBQu4n_72, Diminimus_126, DrManhattan_34, DrWorm_141, Dulcita_126, Duplo_72, Emma1919_240, Estes_142, Exile_32, Faust_237, Floof_70, Forrest_238, Francob_242, GardenSalsa_142, GenevaB15_144, Gilson_238, Glaske16_128, Grayson_174, Gretchen_65, Hilltopfarm_86, IPhane7_124, Iter_35, Jada_237, JeanGrey_18, Karp_234, KeAlii_35, Kenrey_244, Kerberos_72, Koduck_70, Kumao_95, L5_66, Liebe_66, LilhomieP_126, Limpid_228, MaGuCo_59, Maureen_66, MeganTheeKilla_241, MissSwiss_34, Moab_241, MrMagoo_144, Naji_72, Nanosmite_137, P1201_60, Patelgo_240, PauloDiaboli_229, PegLeg_129, Percival_66, Peregrin_172, Phredrick_243, Pomar16_71, Pumpnickel_213,

Reedo_34, Reindeer_129, Rey_144, Seahorse_42, SeresaTree_241, Sham_227, Skinny_132, SlimJimmy_125, Snek_34, Soondubu_32, SparkleGoddess_236, StAugustine_163, StarStuff_72, Stigma_234, SuMoo_76, Sue2_35, Tallboi_36, Tiff81_38, Tomathan_72, TunaTartare_235, Turab_33, Tweety19_34, TyDawg_121, UtzChips_67, VC3_71, Weasels2_179, Wildwest_34, Zooman_196,

Summary by start number:

Start 34:

- Found in 21 of 152 (13.8%) of genes in pham
- Manual Annotations of this start: 20 of 129
- Called 95.2% of time when present
- Phage (with cluster) where this start called: Auspice_126 (M1), Aziz_141 (M2), Bongo_125 (M1), Bricole_128 (M1), Diminimus_126 (M1), Dulcita_126 (M1), Estes_142 (M2), GardenSalsa_142 (M2), GenevaB15_144 (M2), Glaske16_128 (M1), IPhone7_124 (M1), LilhomieP_126 (M1), MrMagoo_144 (M2), Nanosmite_137 (M3), PegLeg_129 (M1), Reindeer_129 (M1), Rey_144 (M2), Skinny_132 (M1), SlimJimmy_125 (M1), TyDawg_121 (M1),

Start 36:

- Found in 5 of 152 (3.3%) of genes in pham
- Manual Annotations of this start: 5 of 129
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally_229 (GD1), Big4_213 (GD2), Cece_203 (GD3), PauloDiaboli_229 (GD1), Zooman_196 (GD2),

Start 38:

- Found in 7 of 152 (4.6%) of genes in pham
- Manual Annotations of this start: 5 of 129
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Azrael100_130 (V), Cosmo_138 (V), EniyanLRS_132 (V), MaryV_123 (V), StAugustine_163 (singleton), Wildcat_137 (V),

Start 41:

- Found in 4 of 152 (2.6%) of genes in pham
- Manual Annotations of this start: 1 of 129
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Kumao_95 (singleton),

Start 43:

- Found in 3 of 152 (2.0%) of genes in pham
- Manual Annotations of this start: 3 of 129
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bipper_90 (Y), Cracklewink_91 (Y), Hilltopfarm_86 (Y),

Start 48:

- Found in 9 of 152 (5.9%) of genes in pham
- Manual Annotations of this start: 6 of 129
- Called 77.8% of time when present
- Phage (with cluster) where this start called: Barnstormer_67 (EH), Caron_71 (EH), Floof_70 (EH), Gretchen_65 (EH), Percival_66 (EH), SuMoo_76 (EH), UtzChips_67 (EH),

Start 55:

- Found in 2 of 152 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 129
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Pumpernickel_213 (GD4),

Start 56:

- Found in 3 of 152 (2.0%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Tiff81_38 (AY),

Start 57:

- Found in 3 of 152 (2.0%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: DrWorm_141 (singleton),

Start 58:

- Found in 24 of 152 (15.8%) of genes in pham
- Manual Annotations of this start: 17 of 129
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AEgle_33 (AZ1), Adolin_34 (AZ1), Adumb2043_33 (AZ1), Ascela_35 (AZ1), BaileyBlu_36 (FP), Berrie_36 (AZ1), CallinAllBarbz_36 (FP), DrManhattan_34 (AZ1), Exile_32 (AZ), Iter_35 (AZ1), KeAlii_35 (AZ1), Liebe_66 (AZ2), MaGuCo_59 (AZ2), Maureen_66 (AZ2), MissSwiss_34 (AZ1), Reedo_34 (AZ1), Seahorse_42 (AY), Snek_34 (AZ3), Soondubu_32 (AZ), Sue2_35 (AZ1), Tallboi_36 (AZ1), Turab_33 (AZ1), Tweety19_34 (AZ3), Wildwest_34 (AZ1),

Start 59:

- Found in 16 of 152 (10.5%) of genes in pham
- Manual Annotations of this start: 15 of 129
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AN9_72 (A2), ANI8_72 (A2), Anthony_61 (A20), C3_65 (A2), D29_66 (A2), D32_71 (A2), DBQu4n_72 (A2), Duplo_72 (A2), Kerberos_72 (A2), Koduck_70 (A2), L5_66 (A2), Naji_72 (A2), Pomar16_71 (A2), StarStuff_72 (A2), Tomathan_72 (A2), VC3_71 (A2),

Start 60:

- Found in 44 of 152 (28.9%) of genes in pham
- Manual Annotations of this start: 30 of 129
- Called 86.4% of time when present
- Phage (with cluster) where this start called: Abscondus_69 (CQ), Aleemily_96 (DZ), Ayotoya_64 (DI), BetterKatz_63 (DI), Bock_64 (DI), BrutonGaster_58 (CQ2), Brylie_63 (DI), Cafasso_98 (DZ), Cardigan_77 (DD), Chop_65 (DI), ClubL_70 (CQ1), Count_118 (EL), Cucurbita_71 (CQ1), Culver_71 (CQ1), DelRio_64 (DI), Francois_63 (DI), GMA2_79 (DS), GrandSlam_65 (DI), Hamood_65 (DI), Malisha_43 (DN), Miskis_71 (CQ), ModicumRichard_97 (DZ), Morgana_104 (DZ), Mulch_63 (DI), Nadeem_63 (DI), NancyRae_62 (DI), Norvs_70 (CQ), ObLaDi_97 (DZ), OneUp_62 (CQ2), Parada_63 (DI), PhinkBoden_69 (CQ1), Pimento_66 (DI), REQ2_72 (singleton), Squiddly_43 (DN2), Toniann_70 (CQ1), WheatThin_62 (DI),

WilliamBoone_69 (CQ1), Yvonnetastic_75 (DD),

Start 61:

- Found in 1 of 152 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 129
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Weasels2_179 (CB),

Start 62:

- Found in 25 of 152 (16.4%) of genes in pham
- Manual Annotations of this start: 22 of 129
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy_221 (BK1), Belfort_236 (BK1), Beuffert_229 (BK1), Blueeyedbeauty_231 (BK1), Comrade_232 (BK1), Emma1919_240 (BK1), Faust_237 (BK1), Francob_242 (BK1), Gilson_238 (BK1), Grayson_174 (CB), JeanGrey_18 (singleton), Karp_234 (BK1), Kenrey_244 (BK1), Limpid_228 (BK1), MeganTheeKilla_241 (BK1), Moab_241 (BK1), P1201_60 (singleton), Patelgo_240 (BK1), Peregrin_172 (CB), Phredrick_243 (BK1), SeresaTree_241 (BK1), Sham_227 (BK1), SparkleGoddess_236 (BK1), Stigma_234 (BK1), TunaTartare_235 (BK1),

Start 64:

- Found in 2 of 152 (1.3%) of genes in pham
- Manual Annotations of this start: 2 of 129
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Forrest_238 (BK1), Jada_237 (BK1),

Start 74:

- Found in 6 of 152 (3.9%) of genes in pham
- Manual Annotations of this start: 1 of 129
- Called 16.7% of time when present
- Phage (with cluster) where this start called: JonJames_77 (DD),

Summary by clusters:

There are 31 clusters represented in this pham: DN, FP, singleton, AZ1, GD4, DI, DD, GD2, Y, GD3, DZ, M3, M2, DS, A2, DN2, CQ2, CQ1, EL, EH, CB, BK1, V, AY, CQ, AZ, GD1, A20, M1, AZ2, AZ3,

Info for manual annotations of cluster A2:

- Start number 59 was manually annotated 14 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 59 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster AY:

- Start number 58 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster AZ1:

- Start number 58 was manually annotated 9 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 58 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 58 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster BK1:

- Start number 62 was manually annotated 20 times for cluster BK1.
- Start number 64 was manually annotated 2 times for cluster BK1.

Info for manual annotations of cluster CB:

- Start number 61 was manually annotated 1 time for cluster CB.
- Start number 62 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CQ:

- Start number 60 was manually annotated 1 time for cluster CQ.

Info for manual annotations of cluster CQ1:

- Start number 60 was manually annotated 6 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 60 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster DD:

- Start number 60 was manually annotated 1 time for cluster DD.
- Start number 74 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DI:

- Start number 60 was manually annotated 13 times for cluster DI.

Info for manual annotations of cluster DN:

- Start number 60 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN2:

- Start number 60 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DZ:

- Start number 60 was manually annotated 4 times for cluster DZ.

Info for manual annotations of cluster EH:

- Start number 48 was manually annotated 6 times for cluster EH.

Info for manual annotations of cluster EL:

- Start number 60 was manually annotated 1 time for cluster EL.

Info for manual annotations of cluster FP:

- Start number 58 was manually annotated 2 times for cluster FP.

Info for manual annotations of cluster GD1:

- Start number 36 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 36 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 36 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 55 was manually annotated 1 time for cluster GD4.

Info for manual annotations of cluster M1:

- Start number 34 was manually annotated 13 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 34 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 34 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster V:

- Start number 38 was manually annotated 5 times for cluster V.

Info for manual annotations of cluster Y:

- Start number 43 was manually annotated 3 times for cluster Y.

Gene Information:

Gene: A3Wally_229 Start: 122395, Stop: 123075, Start Num: 36

Candidate Starts for A3Wally_229:

(Start: 36 @122395 has 5 MA's), (51, 122443), (80, 122512), (83, 122527), (86, 122539), (101, 122605), (126, 122722), (150, 122827), (188, 122974), (195, 122989), (203, 123013), (211, 123031),

Gene: AEgle_33 Start: 24682, Stop: 25275, Start Num: 58

Candidate Starts for AEgle_33:

(1, 23983), (3, 24184), (4, 24220), (17, 24481), (35, 24625), (Start: 58 @24682 has 17 MA's), (99, 24802), (106, 24844), (126, 24934), (139, 24988), (148, 25030), (199, 25216), (207, 25237),

Gene: AN9_72 Start: 42782, Stop: 42180, Start Num: 59

Candidate Starts for AN9_72:

(Start: 59 @42782 has 15 MA's), (100, 42647), (126, 42521), (135, 42482), (143, 42443), (149, 42410), (161, 42332), (174, 42284), (203, 42233), (212, 42209), (225, 42185),

Gene: ANI8_72 Start: 42782, Stop: 42180, Start Num: 59

Candidate Starts for ANI8_72:

(Start: 59 @42782 has 15 MA's), (100, 42647), (126, 42521), (135, 42482), (143, 42443), (149, 42410), (161, 42332), (174, 42284), (203, 42233), (212, 42209), (225, 42185),

Gene: Abscondus_69 Start: 44768, Stop: 45538, Start Num: 60

Candidate Starts for Abscondus_69:

(40, 44720), (Start: 60 @44768 has 30 MA's), (91, 44888), (95, 44906), (137, 45110), (140, 45125), (148, 45161), (181, 45329), (206, 45392), (229, 45485),

Gene: Adolin_34 Start: 23539, Stop: 24129, Start Num: 58

Candidate Starts for Adolin_34:

(27, 23437), (37, 23488), (Start: 58 @23539 has 17 MA's), (99, 23659), (106, 23701), (108, 23710), (126, 23791), (148, 23887), (195, 24058), (199, 24073),

Gene: Adumb2043_33 Start: 24701, Stop: 25294, Start Num: 58

Candidate Starts for Adumb2043_33:

(15, 24491), (17, 24500), (35, 24644), (Start: 58 @24701 has 17 MA's), (99, 24821), (106, 24863), (126, 24953), (139, 25007), (148, 25049), (156, 25106), (199, 25235), (207, 25256),

Gene: Aleemily_96 Start: 56239, Stop: 56829, Start Num: 60

Candidate Starts for Aleemily_96:

(5, 55786), (7, 55822), (9, 55897), (Start: 60 @56239 has 30 MA's), (94, 56338), (137, 56545), (139, 56557),

Gene: Annadreamy_221 Start: 109127, Stop: 109699, Start Num: 62

Candidate Starts for Annadreamy_221:

(Start: 62 @109127 has 22 MA's), (90, 109214), (93, 109226), (104, 109286), (131, 109412), (141, 109448), (160, 109562), (186, 109619), (195, 109634), (209, 109673),

Gene: Anthony_61 Start: 39452, Stop: 38802, Start Num: 59

Candidate Starts for Anthony_61:

(Start: 59 @39452 has 15 MA's), (75, 39401), (93, 39353), (103, 39302), (109, 39266), (126, 39188), (135, 39149), (137, 39146), (139, 39134), (143, 39110), (145, 39104), (162, 38993), (192, 38927), (212, 38876),

Gene: Ascela_35 Start: 25061, Stop: 25654, Start Num: 58

Candidate Starts for Ascela_35:

(17, 24860), (35, 25004), (Start: 58 @25061 has 17 MA's), (99, 25181), (106, 25223), (122, 25280), (126, 25313), (139, 25367), (148, 25409), (199, 25595), (207, 25616),

Gene: Auspice_126 Start: 66089, Stop: 66748, Start Num: 34

Candidate Starts for Auspice_126:

(Start: 34 @66089 has 20 MA's), (39, 66098), (67, 66155), (100, 66281), (101, 66284), (102, 66290), (112, 66332), (116, 66347), (126, 66407), (137, 66449), (139, 66461), (146, 66509), (152, 66539), (154, 66557), (166, 66635), (195, 66674), (203, 66698), (204, 66701), (205, 66704),

Gene: Ayotoya_64 Start: 42200, Stop: 42832, Start Num: 60

Candidate Starts for Ayotoya_64:

(Start: 60 @42200 has 30 MA's), (94, 42296), (97, 42308), (102, 42338), (120, 42422), (139, 42515), (148, 42566), (149, 42569), (178, 42719), (189, 42746), (197, 42770), (221, 42821), (223, 42827),

Gene: Aziz_141 Start: 67316, Stop: 67996, Start Num: 34

Candidate Starts for Aziz_141:

(Start: 34 @67316 has 20 MA's), (39, 67325), (93, 67472), (100, 67511), (126, 67637), (137, 67679), (166, 67868), (192, 67904), (205, 67940), (209, 67949), (212, 67958),

Gene: Azrael100_130 Start: 65071, Stop: 65832, Start Num: 38

Candidate Starts for Azrael100_130:

(Start: 38 @65071 has 5 MA's), (Start: 60 @65128 has 30 MA's), (102, 65278), (107, 65317), (111, 65326), (114, 65335), (126, 65407), (137, 65449), (156, 65566), (160, 65587), (162, 65602), (167, 65638), (172, 65650), (173, 65656), (179, 65683), (181, 65686), (183, 65692), (195, 65713),

Gene: BaileyBlu_36 Start: 24839, Stop: 25417, Start Num: 58

Candidate Starts for BaileyBlu_36:

(33, 24782), (Start: 58 @24839 has 17 MA's), (99, 24959), (104, 24995), (106, 25001), (118, 25049), (126, 25091), (137, 25133), (149, 25190),

Gene: Barnstormer_67 Start: 41973, Stop: 42605, Start Num: 48

Candidate Starts for Barnstormer_67:

(Start: 48 @41973 has 6 MA's), (126, 42237), (130, 42264), (148, 42333),

Gene: Belfort_236 Start: 114585, Stop: 115154, Start Num: 62

Candidate Starts for Belfort_236:

(Start: 62 @114585 has 22 MA's), (90, 114672), (93, 114684), (98, 114705), (104, 114744), (128, 114855), (137, 114888), (145, 114927), (186, 115074), (205, 115119),

Gene: Berrie_36 Start: 26157, Stop: 26750, Start Num: 58

Candidate Starts for Berrie_36:

(23, 26049), (24, 26052), (27, 26061), (Start: 58 @26157 has 17 MA's), (98, 26274), (106, 26319), (108, 26328), (116, 26349), (126, 26409), (148, 26505), (207, 26709),

Gene: BetterKatz_63 Start: 41399, Stop: 42031, Start Num: 60

Candidate Starts for BetterKatz_63:

(Start: 60 @41399 has 30 MA's), (94, 41495), (102, 41537), (120, 41621), (139, 41714), (148, 41765), (149, 41768), (178, 41918), (189, 41945), (197, 41969), (202, 41981), (221, 42020), (223, 42026),

Gene: Beuffert_229 Start: 113280, Stop: 113852, Start Num: 62

Candidate Starts for Beuffert_229:

(Start: 62 @113280 has 22 MA's), (90, 113367), (93, 113379), (98, 113400), (101, 113421), (131, 113565), (141, 113601), (149, 113643), (186, 113772), (195, 113787), (209, 113826),

Gene: Big4_213 Start: 118520, Stop: 119200, Start Num: 36

Candidate Starts for Big4_213:

(Start: 36 @118520 has 5 MA's), (50, 118565), (51, 118568), (56, 118574), (63, 118583), (86, 118670), (105, 118760), (138, 118904), (155, 119012), (162, 119048), (188, 119108), (199, 119138),

Gene: Bipper_90 Start: 57652, Stop: 58302, Start Num: 43

Candidate Starts for Bipper_90:

(Start: 43 @57652 has 3 MA's), (44, 57655), (46, 57664), (98, 57802), (99, 57805), (101, 57823), (102, 57829), (103, 57832), (123, 57916), (126, 57946), (137, 57988), (150, 58045), (156, 58093), (175, 58186), (179, 58204), (195, 58231), (209, 58270), (214, 58282), (218, 58291),

Gene: Blueeyedbeauty_231 Start: 112888, Stop: 113460, Start Num: 62

Candidate Starts for Blueeyedbeauty_231:

(Start: 62 @112888 has 22 MA's), (90, 112975), (93, 112987), (131, 113173), (141, 113209), (149, 113251), (186, 113380), (195, 113395), (196, 113401), (209, 113434),

Gene: Bock_64 Start: 41419, Stop: 42051, Start Num: 60

Candidate Starts for Bock_64:

(Start: 60 @41419 has 30 MA's), (94, 41515), (102, 41557), (120, 41641), (139, 41734), (148, 41785), (149, 41788), (178, 41938), (189, 41965), (221, 42040), (223, 42046),

Gene: Bongo_125 Start: 65705, Stop: 66364, Start Num: 34

Candidate Starts for Bongo_125:

(Start: 34 @65705 has 20 MA's), (39, 65714), (67, 65771), (100, 65897), (101, 65900), (102, 65906), (112, 65948), (116, 65963), (126, 66023), (137, 66065), (139, 66077), (146, 66125), (152, 66155), (154, 66173), (166, 66251), (195, 66290), (203, 66314), (204, 66317), (205, 66320),

Gene: Bricole_128 Start: 65853, Stop: 66512, Start Num: 34

Candidate Starts for Bricole_128:

(Start: 34 @65853 has 20 MA's), (39, 65862), (67, 65919), (100, 66045), (101, 66048), (102, 66054), (112, 66096), (116, 66111), (126, 66171), (137, 66213), (139, 66225), (146, 66273), (152, 66303), (154, 66321), (166, 66399), (195, 66438), (203, 66462), (204, 66465), (205, 66468),

Gene: BrutonGaster_58 Start: 42764, Stop: 43525, Start Num: 60

Candidate Starts for BrutonGaster_58:

(40, 42716), (Start: 60 @42764 has 30 MA's), (Start: 74 @42809 has 1 MA's), (140, 43118), (148, 43154), (173, 43295), (176, 43307), (210, 43382), (228, 43454),

Gene: Brylie_63 Start: 41222, Stop: 41854, Start Num: 60

Candidate Starts for Brylie_63:

(Start: 60 @41222 has 30 MA's), (94, 41318), (97, 41330), (102, 41360), (120, 41444), (139, 41537), (148, 41588), (149, 41591), (178, 41741), (189, 41768), (197, 41792), (221, 41843), (223, 41849),

Gene: C3_65 Start: 42782, Stop: 42180, Start Num: 59

Candidate Starts for C3_65:

(Start: 59 @42782 has 15 MA's), (100, 42647), (126, 42521), (135, 42482), (143, 42443), (149, 42410), (161, 42332), (174, 42284), (203, 42233), (212, 42209), (225, 42185),

Gene: Cafasso_98 Start: 56790, Stop: 57380, Start Num: 60

Candidate Starts for Cafasso_98:

(5, 56337), (6, 56370), (7, 56373), (Start: 60 @56790 has 30 MA's), (94, 56889), (137, 57096), (139, 57108),

Gene: CallinAllBarbz_36 Start: 25236, Stop: 25814, Start Num: 58

Candidate Starts for CallinAllBarbz_36:

(28, 25161), (Start: 58 @25236 has 17 MA's), (93, 25332), (104, 25392), (106, 25398), (118, 25446), (126, 25488), (137, 25530), (149, 25587), (185, 25737),

Gene: Cardigan_77 Start: 51710, Stop: 52486, Start Num: 60

Candidate Starts for Cardigan_77:

(Start: 60 @51710 has 30 MA's), (Start: 74 @51755 has 1 MA's), (92, 51833), (93, 51836), (97, 51854), (101, 51878), (137, 52055), (140, 52070), (148, 52106), (166, 52238), (201, 52325), (219, 52364), (226, 52400),

Gene: Caron_71 Start: 42887, Stop: 43522, Start Num: 48

Candidate Starts for Caron_71:

(25, 42794), (30, 42827), (Start: 48 @42887 has 6 MA's), (126, 43151), (130, 43178), (203, 43472),

Gene: Cece_203 Start: 122712, Stop: 123350, Start Num: 36

Candidate Starts for Cece_203:

(Start: 36 @122712 has 5 MA's), (51, 122760), (85, 122829), (101, 122898), (143, 123099), (155, 123171), (157, 123180), (188, 123267), (200, 123303), (214, 123333),

Gene: Chop_65 Start: 42388, Stop: 43020, Start Num: 60

Candidate Starts for Chop_65:

(Start: 60 @42388 has 30 MA's), (94, 42484), (102, 42526), (120, 42610), (139, 42703), (148, 42754), (149, 42757), (178, 42907), (189, 42934), (197, 42958), (221, 43009), (223, 43015),

Gene: ClubL_70 Start: 44960, Stop: 45727, Start Num: 60

Candidate Starts for ClubL_70:

(40, 44912), (Start: 60 @44960 has 30 MA's), (77, 45011), (88, 45065), (93, 45083), (94, 45086), (116, 45197), (137, 45302), (140, 45317), (148, 45353), (168, 45479), (180, 45524), (216, 45602), (229, 45674),

Gene: Comrade_232 Start: 114781, Stop: 115350, Start Num: 62

Candidate Starts for Comrade_232:

(Start: 62 @114781 has 22 MA's), (90, 114868), (93, 114880), (98, 114901), (104, 114940), (128, 115051), (137, 115084), (145, 115123), (186, 115270), (205, 115315),

Gene: Cosmo_138 Start: 65501, Stop: 66262, Start Num: 38

Candidate Starts for Cosmo_138:

(Start: 38 @65501 has 5 MA's), (Start: 60 @65558 has 30 MA's), (102, 65708), (107, 65747), (111, 65756), (114, 65765), (126, 65837), (137, 65879), (156, 65996), (160, 66017), (162, 66032), (167, 66068), (172, 66080), (173, 66086), (179, 66113), (181, 66116), (183, 66122), (195, 66143),

Gene: Count_118 Start: 70497, Stop: 71108, Start Num: 60

Candidate Starts for Count_118:

(Start: 60 @70497 has 30 MA's), (Start: 74 @70545 has 1 MA's), (143, 70836), (147, 70848), (150, 70857), (184, 71010), (197, 71040), (198, 71043), (207, 71070), (217, 71091), (222, 71103),

Gene: Cracklewink_91 Start: 56847, Stop: 57497, Start Num: 43

Candidate Starts for Cracklewink_91:

(Start: 43 @56847 has 3 MA's), (44, 56850), (46, 56859), (98, 56997), (99, 57000), (101, 57018), (102, 57024), (103, 57027), (123, 57111), (126, 57141), (137, 57183), (150, 57240), (156, 57288), (175, 57381), (179, 57399), (195, 57426), (209, 57465), (214, 57477), (218, 57486),

Gene: Cucurbita_71 Start: 46325, Stop: 47092, Start Num: 60

Candidate Starts for Cucurbita_71:

(40, 46277), (Start: 60 @46325 has 30 MA's), (77, 46376), (88, 46430), (93, 46448), (94, 46451), (116, 46562), (137, 46667), (140, 46682), (148, 46718), (168, 46844), (180, 46889), (216, 46967), (229, 47039),

Gene: Culver_71 Start: 44642, Stop: 45409, Start Num: 60

Candidate Starts for Culver_71:

(40, 44594), (Start: 60 @44642 has 30 MA's), (81, 44711), (88, 44750), (91, 44762), (98, 44789), (104, 44828), (137, 44987), (140, 45002), (148, 45038), (168, 45164), (186, 45215),

Gene: D29_66 Start: 43354, Stop: 42755, Start Num: 59

Candidate Starts for D29_66:

(Start: 59 @43354 has 15 MA's), (100, 43222), (126, 43096), (137, 43054), (139, 43042), (148, 42988), (161, 42907), (174, 42859), (203, 42808), (205, 42802), (212, 42784),

Gene: D32_71 Start: 43354, Stop: 42755, Start Num: 59

Candidate Starts for D32_71:

(Start: 59 @43354 has 15 MA's), (100, 43222), (126, 43096), (137, 43054), (139, 43042), (148, 42988), (161, 42907), (174, 42859), (203, 42808), (205, 42802), (212, 42784),

Gene: DBQu4n_72 Start: 43334, Stop: 42735, Start Num: 59

Candidate Starts for DBQu4n_72:

(Start: 59 @43334 has 15 MA's), (100, 43202), (126, 43076), (137, 43034), (139, 43022), (143, 42998), (148, 42968), (161, 42887), (174, 42839), (203, 42788), (205, 42782), (212, 42764),

Gene: DelRio_64 Start: 42409, Stop: 43041, Start Num: 60

Candidate Starts for DelRio_64:

(Start: 60 @42409 has 30 MA's), (94, 42505), (97, 42517), (102, 42547), (120, 42631), (139, 42724), (148, 42775), (149, 42778), (178, 42928), (189, 42955), (197, 42979), (221, 43030), (223, 43036),

Gene: Diminimus_126 Start: 65521, Stop: 66180, Start Num: 34

Candidate Starts for Diminimus_126:

(18, 65404), (22, 65452), (23, 65467), (31, 65509), (Start: 34 @65521 has 20 MA's), (39, 65530), (100, 65713), (101, 65716), (102, 65722), (112, 65764), (116, 65779), (125, 65830), (126, 65839), (137, 65881), (139, 65893), (146, 65941), (152, 65971), (154, 65989), (166, 66067), (195, 66106), (203, 66130), (205, 66136),

Gene: DrManhattan_34 Start: 23530, Stop: 24120, Start Num: 58

Candidate Starts for DrManhattan_34:

(27, 23428), (37, 23479), (Start: 58 @23530 has 17 MA's), (106, 23692), (108, 23701), (126, 23782), (195, 24049), (199, 24064),

Gene: DrWorm_141 Start: 96720, Stop: 96160, Start Num: 57

Candidate Starts for DrWorm_141:

(45, 96738), (57, 96720), (99, 96597), (113, 96525), (127, 96441), (132, 96411), (134, 96408), (136, 96405), (144, 96363), (148, 96333), (149, 96330), (193, 96168),

Gene: Dulcita_126 Start: 65522, Stop: 66181, Start Num: 34

Candidate Starts for Dulcita_126:

(18, 65405), (22, 65453), (23, 65468), (31, 65510), (Start: 34 @65522 has 20 MA's), (39, 65531), (100, 65714), (101, 65717), (102, 65723), (112, 65765), (116, 65780), (125, 65831), (126, 65840), (137, 65882), (139, 65894), (146, 65942), (152, 65972), (154, 65990), (166, 66068), (195, 66107), (203, 66131), (205, 66137),

Gene: Duplo_72 Start: 43391, Stop: 42792, Start Num: 59

Candidate Starts for Duplo_72:

(20, 43550), (Start: 59 @43391 has 15 MA's), (100, 43259), (126, 43133), (137, 43091), (139, 43079), (143, 43055), (148, 43025), (161, 42944), (174, 42896), (203, 42845), (205, 42839), (212, 42821),

Gene: Emma1919_240 Start: 113814, Stop: 114383, Start Num: 62

Candidate Starts for Emma1919_240:

(Start: 62 @113814 has 22 MA's), (66, 113820), (90, 113901), (93, 113913), (104, 113973), (148, 114171), (149, 114174), (164, 114273), (186, 114303), (196, 114324), (209, 114357),

Gene: EniyanLRS_132 Start: 65728, Stop: 66489, Start Num: 38

Candidate Starts for EniyanLRS_132:

(Start: 38 @65728 has 5 MA's), (Start: 60 @65785 has 30 MA's), (102, 65935), (107, 65974), (111, 65983), (114, 65992), (126, 66064), (137, 66106), (150, 66178), (156, 66223), (160, 66244), (162, 66259), (167, 66295), (172, 66307), (173, 66313), (179, 66340), (181, 66343), (183, 66349), (195, 66370),

Gene: Estes_142 Start: 67527, Stop: 68168, Start Num: 34

Candidate Starts for Estes_142:

(Start: 34 @67527 has 20 MA's), (89, 67647), (100, 67689), (101, 67692), (102, 67698), (125, 67806), (137, 67857), (140, 67872), (141, 67875), (166, 68040), (188, 68070), (192, 68076), (195, 68082), (203, 68106), (205, 68112), (209, 68121),

Gene: Exile_32 Start: 26781, Stop: 27353, Start Num: 58

Candidate Starts for Exile_32:

(Start: 58 @26781 has 17 MA's), (106, 26943), (116, 26973), (117, 26982), (126, 27033), (139, 27087), (149, 27132),

Gene: Faust_237 Start: 115627, Stop: 116199, Start Num: 62

Candidate Starts for Faust_237:

(53, 115615), (Start: 62 @115627 has 22 MA's), (90, 115714), (93, 115726), (104, 115786), (128, 115897), (186, 116119), (192, 116128), (209, 116173),

Gene: Floof_70 Start: 43466, Stop: 44098, Start Num: 48

Candidate Starts for Floof_70:

(8, 43148), (Start: 48 @43466 has 6 MA's), (91, 43568), (96, 43589), (117, 43682), (126, 43733), (130, 43760),

Gene: Forrest_238 Start: 114575, Stop: 115141, Start Num: 64

Candidate Starts for Forrest_238:

(Start: 64 @114575 has 2 MA's), (90, 114659), (93, 114671), (103, 114722), (164, 115031), (186, 115061), (196, 115082), (209, 115115),

Gene: Francob_242 Start: 114823, Stop: 115392, Start Num: 62

Candidate Starts for Francob_242:

(Start: 62 @114823 has 22 MA's), (90, 114910), (93, 114922), (104, 114982), (141, 115141), (143, 115159), (149, 115183), (150, 115186), (164, 115282), (186, 115312), (196, 115333), (209, 115366),

Gene: Francois_63 Start: 41408, Stop: 42040, Start Num: 60

Candidate Starts for Francois_63:

(2, 40730), (11, 41111), (12, 41117), (Start: 60 @41408 has 30 MA's), (93, 41501), (94, 41504), (102, 41546), (120, 41630), (137, 41711), (139, 41723), (148, 41774), (149, 41777), (171, 41906), (178, 41927), (189, 41954), (208, 42002), (221, 42029), (223, 42035),

Gene: GMA2_79 Start: 78731, Stop: 78057, Start Num: 60

Candidate Starts for GMA2_79:

(Start: 60 @78731 has 30 MA's), (92, 78638), (94, 78632), (101, 78599), (115, 78539), (120, 78509), (122, 78503), (133, 78434), (137, 78428), (139, 78416), (149, 78374), (161, 78296), (169, 78248), (170, 78245), (187, 78197), (194, 78182), (213, 78131), (227, 78074),

Gene: GardenSalsa_142 Start: 67658, Stop: 68338, Start Num: 34

Candidate Starts for GardenSalsa_142:

(Start: 34 @67658 has 20 MA's), (Start: 41 @67685 has 1 MA's), (93, 67814), (100, 67853), (102, 67862), (103, 67865), (116, 67919), (122, 67946), (126, 67979), (133, 68015), (137, 68021), (192, 68246), (205, 68282), (209, 68291), (212, 68300),

Gene: GenevaB15_144 Start: 67316, Stop: 67996, Start Num: 34

Candidate Starts for GenevaB15_144:

(Start: 34 @67316 has 20 MA's), (39, 67325), (93, 67472), (100, 67511), (126, 67637), (137, 67679), (166, 67868), (192, 67904), (205, 67940), (209, 67949), (212, 67958),

Gene: Gilson_238 Start: 114088, Stop: 114657, Start Num: 62

Candidate Starts for Gilson_238:

(Start: 62 @114088 has 22 MA's), (90, 114175), (93, 114187), (104, 114247), (148, 114445), (149, 114448), (164, 114547), (186, 114577), (196, 114598), (209, 114631),

Gene: Glaske16_128 Start: 66640, Stop: 67299, Start Num: 34

Candidate Starts for Glaske16_128:

(18, 66523), (22, 66571), (23, 66586), (31, 66628), (Start: 34 @66640 has 20 MA's), (39, 66649), (100, 66832), (101, 66835), (102, 66841), (112, 66883), (116, 66898), (125, 66949), (126, 66958), (137, 67000), (139, 67012), (146, 67060), (152, 67090), (154, 67108), (166, 67186), (195, 67225), (203, 67249), (205, 67255),

Gene: GrandSlam_65 Start: 42388, Stop: 43020, Start Num: 60

Candidate Starts for GrandSlam_65:

(Start: 60 @42388 has 30 MA's), (94, 42484), (102, 42526), (120, 42610), (139, 42703), (148, 42754), (149, 42757), (178, 42907), (189, 42934), (197, 42958), (221, 43009), (223, 43015),

Gene: Grayson_174 Start: 92927, Stop: 93514, Start Num: 62

Candidate Starts for Grayson_174:

(Start: 62 @92927 has 22 MA's), (90, 93014), (104, 93086), (105, 93092), (140, 93242), (141, 93245), (153, 93320), (192, 93440),

Gene: Gretchen_65 Start: 42871, Stop: 43527, Start Num: 48

Candidate Starts for Gretchen_65:

(Start: 48 @42871 has 6 MA's), (99, 43003), (104, 43039), (108, 43066), (126, 43147), (130, 43174), (148, 43243), (195, 43459),

Gene: Hamood_65 Start: 42388, Stop: 43020, Start Num: 60

Candidate Starts for Hamood_65:

(Start: 60 @42388 has 30 MA's), (94, 42484), (102, 42526), (120, 42610), (139, 42703), (148, 42754), (149, 42757), (178, 42907), (189, 42934), (197, 42958), (221, 43009), (223, 43015),

Gene: Hilltopfarm_86 Start: 55522, Stop: 56172, Start Num: 43

Candidate Starts for Hilltopfarm_86:

(Start: 43 @55522 has 3 MA's), (44, 55525), (46, 55534), (69, 55570), (71, 55573), (101, 55690), (123, 55783), (126, 55813), (129, 55831), (137, 55855), (141, 55873), (146, 55900), (150, 55912), (154, 55948), (158, 55972), (192, 56095), (195, 56101), (214, 56152), (218, 56161),

Gene: IPHane7_124 Start: 65705, Stop: 66364, Start Num: 34

Candidate Starts for IPHane7_124:

(Start: 34 @65705 has 20 MA's), (39, 65714), (67, 65771), (100, 65897), (101, 65900), (102, 65906), (112, 65948), (116, 65963), (126, 66023), (137, 66065), (139, 66077), (146, 66125), (152, 66155), (154, 66173), (166, 66251), (195, 66290), (203, 66314), (204, 66317), (205, 66320),

Gene: Iter_35 Start: 25060, Stop: 25653, Start Num: 58

Candidate Starts for Iter_35:

(17, 24859), (35, 25003), (Start: 58 @25060 has 17 MA's), (99, 25180), (106, 25222), (122, 25279), (126, 25312), (139, 25366), (148, 25408), (199, 25594), (207, 25615),

Gene: Jada_237 Start: 113815, Stop: 114381, Start Num: 64

Candidate Starts for Jada_237:

(Start: 64 @113815 has 2 MA's), (90, 113899), (93, 113911), (94, 113914), (98, 113932), (103, 113962), (131, 114097), (143, 114148), (164, 114271), (186, 114301), (196, 114322), (209, 114355),

Gene: JeanGrey_18 Start: 9097, Stop: 9705, Start Num: 62

Candidate Starts for JeanGrey_18:

(16, 8878), (Start: 62 @9097 has 22 MA's), (104, 9268), (150, 9478),

Gene: JonJames_77 Start: 52077, Stop: 52679, Start Num: 74

Candidate Starts for JonJames_77:

(Start: 60 @52032 has 30 MA's), (Start: 74 @52077 has 1 MA's), (82, 52101), (87, 52116), (89, 52125), (98, 52161), (148, 52410), (151, 52425), (175, 52557), (191, 52593),

Gene: Karp_234 Start: 115736, Stop: 116305, Start Num: 62

Candidate Starts for Karp_234:

(Start: 62 @115736 has 22 MA's), (90, 115823), (93, 115835), (104, 115895), (128, 116006), (145, 116078), (186, 116225), (205, 116270),

Gene: KeAlii_35 Start: 25205, Stop: 25810, Start Num: 58

Candidate Starts for KeAlii_35:

(27, 25112), (37, 25163), (Start: 58 @25205 has 17 MA's), (99, 25325), (106, 25367), (122, 25424), (199, 25739), (203, 25748),

Gene: Kenrey_244 Start: 115005, Stop: 115574, Start Num: 62

Candidate Starts for Kenrey_244:

(49, 114987), (Start: 62 @115005 has 22 MA's), (90, 115092), (93, 115104), (104, 115164), (143, 115341), (148, 115362), (149, 115365), (164, 115464), (186, 115494), (209, 115548),

Gene: Kerberos_72 Start: 43353, Stop: 42754, Start Num: 59

Candidate Starts for Kerberos_72:

(20, 43512), (Start: 59 @43353 has 15 MA's), (100, 43221), (126, 43095), (137, 43053), (139, 43041), (143, 43017), (148, 42987), (161, 42906), (174, 42858), (203, 42807), (205, 42801), (212, 42783),

Gene: Koduck_70 Start: 42050, Stop: 41427, Start Num: 59

Candidate Starts for Koduck_70:

(Start: 59 @42050 has 15 MA's), (75, 41999), (126, 41786), (135, 41747), (137, 41744), (139, 41732), (143, 41708), (165, 41558), (192, 41519),

Gene: Kumao_95 Start: 58263, Stop: 58925, Start Num: 41

Candidate Starts for Kumao_95:

(Start: 34 @58236 has 20 MA's), (Start: 41 @58263 has 1 MA's), (44, 58272), (78, 58344), (101, 58419), (102, 58425), (126, 58542), (133, 58578), (141, 58602), (146, 58641), (149, 58650), (160, 58722), (166, 58767), (212, 58896), (215, 58902),

Gene: L5_66 Start: 42203, Stop: 41580, Start Num: 59

Candidate Starts for L5_66:

(Start: 59 @42203 has 15 MA's), (75, 42152), (126, 41939), (135, 41900), (137, 41897), (139, 41885), (143, 41861), (165, 41711), (192, 41672),

Gene: Liebe_66 Start: 43964, Stop: 44557, Start Num: 58

Candidate Starts for Liebe_66:

(Start: 58 @43964 has 17 MA's), (126, 44216), (163, 44408), (220, 44543),

Gene: LilhomieP_126 Start: 66983, Stop: 67642, Start Num: 34

Candidate Starts for LilhomieP_126:

(Start: 34 @66983 has 20 MA's), (39, 66992), (67, 67049), (100, 67175), (101, 67178), (102, 67184), (112, 67226), (116, 67241), (126, 67301), (137, 67343), (139, 67355), (146, 67403), (152, 67433), (154, 67451), (166, 67529), (195, 67568), (203, 67592), (205, 67598),

Gene: Limpid_228 Start: 114440, Stop: 115012, Start Num: 62

Candidate Starts for Limpid_228:

(Start: 62 @114440 has 22 MA's), (90, 114527), (93, 114539), (104, 114599), (131, 114725), (141, 114761), (160, 114875), (186, 114932), (195, 114947), (209, 114986),

Gene: MaGuCo_59 Start: 41964, Stop: 42545, Start Num: 58

Candidate Starts for MaGuCo_59:

(Start: 58 @41964 has 17 MA's), (126, 42216), (137, 42258), (163, 42396), (205, 42498), (220, 42531),

Gene: Malisha_43 Start: 30831, Stop: 31424, Start Num: 60

Candidate Starts for Malisha_43:

(Start: 60 @30831 has 30 MA's), (79, 30891), (93, 30921), (137, 31140), (139, 31152), (148, 31191), (156, 31245), (160, 31266),

Gene: MaryV_123 Start: 63561, Stop: 64322, Start Num: 38

Candidate Starts for MaryV_123:

(Start: 38 @63561 has 5 MA's), (Start: 60 @63618 has 30 MA's), (102, 63768), (107, 63807), (111, 63816), (114, 63825), (126, 63897), (137, 63939), (156, 64056), (160, 64077), (162, 64092), (167, 64128), (172, 64140), (173, 64146), (179, 64173), (181, 64176), (183, 64182), (195, 64203),

Gene: Maureen_66 Start: 43963, Stop: 44556, Start Num: 58

Candidate Starts for Maureen_66:

(Start: 58 @43963 has 17 MA's), (126, 44215), (163, 44407), (220, 44542),

Gene: MeganTheeKilla_241 Start: 113988, Stop: 114557, Start Num: 62

Candidate Starts for MeganTheeKilla_241:

(47, 113967), (Start: 62 @113988 has 22 MA's), (66, 113994), (90, 114075), (93, 114087), (122, 114210), (131, 114273), (164, 114447), (186, 114477), (196, 114498),

Gene: Miskis_71 Start: 44799, Stop: 45566, Start Num: 60

Candidate Starts for Miskis_71:

(40, 44751), (Start: 60 @44799 has 30 MA's), (81, 44868), (88, 44904), (93, 44922), (94, 44925), (116, 45036), (137, 45141), (140, 45156), (148, 45192), (168, 45318), (180, 45363), (216, 45441), (229, 45513),

Gene: MissSwiss_34 Start: 23588, Stop: 24193, Start Num: 58

Candidate Starts for MissSwiss_34:

(27, 23486), (37, 23537), (Start: 58 @23588 has 17 MA's), (99, 23708), (106, 23750), (126, 23840), (182, 24086), (199, 24122), (200, 24128),

Gene: Moab_241 Start: 116258, Stop: 116827, Start Num: 62

Candidate Starts for Moab_241:

(57, 116252), (Start: 62 @116258 has 22 MA's), (90, 116345), (93, 116357), (104, 116417), (137, 116561), (141, 116576), (143, 116594), (148, 116615), (149, 116618), (150, 116621), (164, 116717), (186, 116747), (195, 116762), (196, 116768), (209, 116801),

Gene: ModicumRichard_97 Start: 56428, Stop: 57018, Start Num: 60

Candidate Starts for ModicumRichard_97:

(Start: 60 @56428 has 30 MA's), (94, 56527), (137, 56734), (139, 56746),

Gene: Morgana_104 Start: 58639, Stop: 59229, Start Num: 60

Candidate Starts for Morgana_104:

(5, 58186), (6, 58219), (7, 58222), (Start: 60 @58639 has 30 MA's), (94, 58738), (137, 58945), (139, 58957),

Gene: MrMagoo_144 Start: 67659, Stop: 68339, Start Num: 34

Candidate Starts for MrMagoo_144:

(Start: 34 @67659 has 20 MA's), (Start: 41 @67686 has 1 MA's), (93, 67815), (100, 67854), (102, 67863), (103, 67866), (116, 67920), (122, 67947), (126, 67980), (133, 68016), (137, 68022), (192, 68247), (205, 68283), (209, 68292), (212, 68301),

Gene: Mulch_63 Start: 41222, Stop: 41854, Start Num: 60

Candidate Starts for Mulch_63:

(Start: 60 @41222 has 30 MA's), (94, 41318), (97, 41330), (102, 41360), (120, 41444), (139, 41537), (148, 41588), (149, 41591), (178, 41741), (189, 41768), (197, 41792), (221, 41843), (223, 41849),

Gene: Nadeem_63 Start: 41210, Stop: 41842, Start Num: 60

Candidate Starts for Nadeem_63:

(Start: 60 @41210 has 30 MA's), (94, 41306), (97, 41318), (102, 41348), (120, 41432), (139, 41525), (148, 41576), (149, 41579), (178, 41729), (189, 41756), (197, 41780), (221, 41831), (223, 41837),

Gene: Naji_72 Start: 43354, Stop: 42755, Start Num: 59

Candidate Starts for Naji_72:

(Start: 59 @43354 has 15 MA's), (100, 43222), (126, 43096), (137, 43054), (139, 43042), (148, 42988), (161, 42907), (174, 42859), (203, 42808), (205, 42802), (212, 42784),

Gene: NancyRae_62 Start: 41160, Stop: 41792, Start Num: 60

Candidate Starts for NancyRae_62:

(Start: 60 @41160 has 30 MA's), (94, 41256), (97, 41268), (102, 41298), (120, 41382), (139, 41475), (148, 41526), (149, 41529), (178, 41679), (189, 41706), (197, 41730), (221, 41781), (223, 41787),

Gene: Nanosmite_137 Start: 67537, Stop: 68211, Start Num: 34

Candidate Starts for Nanosmite_137:

(Start: 34 @67537 has 20 MA's), (52, 67585), (54, 67588), (65, 67600), (68, 67606), (90, 67678), (100, 67729), (101, 67732), (102, 67738), (123, 67825), (124, 67828), (126, 67855), (137, 67897), (142, 67927), (218, 68197),

Gene: Norvs_70 Start: 45038, Stop: 45805, Start Num: 60

Candidate Starts for Norvs_70:

(40, 44990), (Start: 60 @45038 has 30 MA's), (77, 45089), (88, 45143), (93, 45161), (94, 45164), (116, 45275), (137, 45380), (140, 45395), (148, 45431), (168, 45557), (180, 45602), (216, 45680), (229, 45752),

Gene: ObLaDi_97 Start: 56474, Stop: 57064, Start Num: 60

Candidate Starts for ObLaDi_97:

(Start: 60 @56474 has 30 MA's), (94, 56573), (137, 56780), (139, 56792),

Gene: OneUp_62 Start: 44461, Stop: 45207, Start Num: 60

Candidate Starts for OneUp_62:

(40, 44413), (Start: 60 @44461 has 30 MA's), (Start: 74 @44506 has 1 MA's), (137, 44800), (140, 44815), (148, 44851), (191, 45022), (228, 45139),

Gene: P1201_60 Start: 48819, Stop: 48157, Start Num: 62

Candidate Starts for P1201_60:

(Start: 62 @48819 has 22 MA's), (89, 48717), (110, 48597),

Gene: Parada_63 Start: 41222, Stop: 41854, Start Num: 60

Candidate Starts for Parada_63:

(Start: 60 @41222 has 30 MA's), (94, 41318), (97, 41330), (102, 41360), (120, 41444), (139, 41537), (148, 41588), (149, 41591), (178, 41741), (189, 41768), (197, 41792), (221, 41843), (223, 41849),

Gene: Patelgo_240 Start: 116499, Stop: 117068, Start Num: 62

Candidate Starts for Patelgo_240:

(57, 116493), (Start: 62 @116499 has 22 MA's), (90, 116586), (93, 116598), (104, 116658), (137, 116802), (141, 116817), (143, 116835), (148, 116856), (149, 116859), (150, 116862), (164, 116958), (186, 116988), (195, 117003), (196, 117009), (209, 117042),

Gene: PauloDiaboli_229 Start: 120608, Stop: 121288, Start Num: 36

Candidate Starts for PauloDiaboli_229:

(Start: 36 @120608 has 5 MA's), (51, 120656), (80, 120725), (83, 120740), (86, 120752), (101, 120818), (126, 120935), (150, 121040), (188, 121187), (195, 121202), (203, 121226), (211, 121244),

Gene: PegLeg_129 Start: 66867, Stop: 67526, Start Num: 34

Candidate Starts for PegLeg_129:

(Start: 34 @66867 has 20 MA's), (39, 66876), (67, 66933), (100, 67059), (101, 67062), (102, 67068), (112, 67110), (116, 67125), (126, 67185), (137, 67227), (139, 67239), (146, 67287), (152, 67317), (154, 67335), (166, 67413), (195, 67452), (203, 67476), (205, 67482),

Gene: Percival_66 Start: 42771, Stop: 43427, Start Num: 48

Candidate Starts for Percival_66:

(Start: 48 @42771 has 6 MA's), (104, 42939), (108, 42966), (126, 43047), (130, 43074), (148, 43143), (195, 43359),

Gene: Peregrin_172 Start: 92358, Stop: 92945, Start Num: 62

Candidate Starts for Peregrin_172:

(Start: 62 @92358 has 22 MA's), (90, 92445), (98, 92478), (141, 92676), (145, 92700), (159, 92784), (161, 92796), (162, 92802), (195, 92877), (214, 92928),

Gene: PhinkBoden_69 Start: 45419, Stop: 46186, Start Num: 60

Candidate Starts for PhinkBoden_69:

(40, 45371), (Start: 60 @45419 has 30 MA's), (77, 45470), (88, 45524), (93, 45542), (94, 45545), (116, 45656), (137, 45761), (140, 45776), (148, 45812), (168, 45938), (180, 45983), (216, 46061), (229, 46133),

Gene: Phredrick_243 Start: 113870, Stop: 114439, Start Num: 62

Candidate Starts for Phredrick_243:

(Start: 62 @113870 has 22 MA's), (90, 113957), (93, 113969), (99, 113993), (122, 114092), (131, 114155), (143, 114206), (164, 114329), (186, 114359), (207, 114410), (209, 114413),

Gene: Pimento_66 Start: 41117, Stop: 41749, Start Num: 60

Candidate Starts for Pimento_66:

(Start: 60 @41117 has 30 MA's), (94, 41213), (102, 41255), (120, 41339), (139, 41432), (148, 41483), (149, 41486), (171, 41615), (178, 41636), (189, 41663), (208, 41711), (221, 41738), (223, 41744),

Gene: Pomar16_71 Start: 43394, Stop: 42795, Start Num: 59

Candidate Starts for Pomar16_71:

(20, 43553), (Start: 59 @43394 has 15 MA's), (100, 43262), (126, 43136), (137, 43094), (139, 43082), (143, 43058), (148, 43028), (161, 42947), (174, 42899), (203, 42848), (205, 42842), (212, 42824),

Gene: Pumpernickel_213 Start: 122012, Stop: 122635, Start Num: 55

Candidate Starts for Pumpernickel_213:

(29, 121937), (30, 121940), (Start: 38 @121961 has 5 MA's), (Start: 55 @122012 has 1 MA's), (70, 122042), (84, 122099), (99, 122162), (105, 122204), (165, 122519), (195, 122567), (214, 122618),

Gene: REQ2_72 Start: 44418, Stop: 45047, Start Num: 60

Candidate Starts for REQ2_72:

(21, 44271), (Start: 60 @44418 has 30 MA's), (119, 44646), (126, 44685), (148, 44778),

Gene: Reedo_34 Start: 23546, Stop: 24151, Start Num: 58

Candidate Starts for Reedo_34:

(24, 23444), (37, 23504), (Start: 58 @23546 has 17 MA's), (99, 23666), (106, 23708), (108, 23717), (148, 23894), (199, 24080), (203, 24089), (214, 24116),

Gene: Reindeer_129 Start: 68120, Stop: 68779, Start Num: 34

Candidate Starts for Reindeer_129:

(14, 67961), (18, 68003), (22, 68051), (23, 68066), (31, 68108), (Start: 34 @68120 has 20 MA's), (68, 68189), (100, 68312), (101, 68315), (102, 68321), (103, 68324), (125, 68429), (126, 68438), (137, 68480), (139, 68492), (145, 68522), (146, 68540), (149, 68549), (150, 68552), (166, 68666), (192, 68699), (195, 68705), (203, 68729), (205, 68735),

Gene: Rey_144 Start: 67232, Stop: 67873, Start Num: 34

Candidate Starts for Rey_144:

(Start: 34 @67232 has 20 MA's), (Start: 41 @67259 has 1 MA's), (72, 67307), (89, 67352), (100, 67394), (101, 67397), (102, 67403), (125, 67511), (137, 67562), (140, 67577), (141, 67580), (166, 67745), (188, 67775), (192, 67781), (195, 67787), (203, 67811), (205, 67817), (209, 67826),

Gene: Seahorse_42 Start: 29837, Stop: 29280, Start Num: 58

Candidate Starts for Seahorse_42:

(19, 30002), (42, 29867), (Start: 48 @29849 has 6 MA's), (Start: 58 @29837 has 17 MA's), (106, 29675), (126, 29585), (149, 29489), (162, 29402), (166, 29369), (190, 29330), (203, 29294),

Gene: SeresaTree_241 Start: 115852, Stop: 116424, Start Num: 62

Candidate Starts for SeresaTree_241:

(53, 115840), (Start: 62 @115852 has 22 MA's), (90, 115939), (93, 115951), (104, 116011), (128, 116122), (186, 116344), (192, 116353), (209, 116398),

Gene: Sham_227 Start: 115383, Stop: 115955, Start Num: 62

Candidate Starts for Sham_227:

(Start: 62 @115383 has 22 MA's), (90, 115470), (93, 115482), (98, 115503), (159, 115812), (186, 115875), (192, 115884),

Gene: Skinny_132 Start: 67984, Stop: 68643, Start Num: 34

Candidate Starts for Skinny_132:

(Start: 34 @67984 has 20 MA's), (39, 67993), (67, 68050), (100, 68176), (101, 68179), (102, 68185), (112, 68227), (116, 68242), (126, 68302), (137, 68344), (139, 68356), (146, 68404), (152, 68434), (154, 68452), (166, 68530), (195, 68569), (203, 68593), (205, 68599),

Gene: SlimJimmy_125 Start: 66693, Stop: 67352, Start Num: 34

Candidate Starts for SlimJimmy_125:

(Start: 34 @66693 has 20 MA's), (39, 66702), (67, 66759), (100, 66885), (101, 66888), (102, 66894), (112, 66936), (116, 66951), (126, 67011), (137, 67053), (139, 67065), (146, 67113), (152, 67143), (154, 67161), (166, 67239), (195, 67278), (203, 67302), (205, 67308),

Gene: Snek_34 Start: 23894, Stop: 24478, Start Num: 58

Candidate Starts for Snek_34:

(35, 23837), (Start: 58 @23894 has 17 MA's), (106, 24056), (126, 24146), (130, 24170), (148, 24242), (156, 24299), (199, 24428),

Gene: Soondubu_32 Start: 26785, Stop: 27357, Start Num: 58

Candidate Starts for Soondubu_32:

(Start: 58 @26785 has 17 MA's), (106, 26947), (114, 26968), (116, 26977), (117, 26986), (126, 27037), (139, 27091), (149, 27136),

Gene: SparkleGoddess_236 Start: 115010, Stop: 115579, Start Num: 62

Candidate Starts for SparkleGoddess_236:

(Start: 62 @115010 has 22 MA's), (90, 115097), (93, 115109), (98, 115130), (104, 115169), (128, 115280), (137, 115313), (145, 115352), (186, 115499), (205, 115544),

Gene: Squiddly_43 Start: 31863, Stop: 32456, Start Num: 60

Candidate Starts for Squiddly_43:

(Start: 60 @31863 has 30 MA's), (79, 31923), (93, 31953), (137, 32172), (139, 32184), (148, 32223), (156, 32277), (160, 32298),

Gene: StAugustine_163 Start: 90081, Stop: 89398, Start Num: 38

Candidate Starts for StAugustine_163:

(26, 90135), (Start: 38 @90081 has 5 MA's), (Start: 55 @90033 has 1 MA's), (102, 89883), (123, 89799), (126, 89769), (139, 89715), (141, 89709), (163, 89568), (166, 89538), (181, 89511), (205, 89457),

Gene: StarStuff_72 Start: 43356, Stop: 42757, Start Num: 59

Candidate Starts for StarStuff_72:

(Start: 59 @43356 has 15 MA's), (100, 43224), (126, 43098), (137, 43056), (139, 43044), (143, 43020), (148, 42990), (161, 42909), (174, 42861), (203, 42810), (205, 42804), (212, 42786),

Gene: Stigma_234 Start: 114975, Stop: 115544, Start Num: 62

Candidate Starts for Stigma_234:

(Start: 62 @114975 has 22 MA's), (90, 115062), (93, 115074), (98, 115095), (104, 115134), (128, 115245), (137, 115278), (145, 115317), (186, 115464), (205, 115509),

Gene: SuMoo_76 Start: 44793, Stop: 45428, Start Num: 48

Candidate Starts for SuMoo_76:

(10, 44481), (Start: 48 @44793 has 6 MA's), (99, 44925), (126, 45057), (130, 45084), (160, 45249), (183, 45324), (211, 45387), (212, 45393), (217, 45402),

Gene: Sue2_35 Start: 25637, Stop: 26242, Start Num: 58

Candidate Starts for Sue2_35:

(15, 25427), (17, 25436), (35, 25580), (Start: 58 @25637 has 17 MA's), (106, 25799), (139, 25943), (149, 25988), (199, 26171), (203, 26180),

Gene: Tallboi_36 Start: 26234, Stop: 26827, Start Num: 58

Candidate Starts for Tallboi_36:

(17, 26033), (35, 26177), (Start: 58 @26234 has 17 MA's), (99, 26354), (106, 26396), (126, 26486), (139, 26540), (148, 26582), (199, 26768), (207, 26789),

Gene: Tiff81_38 Start: 25430, Stop: 24873, Start Num: 56

Candidate Starts for Tiff81_38:

(32, 25496), (Start: 48 @25439 has 6 MA's), (56, 25430), (106, 25268), (126, 25178), (149, 25082), (162, 24995), (166, 24962), (190, 24923), (203, 24887),

Gene: Tomathan_72 Start: 43467, Stop: 42868, Start Num: 59

Candidate Starts for Tomathan_72:

(20, 43626), (Start: 59 @43467 has 15 MA's), (100, 43335), (126, 43209), (137, 43167), (139, 43155), (143, 43131), (148, 43101), (161, 43020), (174, 42972), (203, 42921), (205, 42915), (212, 42897),

Gene: Toniann_70 Start: 44981, Stop: 45748, Start Num: 60

Candidate Starts for Toniann_70:

(40, 44933), (Start: 60 @44981 has 30 MA's), (77, 45032), (88, 45086), (93, 45104), (94, 45107), (116, 45218), (137, 45323), (140, 45338), (148, 45374), (168, 45500), (180, 45545), (216, 45623), (229, 45695),

Gene: TunaTartare_235 Start: 117713, Stop: 118285, Start Num: 62

Candidate Starts for TunaTartare_235:

(Start: 62 @117713 has 22 MA's), (90, 117800), (92, 117809), (93, 117812), (186, 118205), (192, 118214),

Gene: Turab_33 Start: 24701, Stop: 25294, Start Num: 58

Candidate Starts for Turab_33:

(15, 24491), (17, 24500), (35, 24644), (Start: 58 @24701 has 17 MA's), (99, 24821), (106, 24863), (126, 24953), (139, 25007), (148, 25049), (199, 25235), (207, 25256),

Gene: Tweety19_34 Start: 23893, Stop: 24477, Start Num: 58

Candidate Starts for Tweety19_34:

(17, 23692), (35, 23836), (Start: 58 @23893 has 17 MA's), (106, 24055), (126, 24145), (130, 24169), (148, 24241), (156, 24298), (199, 24427),

Gene: TyDawg_121 Start: 65708, Stop: 66367, Start Num: 34

Candidate Starts for TyDawg_121:

(Start: 34 @65708 has 20 MA's), (39, 65717), (67, 65774), (100, 65900), (101, 65903), (102, 65909), (112, 65951), (116, 65966), (126, 66026), (137, 66068), (139, 66080), (146, 66128), (152, 66158), (154, 66176), (166, 66254), (195, 66293), (203, 66317), (204, 66320), (205, 66323),

Gene: UtzChips_67 Start: 41958, Stop: 42590, Start Num: 48

Candidate Starts for UtzChips_67:

(13, 41760), (Start: 48 @41958 has 6 MA's), (126, 42222), (130, 42249), (148, 42318),

Gene: VC3_71 Start: 42782, Stop: 42180, Start Num: 59

Candidate Starts for VC3_71:

(Start: 59 @42782 has 15 MA's), (100, 42647), (126, 42521), (135, 42482), (143, 42443), (149, 42410), (161, 42332), (174, 42284), (203, 42233), (212, 42209), (225, 42185),

Gene: Weasels2_179 Start: 96946, Stop: 97533, Start Num: 61

Candidate Starts for Weasels2_179:

(Start: 61 @96946 has 1 MA's), (66, 96952), (90, 97033), (99, 97069), (104, 97105), (105, 97111), (140, 97261), (141, 97264), (153, 97339), (192, 97459), (214, 97516),

Gene: WheatThin_62 Start: 41210, Stop: 41842, Start Num: 60

Candidate Starts for WheatThin_62:

(Start: 60 @41210 has 30 MA's), (94, 41306), (97, 41318), (102, 41348), (120, 41432), (139, 41525), (148, 41576), (149, 41579), (178, 41729), (189, 41756), (197, 41780), (221, 41831), (223, 41837),

Gene: Wildcat_137 Start: 65454, Stop: 66215, Start Num: 38

Candidate Starts for Wildcat_137:

(Start: 38 @65454 has 5 MA's), (Start: 60 @65511 has 30 MA's), (102, 65661), (107, 65700), (111, 65709), (114, 65718), (126, 65790), (137, 65832), (156, 65949), (160, 65970), (162, 65985), (167, 66021), (172, 66033), (173, 66039), (179, 66066), (181, 66069), (183, 66075), (195, 66096),

Gene: Wildwest_34 Start: 24787, Stop: 25380, Start Num: 58

Candidate Starts for Wildwest_34:

(17, 24586), (35, 24730), (Start: 58 @24787 has 17 MA's), (99, 24907), (106, 24949), (118, 24997), (126, 25039), (148, 25135), (175, 25270), (207, 25339),

Gene: WilliamBoone_69 Start: 43939, Stop: 44712, Start Num: 60

Candidate Starts for WilliamBoone_69:

(40, 43891), (Start: 60 @43939 has 30 MA's), (81, 44008), (88, 44047), (91, 44059), (104, 44125), (137, 44284), (140, 44299), (148, 44335), (177, 44488), (181, 44503), (206, 44566), (219, 44593), (224, 44605),

Gene: Yvonnetastic_75 Start: 49573, Stop: 50220, Start Num: 60

Candidate Starts for Yvonnetastic_75:

(Start: 60 @49573 has 30 MA's), (73, 49615), (Start: 74 @49618 has 1 MA's), (82, 49642), (87, 49657), (89, 49666), (98, 49702), (148, 49951), (151, 49966), (175, 50098), (191, 50134),

Gene: Zooman_196 Start: 115164, Stop: 115838, Start Num: 36

Candidate Starts for Zooman_196:

(Start: 36 @115164 has 5 MA's), (50, 115209), (51, 115212), (56, 115218), (63, 115227), (76, 115275), (105, 115404), (121, 115458), (138, 115548), (155, 115650), (163, 115689), (188, 115746), (199, 115776), (203, 115785),