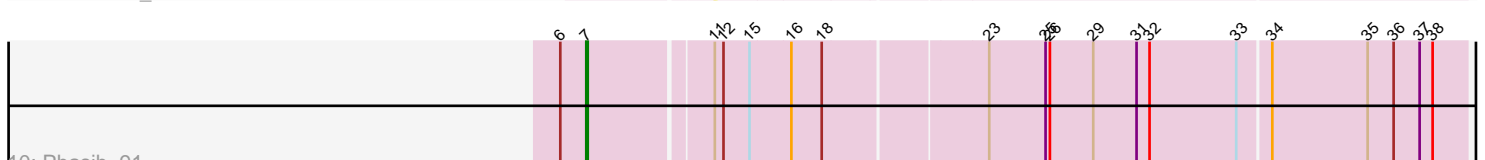
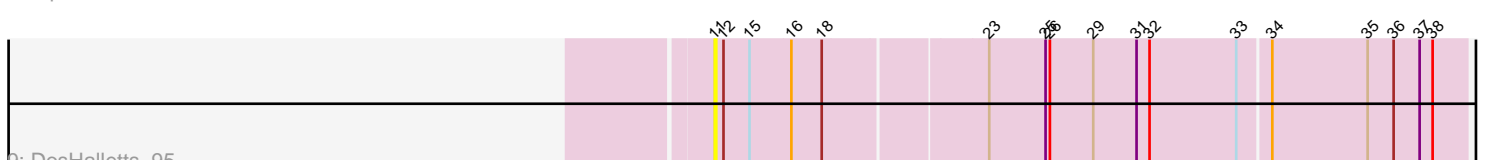
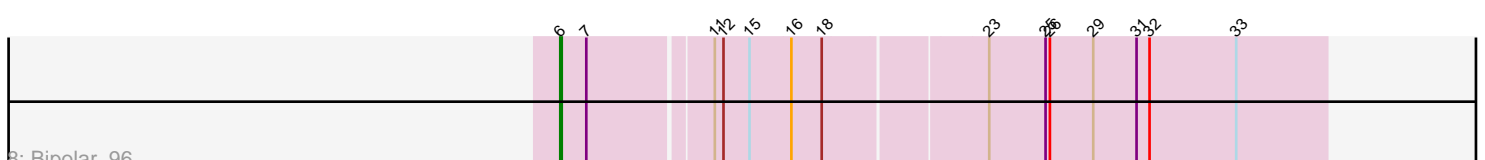
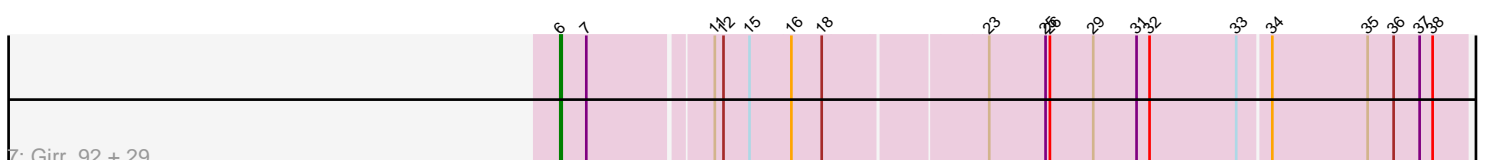
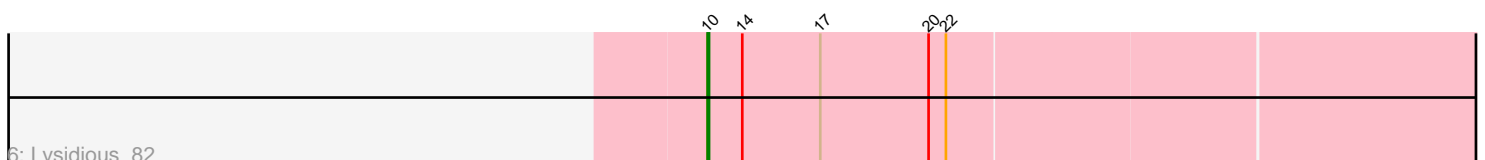
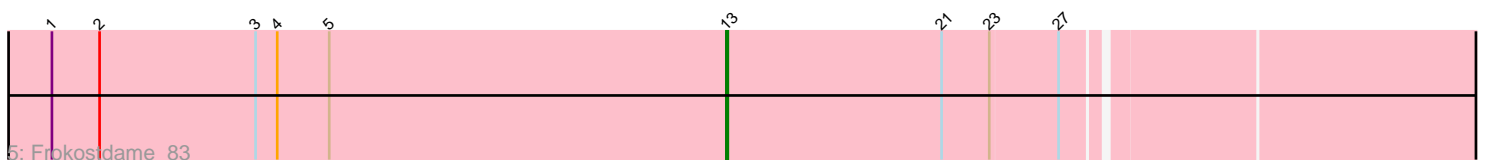
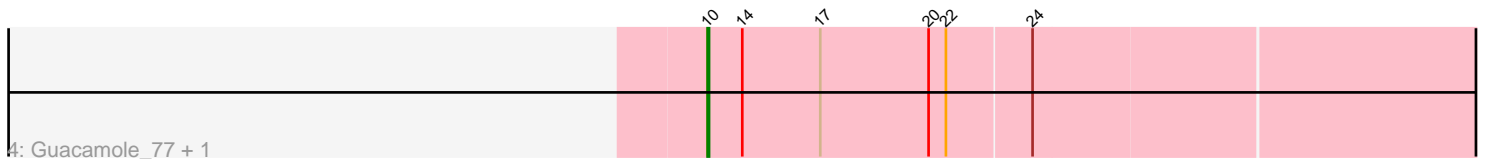
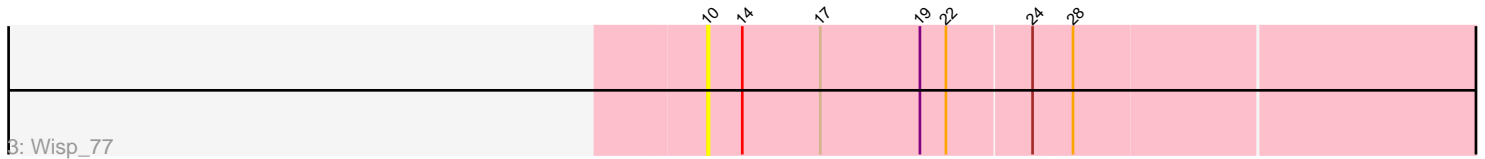
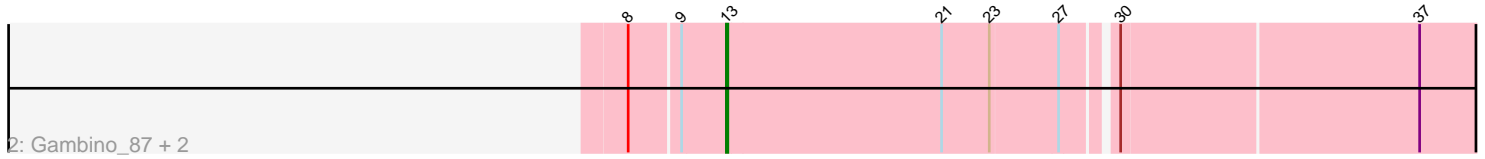
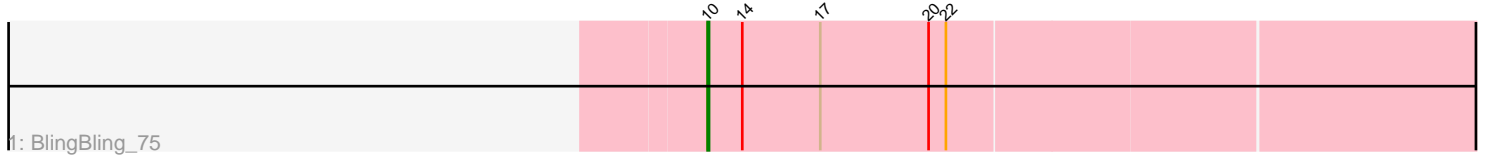


Pham 154831



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 154831 Report

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

Pham number 154831 has 42 members, 6 are drafts.

Phages represented in each track:

- Track 1 : BlingBling_75
- Track 2 : Gambino_87, Azula_85, MissRona_85
- Track 3 : Wisp_77
- Track 4 : Guacamole_77, JasperJr_77
- Track 5 : Frokostdame_83
- Track 6 : Lysidious_82
- Track 7 : Girr_92, JalFarm20_104, Llij_90, Marker_106, Aubs_94, Leozinho_91, Plumbus_94, Renaud18_103, ShroomBoi_92, Karhdo_89, Bobi_97, Cornie_91, Ruby_90, SG4_95, Alexphander_95, Totinger_97, MisterCuddles_93, Fancypants_100, Donkeykong_101, Krakatau_87, Spartacus_101, Blarby_102, Eradicator_87, Rialto_99, Jabbawokkie_101, Zapner_101, Oksu_97, Gandalph_94, SuperGrey_95, Avani_100
- Track 8 : Bipolar_96
- Track 9 : DosHalletts_95
- Track 10 : Phasih_91

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

The start number called the most often in the published annotations is 6, it was called in 27 of the 36 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alexphander_95, Aubs_94, Avani_100, Bipolar_96, Blarby_102, Bobi_97, Cornie_91, Donkeykong_101, Eradicator_87, Fancypants_100, Gandalph_94, Girr_92, Jabbawokkie_101, JalFarm20_104, Karhdo_89, Krakatau_87, Leozinho_91, Llij_90, Marker_106, MisterCuddles_93, Oksu_97, Plumbus_94, Renaud18_103, Rialto_99, Ruby_90, SG4_95, ShroomBoi_92, Spartacus_101, SuperGrey_95, Totinger_97, Zapner_101,

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

- Phasih_91,

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

- Azula_85, BlingBling_75, DosHalletts_95, Frokostdame_83, Gambino_87, Guacamole_77, JasperJr_77, Lysidious_82, MissRona_85, Wisp_77,

Summary by start number:

Start 6:

- Found in 32 of 42 (76.2%) of genes in pham
- Manual Annotations of this start: 27 of 36
- Called 96.9% of time when present
- Phage (with cluster) where this start called: Alexphander_95 (F1), Aubs_94 (F1), Avani_100 (F2), Bipolar_96 (F1), Blarby_102 (F), Bobi_97 (F1), Cornie_91 (F5), Donkeykong_101 (F1), Eradicator_87 (F1), Fancypants_100 (F1), Gandolph_94 (F1), Girr_92 (F1), Jabbawokkie_101 (F2), JalFarm20_104 (F1), Karhdo_89 (F1), Krakatau_87 (F1), Leozinho_91 (F1), Llij_90 (F1), Marker_106 (F1), MisterCuddles_93 (F1), Oksu_97 (F1), Plumbus_94 (F1), Renaud18_103 (F4), Rialto_99 (F1), Ruby_90 (F1), SG4_95 (F1), ShroomBoi_92 (F1), Spartacus_101 (F1), SuperGrey_95 (F1), Totinger_97 (F1), Zapner_101 (F2),

Start 7:

- Found in 32 of 42 (76.2%) of genes in pham
- Manual Annotations of this start: 1 of 36
- Called 3.1% of time when present
- Phage (with cluster) where this start called: Phasih_91 (F1),

Start 10:

- Found in 5 of 42 (11.9%) of genes in pham
- Manual Annotations of this start: 4 of 36
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlingBling_75 (CV), Guacamole_77 (CV), JasperJr_77 (CV), Lysidious_82 (CV), Wisp_77 (CV),

Start 11:

- Found in 33 of 42 (78.6%) of genes in pham
- No Manual Annotations of this start.
- Called 3.0% of time when present
- Phage (with cluster) where this start called: DosHalletts_95 (F1),

Start 13:

- Found in 4 of 42 (9.5%) of genes in pham
- Manual Annotations of this start: 4 of 36
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azula_85 (CV), Frokostdame_83 (CV), Gambino_87 (CV), MissRona_85 (CV),

Summary by clusters:

There are 6 clusters represented in this pham: F1, F2, F4, F5, F, CV,

Info for manual annotations of cluster CV:

- Start number 10 was manually annotated 4 times for cluster CV.
- Start number 13 was manually annotated 4 times for cluster CV.

Info for manual annotations of cluster F1:

- Start number 6 was manually annotated 22 times for cluster F1.
- Start number 7 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 6 was manually annotated 3 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 6 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster F5:

- Start number 6 was manually annotated 1 time for cluster F5.

Gene Information:

Gene: Alexphander_95 Start: 53183, Stop: 53785, Start Num: 6

Candidate Starts for Alexphander_95:

(Start: 6 @53183 has 27 MA's), (Start: 7 @53201 has 1 MA's), (11, 53282), (12, 53288), (15, 53306), (16, 53333), (18, 53354), (23, 53459), (25, 53498), (26, 53501), (29, 53531), (31, 53561), (32, 53570), (33, 53630), (34, 53651), (35, 53717), (36, 53735), (37, 53753), (38, 53762),

Gene: Aubs_94 Start: 53791, Stop: 54417, Start Num: 6

Candidate Starts for Aubs_94:

(Start: 6 @53791 has 27 MA's), (Start: 7 @53809 has 1 MA's), (11, 53890), (12, 53896), (15, 53914), (16, 53941), (18, 53962), (23, 54067), (25, 54106), (26, 54109), (29, 54139), (31, 54169), (32, 54178), (33, 54238), (34, 54259), (35, 54325), (36, 54343), (37, 54361), (38, 54370),

Gene: Avani_100 Start: 50003, Stop: 50605, Start Num: 6

Candidate Starts for Avani_100:

(Start: 6 @50003 has 27 MA's), (Start: 7 @50021 has 1 MA's), (11, 50102), (12, 50108), (15, 50126), (16, 50153), (18, 50174), (23, 50279), (25, 50318), (26, 50321), (29, 50351), (31, 50381), (32, 50390), (33, 50450), (34, 50471), (35, 50537), (36, 50555), (37, 50573), (38, 50582),

Gene: Azula_85 Start: 52425, Stop: 52931, Start Num: 13

Candidate Starts for Azula_85:

(8, 52362), (9, 52395), (Start: 13 @52425 has 4 MA's), (21, 52572), (23, 52605), (27, 52650), (30, 52680), (37, 52881),

Gene: Bipolar_96 Start: 54266, Stop: 54775, Start Num: 6

Candidate Starts for Bipolar_96:

(Start: 6 @54266 has 27 MA's), (Start: 7 @54284 has 1 MA's), (11, 54365), (12, 54371), (15, 54389), (16, 54416), (18, 54437), (23, 54542), (25, 54581), (26, 54584), (29, 54614), (31, 54644), (32, 54653), (33, 54713),

Gene: Blarby_102 Start: 50830, Stop: 51432, Start Num: 6

Candidate Starts for Blarby_102:

(Start: 6 @50830 has 27 MA's), (Start: 7 @50848 has 1 MA's), (11, 50929), (12, 50935), (15, 50953), (16, 50980), (18, 51001), (23, 51106), (25, 51145), (26, 51148), (29, 51178), (31, 51208), (32, 51217), (33, 51277), (34, 51298), (35, 51364), (36, 51382), (37, 51400), (38, 51409),

Gene: BlingBling_75 Start: 47632, Stop: 48156, Start Num: 10

Candidate Starts for BlingBling_75:

(Start: 10 @47632 has 4 MA's), (14, 47656), (17, 47710), (20, 47785), (22, 47797),

Gene: Bobi_97 Start: 53974, Stop: 54576, Start Num: 6

Candidate Starts for Bobi_97:

(Start: 6 @53974 has 27 MA's), (Start: 7 @53992 has 1 MA's), (11, 54073), (12, 54079), (15, 54097), (16, 54124), (18, 54145), (23, 54250), (25, 54289), (26, 54292), (29, 54322), (31, 54352), (32, 54361), (33, 54421), (34, 54442), (35, 54508), (36, 54526), (37, 54544), (38, 54553),

Gene: Cornie_91 Start: 51566, Stop: 52168, Start Num: 6

Candidate Starts for Cornie_91:

(Start: 6 @51566 has 27 MA's), (Start: 7 @51584 has 1 MA's), (11, 51665), (12, 51671), (15, 51689), (16, 51716), (18, 51737), (23, 51842), (25, 51881), (26, 51884), (29, 51914), (31, 51944), (32, 51953), (33, 52013), (34, 52034), (35, 52100), (36, 52118), (37, 52136), (38, 52145),

Gene: Donkeykong_101 Start: 54756, Stop: 55358, Start Num: 6

Candidate Starts for Donkeykong_101:

(Start: 6 @54756 has 27 MA's), (Start: 7 @54774 has 1 MA's), (11, 54855), (12, 54861), (15, 54879), (16, 54906), (18, 54927), (23, 55032), (25, 55071), (26, 55074), (29, 55104), (31, 55134), (32, 55143), (33, 55203), (34, 55224), (35, 55290), (36, 55308), (37, 55326), (38, 55335),

Gene: DosHalletts_95 Start: 52860, Stop: 53363, Start Num: 11

Candidate Starts for DosHalletts_95:

(11, 52860), (12, 52866), (15, 52884), (16, 52911), (18, 52932), (23, 53037), (25, 53076), (26, 53079), (29, 53109), (31, 53139), (32, 53148), (33, 53208), (34, 53229), (35, 53295), (36, 53313), (37, 53331), (38, 53340),

Gene: Eradicator_87 Start: 50977, Stop: 51579, Start Num: 6

Candidate Starts for Eradicator_87:

(Start: 6 @50977 has 27 MA's), (Start: 7 @50995 has 1 MA's), (11, 51076), (12, 51082), (15, 51100), (16, 51127), (18, 51148), (23, 51253), (25, 51292), (26, 51295), (29, 51325), (31, 51355), (32, 51364), (33, 51424), (34, 51445), (35, 51511), (36, 51529), (37, 51547), (38, 51556),

Gene: Fancypants_100 Start: 55080, Stop: 55682, Start Num: 6

Candidate Starts for Fancypants_100:

(Start: 6 @55080 has 27 MA's), (Start: 7 @55098 has 1 MA's), (11, 55179), (12, 55185), (15, 55203), (16, 55230), (18, 55251), (23, 55356), (25, 55395), (26, 55398), (29, 55428), (31, 55458), (32, 55467), (33, 55527), (34, 55548), (35, 55614), (36, 55632), (37, 55650), (38, 55659),

Gene: Frokostdame_83 Start: 51333, Stop: 51839, Start Num: 13

Candidate Starts for Frokostdame_83:

(1, 50868), (2, 50901), (3, 51009), (4, 51024), (5, 51060), (Start: 13 @51333 has 4 MA's), (21, 51480), (23, 51513), (27, 51558),

Gene: Gambino_87 Start: 52425, Stop: 52931, Start Num: 13

Candidate Starts for Gambino_87:

(8, 52362), (9, 52395), (Start: 13 @52425 has 4 MA's), (21, 52572), (23, 52605), (27, 52650), (30, 52680), (37, 52881),

Gene: Gandalph_94 Start: 50047, Stop: 50649, Start Num: 6

Candidate Starts for Gandalph_94:

(Start: 6 @50047 has 27 MA's), (Start: 7 @50065 has 1 MA's), (11, 50146), (12, 50152), (15, 50170), (16, 50197), (18, 50218), (23, 50323), (25, 50362), (26, 50365), (29, 50395), (31, 50425), (32, 50434),

(33, 50494), (34, 50515), (35, 50581), (36, 50599), (37, 50617), (38, 50626),

Gene: Girr_92 Start: 52791, Stop: 53393, Start Num: 6

Candidate Starts for Girr_92:

(Start: 6 @52791 has 27 MA's), (Start: 7 @52809 has 1 MA's), (11, 52890), (12, 52896), (15, 52914), (16, 52941), (18, 52962), (23, 53067), (25, 53106), (26, 53109), (29, 53139), (31, 53169), (32, 53178), (33, 53238), (34, 53259), (35, 53325), (36, 53343), (37, 53361), (38, 53370),

Gene: Guacamole_77 Start: 48781, Stop: 49305, Start Num: 10

Candidate Starts for Guacamole_77:

(Start: 10 @48781 has 4 MA's), (14, 48805), (17, 48859), (20, 48934), (22, 48946), (24, 49003),

Gene: Jabbawokkie_101 Start: 50750, Stop: 51352, Start Num: 6

Candidate Starts for Jabbawokkie_101:

(Start: 6 @50750 has 27 MA's), (Start: 7 @50768 has 1 MA's), (11, 50849), (12, 50855), (15, 50873), (16, 50900), (18, 50921), (23, 51026), (25, 51065), (26, 51068), (29, 51098), (31, 51128), (32, 51137), (33, 51197), (34, 51218), (35, 51284), (36, 51302), (37, 51320), (38, 51329),

Gene: JalFarm20_104 Start: 54443, Stop: 55045, Start Num: 6

Candidate Starts for JalFarm20_104:

(Start: 6 @54443 has 27 MA's), (Start: 7 @54461 has 1 MA's), (11, 54542), (12, 54548), (15, 54566), (16, 54593), (18, 54614), (23, 54719), (25, 54758), (26, 54761), (29, 54791), (31, 54821), (32, 54830), (33, 54890), (34, 54911), (35, 54977), (36, 54995), (37, 55013), (38, 55022),

Gene: JasperJr_77 Start: 48781, Stop: 49305, Start Num: 10

Candidate Starts for JasperJr_77:

(Start: 10 @48781 has 4 MA's), (14, 48805), (17, 48859), (20, 48934), (22, 48946), (24, 49003),

Gene: Karhdo_89 Start: 50178, Stop: 50780, Start Num: 6

Candidate Starts for Karhdo_89:

(Start: 6 @50178 has 27 MA's), (Start: 7 @50196 has 1 MA's), (11, 50277), (12, 50283), (15, 50301), (16, 50328), (18, 50349), (23, 50454), (25, 50493), (26, 50496), (29, 50526), (31, 50556), (32, 50565), (33, 50625), (34, 50646), (35, 50712), (36, 50730), (37, 50748), (38, 50757),

Gene: Krakatau_87 Start: 48136, Stop: 48738, Start Num: 6

Candidate Starts for Krakatau_87:

(Start: 6 @48136 has 27 MA's), (Start: 7 @48154 has 1 MA's), (11, 48235), (12, 48241), (15, 48259), (16, 48286), (18, 48307), (23, 48412), (25, 48451), (26, 48454), (29, 48484), (31, 48514), (32, 48523), (33, 48583), (34, 48604), (35, 48670), (36, 48688), (37, 48706), (38, 48715),

Gene: Leozinho_91 Start: 49823, Stop: 50425, Start Num: 6

Candidate Starts for Leozinho_91:

(Start: 6 @49823 has 27 MA's), (Start: 7 @49841 has 1 MA's), (11, 49922), (12, 49928), (15, 49946), (16, 49973), (18, 49994), (23, 50099), (25, 50138), (26, 50141), (29, 50171), (31, 50201), (32, 50210), (33, 50270), (34, 50291), (35, 50357), (36, 50375), (37, 50393), (38, 50402),

Gene: Llij_90 Start: 51368, Stop: 51970, Start Num: 6

Candidate Starts for Llij_90:

(Start: 6 @51368 has 27 MA's), (Start: 7 @51386 has 1 MA's), (11, 51467), (12, 51473), (15, 51491), (16, 51518), (18, 51539), (23, 51644), (25, 51683), (26, 51686), (29, 51716), (31, 51746), (32, 51755), (33, 51815), (34, 51836), (35, 51902), (36, 51920), (37, 51938), (38, 51947),

Gene: Lysidious_82 Start: 49840, Stop: 50364, Start Num: 10

Candidate Starts for Lysidious_82:

(Start: 10 @49840 has 4 MA's), (14, 49864), (17, 49918), (20, 49993), (22, 50005),

Gene: Marker_106 Start: 53540, Stop: 54142, Start Num: 6

Candidate Starts for Marker_106:

(Start: 6 @53540 has 27 MA's), (Start: 7 @53558 has 1 MA's), (11, 53639), (12, 53645), (15, 53663), (16, 53690), (18, 53711), (23, 53816), (25, 53855), (26, 53858), (29, 53888), (31, 53918), (32, 53927), (33, 53987), (34, 54008), (35, 54074), (36, 54092), (37, 54110), (38, 54119),

Gene: MissRona_85 Start: 52426, Stop: 52932, Start Num: 13

Candidate Starts for MissRona_85:

(8, 52363), (9, 52396), (Start: 13 @52426 has 4 MA's), (21, 52573), (23, 52606), (27, 52651), (30, 52681), (37, 52882),

Gene: MisterCuddles_93 Start: 52791, Stop: 53393, Start Num: 6

Candidate Starts for MisterCuddles_93:

(Start: 6 @52791 has 27 MA's), (Start: 7 @52809 has 1 MA's), (11, 52890), (12, 52896), (15, 52914), (16, 52941), (18, 52962), (23, 53067), (25, 53106), (26, 53109), (29, 53139), (31, 53169), (32, 53178), (33, 53238), (34, 53259), (35, 53325), (36, 53343), (37, 53361), (38, 53370),

Gene: Oksu_97 Start: 54545, Stop: 55147, Start Num: 6

Candidate Starts for Oksu_97:

(Start: 6 @54545 has 27 MA's), (Start: 7 @54563 has 1 MA's), (11, 54644), (12, 54650), (15, 54668), (16, 54695), (18, 54716), (23, 54821), (25, 54860), (26, 54863), (29, 54893), (31, 54923), (32, 54932), (33, 54992), (34, 55013), (35, 55079), (36, 55097), (37, 55115), (38, 55124),

Gene: Phasih_91 Start: 51164, Stop: 51748, Start Num: 7

Candidate Starts for Phasih_91:

(Start: 6 @51146 has 27 MA's), (Start: 7 @51164 has 1 MA's), (11, 51245), (12, 51251), (15, 51269), (16, 51296), (18, 51317), (23, 51422), (25, 51461), (26, 51464), (29, 51494), (31, 51524), (32, 51533), (33, 51593), (34, 51614), (35, 51680), (36, 51698), (37, 51716), (38, 51725),

Gene: Plumbus_94 Start: 50132, Stop: 50734, Start Num: 6

Candidate Starts for Plumbus_94:

(Start: 6 @50132 has 27 MA's), (Start: 7 @50150 has 1 MA's), (11, 50231), (12, 50237), (15, 50255), (16, 50282), (18, 50303), (23, 50408), (25, 50447), (26, 50450), (29, 50480), (31, 50510), (32, 50519), (33, 50579), (34, 50600), (35, 50666), (36, 50684), (37, 50702), (38, 50711),

Gene: Renaud18_103 Start: 53095, Stop: 53697, Start Num: 6

Candidate Starts for Renaud18_103:

(Start: 6 @53095 has 27 MA's), (Start: 7 @53113 has 1 MA's), (11, 53194), (12, 53200), (15, 53218), (16, 53245), (18, 53266), (23, 53371), (25, 53410), (26, 53413), (29, 53443), (31, 53473), (32, 53482), (33, 53542), (34, 53563), (35, 53629), (36, 53647), (37, 53665), (38, 53674),

Gene: Rialto_99 Start: 53385, Stop: 53987, Start Num: 6

Candidate Starts for Rialto_99:

(Start: 6 @53385 has 27 MA's), (Start: 7 @53403 has 1 MA's), (11, 53484), (12, 53490), (15, 53508), (16, 53535), (18, 53556), (23, 53661), (25, 53700), (26, 53703), (29, 53733), (31, 53763), (32, 53772), (33, 53832), (34, 53853), (35, 53919), (36, 53937), (37, 53955), (38, 53964),

Gene: Ruby_90 Start: 52792, Stop: 53394, Start Num: 6

Candidate Starts for Ruby_90:

(Start: 6 @52792 has 27 MA's), (Start: 7 @52810 has 1 MA's), (11, 52891), (12, 52897), (15, 52915), (16, 52942), (18, 52963), (23, 53068), (25, 53107), (26, 53110), (29, 53140), (31, 53170), (32, 53179), (33, 53239), (34, 53260), (35, 53326), (36, 53344), (37, 53362), (38, 53371),

Gene: SG4_95 Start: 53628, Stop: 54230, Start Num: 6

Candidate Starts for SG4_95:

(Start: 6 @53628 has 27 MA's), (Start: 7 @53646 has 1 MA's), (11, 53727), (12, 53733), (15, 53751), (16, 53778), (18, 53799), (23, 53904), (25, 53943), (26, 53946), (29, 53976), (31, 54006), (32, 54015), (33, 54075), (34, 54096), (35, 54162), (36, 54180), (37, 54198), (38, 54207),

Gene: ShroomBoi_92 Start: 52179, Stop: 52781, Start Num: 6

Candidate Starts for ShroomBoi_92:

(Start: 6 @52179 has 27 MA's), (Start: 7 @52197 has 1 MA's), (11, 52278), (12, 52284), (15, 52302), (16, 52329), (18, 52350), (23, 52455), (25, 52494), (26, 52497), (29, 52527), (31, 52557), (32, 52566), (33, 52626), (34, 52647), (35, 52713), (36, 52731), (37, 52749), (38, 52758),

Gene: Spartacus_101 Start: 55500, Stop: 56126, Start Num: 6

Candidate Starts for Spartacus_101:

(Start: 6 @55500 has 27 MA's), (Start: 7 @55518 has 1 MA's), (11, 55599), (12, 55605), (15, 55623), (16, 55650), (18, 55671), (23, 55776), (25, 55815), (26, 55818), (29, 55848), (31, 55878), (32, 55887), (33, 55947), (34, 55968), (35, 56034), (36, 56052), (37, 56070), (38, 56079),

Gene: SuperGrey_95 Start: 54630, Stop: 55232, Start Num: 6

Candidate Starts for SuperGrey_95:

(Start: 6 @54630 has 27 MA's), (Start: 7 @54648 has 1 MA's), (11, 54729), (12, 54735), (15, 54753), (16, 54780), (18, 54801), (23, 54906), (25, 54945), (26, 54948), (29, 54978), (31, 55008), (32, 55017), (33, 55077), (34, 55098), (35, 55164), (36, 55182), (37, 55200), (38, 55209),

Gene: Totinger_97 Start: 52898, Stop: 53500, Start Num: 6

Candidate Starts for Totinger_97:

(Start: 6 @52898 has 27 MA's), (Start: 7 @52916 has 1 MA's), (11, 52997), (12, 53003), (15, 53021), (16, 53048), (18, 53069), (23, 53174), (25, 53213), (26, 53216), (29, 53246), (31, 53276), (32, 53285), (33, 53345), (34, 53366), (35, 53432), (36, 53450), (37, 53468), (38, 53477),

Gene: Wisp_77 Start: 48505, Stop: 49029, Start Num: 10

Candidate Starts for Wisp_77:

(Start: 10 @48505 has 4 MA's), (14, 48529), (17, 48583), (19, 48652), (22, 48670), (24, 48727), (28, 48754),

Gene: Zapner_101 Start: 50844, Stop: 51446, Start Num: 6

Candidate Starts for Zapner_101:

(Start: 6 @50844 has 27 MA's), (Start: 7 @50862 has 1 MA's), (11, 50943), (12, 50949), (15, 50967), (16, 50994), (18, 51015), (23, 51120), (25, 51159), (26, 51162), (29, 51192), (31, 51222), (32, 51231), (33, 51291), (34, 51312), (35, 51378), (36, 51396), (37, 51414), (38, 51423),