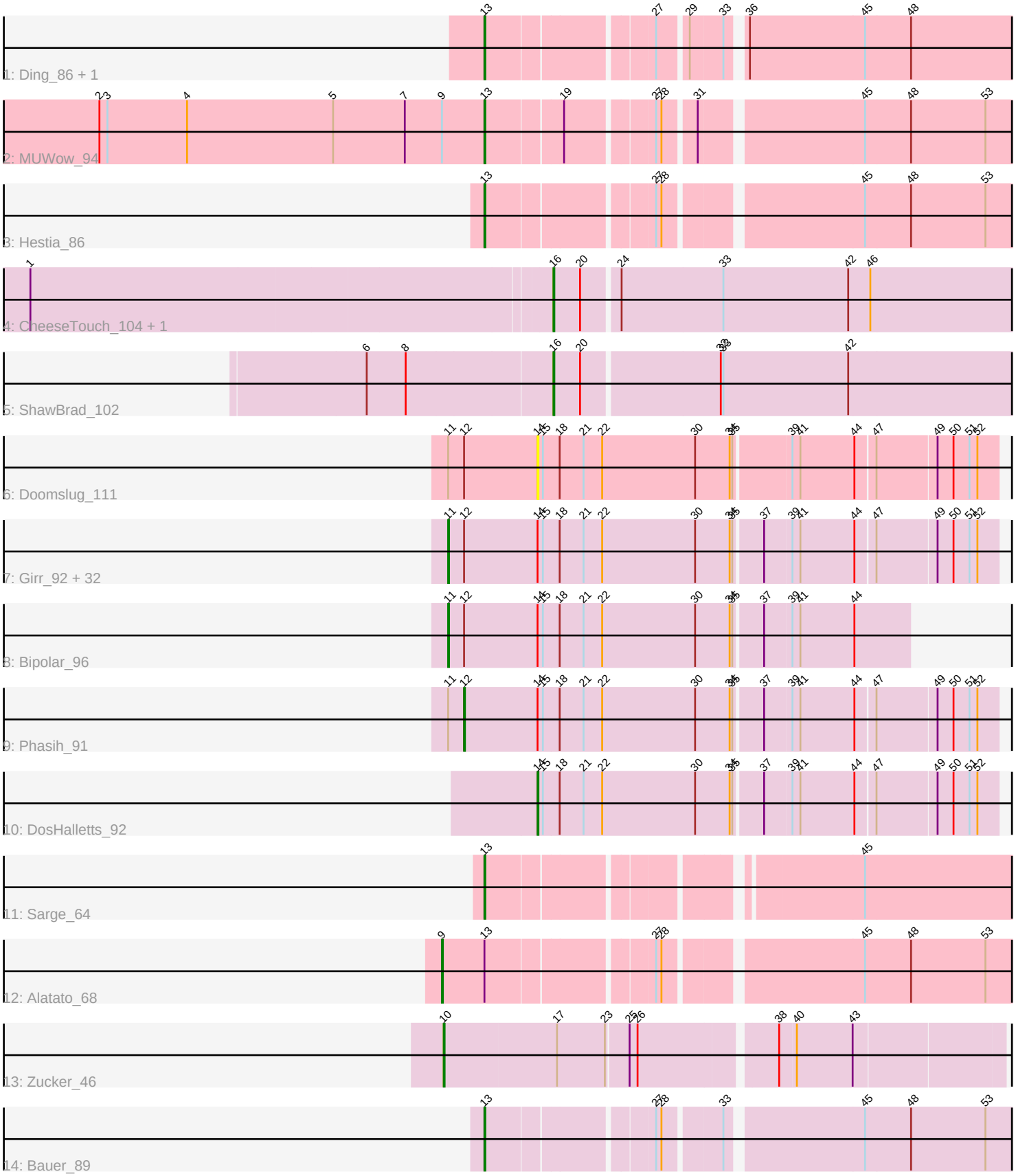
Pham 347741


1: Ding_86 + 1
2: MUWow_94
3: Hestia_86
4: CheeseTouch_104 + 1
5: ShawBrad_102
6: Doomslug_111
7: Girr_92 + 32
8: Bipolar_96
9: Phasih_91
10: DosHalletts_92
11: Sarge_64
12: Alatato_68
13: Zucker_46
14: Bauer_89

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 347741 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347741 has 48 members, 4 are drafts.

Phages represented in each track:
• Track 1 : Ding_86, Shukran_89
• Track 2 : MUWow_94
• Track 3 : Hestia_86
• Track 4 : CheeseTouch_104, BENtherdunthat_96
• Track 5 : ShawBrad_102
• Track 6 : Doomslug_111
• Track 7 : Girr_92, Cornie_91, Llij_90, Aubs_94, Leozinho_91, Plumbus_94, Renaud18_103, Brushbloom_95, ShroomBoi_92, Rialto_99, Karhdo_89, Bobi_97, JalFarm20_104, Ruby_90, SG4_95, Alexphander_95, Totinger_97, SilverChicken_102, Gandalph_94, Marker_99, Fancypants_100, Donkeykong_101, Zapner_101, Clank_91, Spartacus_101, Blarby_102, Eradicator_87, Oksu_99, Krakatau_87, MisterCuddles_93, Jabbawokkie_101, SuperGrey_95, Avani_100
• Track 8 : Bipolar_96
• Track 9 : Phasih_91
• Track 10 : DosHalletts_92
• Track 11 : Sarge_64
• Track 12 : Alatato_68
• Track 13 : Zucker_46
• Track 14 : Bauer_89

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

The start number called the most often in the published annotations is 11, it was called in 31 of the 44 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, Brushbloom_95, Clank_91, 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_99, MisterCuddles_93, Oksu_99, Plumbus_94, Renaud18_103, Rialto_99, Ruby_90, SG4_95, ShroomBoi_92, SilverChicken_102, Spartacus_101, SuperGrey_95, Totinger_97, Zapner_101,

Genes that have the "Most Annotated" start but do not call it:
• Doomslug_111, Phasih_91,

Genes that do not have the "Most Annotated" start:
• Alatato_68, BENtherdunthat_96, Bauer_89, CheeseTouch_104, Ding_86, DosHalletts_92, Hestia_86, MUWow_94, Sarge_64, ShawBrad_102, Shukran_89, Zucker_46,

Summary by start number:

Start 9:
• Found in 2 of 48 (4.2%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Alatato_68 (FB),

Start 10:
• Found in 1 of 48 (2.1%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Zucker_46 (FN),

Start 11:
• Found in 36 of 48 (75.0%) of genes in pham
• Manual Annotations of this start: 31 of 44
• Called 94.4% 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), Brushbloom_95 (F1), Clank_91 (F), Cornie_91 (F5), Donkeykong_101 (F1), Eradicator_87 (F1), Fancypants_100 (F1), Gandalph_94 (F1), Girr_92 (F1), Jabbawokkie_101 (F2), JalFarm20_104 (F1), Karhdo_89 (F1), Krakatau_87 (F1), Leozinho_91 (F1), Llij_90 (F1), Marker_99 (F1), MisterCuddles_93 (F1), Oksu_99 (F1), Plumbus_94 (F1), Renaud18_103 (F4), Rialto_99 (F1), Ruby_90 (F1), SG4_95 (F1), ShroomBoi_92 (F1), SilverChicken_102 (F2), Spartacus_101 (F1), SuperGrey_95 (F1), Totinger_97 (F1), Zapner_101 (F2),

Start 12:
• Found in 36 of 48 (75.0%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 2.8% of time when present
• Phage (with cluster) where this start called: Phasih_91 (F1),

Start 13:
• Found in 7 of 48 (14.6%) of genes in pham
• Manual Annotations of this start: 6 of 44
• Called 85.7% of time when present
• Phage (with cluster) where this start called: Bauer_89 (FN), Ding_86 (AY), Hestia_86 (AY), MUWow_94 (AY), Sarge_64 (FB), Shukran_89 (AY),

Start 14:
• Found in 37 of 48 (77.1%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 5.4% of time when present

• Phage (with cluster) where this start called: Doomslug_111 (F), DosHalletts_92 (F1),

Start 16:
• Found in 3 of 48 (6.2%) of genes in pham
• Manual Annotations of this start: 3 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BENtherdunthat_96 (DN1), CheeseTouch_104 (DN1), ShawBrad_102 (DN1),

Summary by clusters:

There are 9 clusters represented in this pham: F1, F2, F4, F5, F, FB, DN1, AY, FN,

Info for manual annotations of cluster AY:
•Start number 13 was manually annotated 4 times for cluster AY.

Info for manual annotations of cluster DN1:
•Start number 16 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster F1:
•Start number 11 was manually annotated 26 times for cluster F1.
•Start number 12 was manually annotated 1 time for cluster F1.
•Start number 14 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:
•Start number 11 was manually annotated 3 times for cluster F2.

Info for manual annotations of cluster F4:
•Start number 11 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster F5:
•Start number 11 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster FB:
•Start number 9 was manually annotated 1 time for cluster FB.
•Start number 13 was manually annotated 1 time for cluster FB.

Info for manual annotations of cluster FN:
•Start number 10 was manually annotated 1 time for cluster FN.
•Start number 13 was manually annotated 1 time for cluster FN.

Gene Information:

Gene: Alatato_68 Start: 37755, Stop: 38360, Start Num: 9
Candidate Starts for Alatato_68:
(Start: 9 @37755 has 1 MA's), (Start: 13 @37803 has 6 MA's), (27, 37974), (28, 37980), (45, 38184), (48, 38235), (53, 38319),

Gene: Alexphander_95 Start: 53183, Stop: 53785, Start Num: 11
Candidate Starts for Alexphander_95:

(Start: 11 @53183 has 31 MA's), (Start: 12 @53201 has 1 MA's), (Start: 14 @53282 has 1 MA's), (15, 53288), (18, 53306), (21, 53333), (22, 53354), (30, 53459), (34, 53498), (35, 53501), (37, 53531), (39, 53561), (41, 53570), (44, 53630), (47, 53651), (49, 53717), (50, 53735), (51, 53753), (52, 53762),

Gene: Aubs_94 Start: 53791, Stop: 54417, Start Num: 11
Candidate Starts for Aubs_94:
(Start: 11 @53791 has 31 MA's), (Start: 12 @53809 has 1 MA's), (Start: 14 @53890 has 1 MA's), (15, 53896), (18, 53914), (21, 53941), (22, 53962), (30, 54067), (34, 54106), (35, 54109), (37, 54139), (39, 54169), (41, 54178), (44, 54238), (47, 54259), (49, 54325), (50, 54343), (51, 54361), (52, 54370),

Gene: Avani_100 Start: 50003, Stop: 50605, Start Num: 11
Candidate Starts for Avani_100:
(Start: 11 @50003 has 31 MA's), (Start: 12 @50021 has 1 MA's), (Start: 14 @50102 has 1 MA's), (15, 50108), (18, 50126), (21, 50153), (22, 50174), (30, 50279), (34, 50318), (35, 50321), (37, 50351), (39, 50381), (41, 50390), (44, 50450), (47, 50471), (49, 50537), (50, 50555), (51, 50573), (52, 50582),

Gene: BENtherdunthat_96 Start: 51490, Stop: 52080, Start Num: 16
Candidate Starts for BENtherdunthat_96:
(1, 50917), (Start: 16 @51490 has 3 MA's), (20, 51520), (24, 51559), (33, 51673), (42, 51814), (46, 51838),

Gene: Bauer_89 Start: 47543, Stop: 48100, Start Num: 13
Candidate Starts for Bauer_89:
(Start: 13 @47543 has 6 MA's), (27, 47714), (28, 47720), (33, 47780), (45, 47924), (48, 47975), (53, 48059),

Gene: Bipolar_96 Start: 54266, Stop: 54775, Start Num: 11
Candidate Starts for Bipolar_96:
(Start: 11 @54266 has 31 MA's), (Start: 12 @54284 has 1 MA's), (Start: 14 @54365 has 1 MA's), (15, 54371), (18, 54389), (21, 54416), (22, 54437), (30, 54542), (34, 54581), (35, 54584), (37, 54614), (39, 54644), (41, 54653), (44, 54713),

Gene: Blarby_102 Start: 50830, Stop: 51432, Start Num: 11
Candidate Starts for Blarby_102:
(Start: 11 @50830 has 31 MA's), (Start: 12 @50848 has 1 MA's), (Start: 14 @50929 has 1 MA's), (15, 50935), (18, 50953), (21, 50980), (22, 51001), (30, 51106), (34, 51145), (35, 51148), (37, 51178), (39, 51208), (41, 51217), (44, 51277), (47, 51298), (49, 51364), (50, 51382), (51, 51400), (52, 51409),

Gene: Bobi_97 Start: 53974, Stop: 54576, Start Num: 11
Candidate Starts for Bobi_97:
(Start: 11 @53974 has 31 MA's), (Start: 12 @53992 has 1 MA's), (Start: 14 @54073 has 1 MA's), (15, 54079), (18, 54097), (21, 54124), (22, 54145), (30, 54250), (34, 54289), (35, 54292), (37, 54322), (39, 54352), (41, 54361), (44, 54421), (47, 54442), (49, 54508), (50, 54526), (51, 54544), (52, 54553),

Gene: Brushbloom_95 Start: 53544, Stop: 54146, Start Num: 11
Candidate Starts for Brushbloom_95:
(Start: 11 @53544 has 31 MA's), (Start: 12 @53562 has 1 MA's), (Start: 14 @53643 has 1 MA's), (15, 53649), (18, 53667), (21, 53694), (22, 53715), (30, 53820), (34, 53859), (35, 53862), (37, 53892), (39, 53922), (41, 53931), (44, 53991), (47, 54012), (49, 54078), (50, 54096), (51, 54114), (52, 54123),

Gene: CheeseTouch_104 Start: 50603, Stop: 51193, Start Num: 16
Candidate Starts for CheeseTouch_104:

(1, 50030), (Start: 16 @50603 has 3 MA's), (20, 50633), (24, 50672), (33, 50786), (42, 50927), (46, 50951),

Gene: Clank_91 Start: 49868, Stop: 50470, Start Num: 11
Candidate Starts for Clank_91:
(Start: 11 @49868 has 31 MA's), (Start: 12 @49886 has 1 MA's), (Start: 14 @49967 has 1 MA's), (15, 49973), (18, 49991), (21, 50018), (22, 50039), (30, 50144), (34, 50183), (35, 50186), (37, 50216), (39, 50246), (41, 50255), (44, 50315), (47, 50336), (49, 50402), (50, 50420), (51, 50438), (52, 50447),

Gene: Cornie_91 Start: 51566, Stop: 52168, Start Num: 11
Candidate Starts for Cornie_91:
(Start: 11 @51566 has 31 MA's), (Start: 12 @51584 has 1 MA's), (Start: 14 @51665 has 1 MA's), (15, 51671), (18, 51689), (21, 51716), (22, 51737), (30, 51842), (34, 51881), (35, 51884), (37, 51914), (39, 51944), (41, 51953), (44, 52013), (47, 52034), (49, 52100), (50, 52118), (51, 52136), (52, 52145),

Gene: Ding_86 Start: 50793, Stop: 51350, Start Num: 13
Candidate Starts for Ding_86:
(Start: 13 @50793 has 6 MA's), (27, 50964), (29, 50994), (33, 51030), (36, 51045), (45, 51174), (48, 51225),

Gene: Donkeykong_101 Start: 54756, Stop: 55358, Start Num: 11
Candidate Starts for Donkeykong_101:
(Start: 11 @54756 has 31 MA's), (Start: 12 @54774 has 1 MA's), (Start: 14 @54855 has 1 MA's), (15, 54861), (18, 54879), (21, 54906), (22, 54927), (30, 55032), (34, 55071), (35, 55074), (37, 55104), (39, 55134), (41, 55143), (44, 55203), (47, 55224), (49, 55290), (50, 55308), (51, 55326), (52, 55335),

Gene: Doomslug_111 Start: 55343, Stop: 55846, Start Num: 14
Candidate Starts for Doomslug_111:
(Start: 11 @55244 has 31 MA's), (Start: 12 @55262 has 1 MA's), (Start: 14 @55343 has 1 MA's), (15, 55349), (18, 55367), (21, 55394), (22, 55415), (30, 55520), (34, 55559), (35, 55562), (39, 55622), (41, 55631), (44, 55691), (47, 55712), (49, 55778), (50, 55796), (51, 55814), (52, 55823),

Gene: DosHalletts_92 Start: 52860, Stop: 53363, Start Num: 14
Candidate Starts for DosHalletts_92:
(Start: 14 @52860 has 1 MA's), (15, 52866), (18, 52884), (21, 52911), (22, 52932), (30, 53037), (34, 53076), (35, 53079), (37, 53109), (39, 53139), (41, 53148), (44, 53208), (47, 53229), (49, 53295), (50, 53313), (51, 53331), (52, 53340),

Gene: Eradicator_87 Start: 50977, Stop: 51579, Start Num: 11
Candidate Starts for Eradicator_87:
(Start: 11 @50977 has 31 MA's), (Start: 12 @50995 has 1 MA's), (Start: 14 @51076 has 1 MA's), (15, 51082), (18, 51100), (21, 51127), (22, 51148), (30, 51253), (34, 51292), (35, 51295), (37, 51325), (39, 51355), (41, 51364), (44, 51424), (47, 51445), (49, 51511), (50, 51529), (51, 51547), (52, 51556),

Gene: Fancypants_100 Start: 55080, Stop: 55682, Start Num: 11
Candidate Starts for Fancypants_100:
(Start: 11 @55080 has 31 MA's), (Start: 12 @55098 has 1 MA's), (Start: 14 @55179 has 1 MA's), (15, 55185), (18, 55203), (21, 55230), (22, 55251), (30, 55356), (34, 55395), (35, 55398), (37, 55428), (39, 55458), (41, 55467), (44, 55527), (47, 55548), (49, 55614), (50, 55632), (51, 55650), (52, 55659),

Gene: Gandalph_94 Start: 50047, Stop: 50649, Start Num: 11
Candidate Starts for Gandalph_94:

(Start: 11 @50047 has 31 MA's), (Start: 12 @50065 has 1 MA's), (Start: 14 @50146 has 1 MA's), (15, 50152), (18, 50170), (21, 50197), (22, 50218), (30, 50323), (34, 50362), (35, 50365), (37, 50395), (39, 50425), (41, 50434), (44, 50494), (47, 50515), (49, 50581), (50, 50599), (51, 50617), (52, 50626),

Gene: Girr_92 Start: 52791, Stop: 53393, Start Num: 11
Candidate Starts for Girr_92:
(Start: 11 @52791 has 31 MA's), (Start: 12 @52809 has 1 MA's), (Start: 14 @52890 has 1 MA's), (15, 52896), (18, 52914), (21, 52941), (22, 52962), (30, 53067), (34, 53106), (35, 53109), (37, 53139), (39, 53169), (41, 53178), (44, 53238), (47, 53259), (49, 53325), (50, 53343), (51, 53361), (52, 53370),

Gene: Hestia_86 Start: 48560, Stop: 49117, Start Num: 13
Candidate Starts for Hestia_86:
(Start: 13 @48560 has 6 MA's), (27, 48731), (28, 48737), (45, 48941), (48, 48992), (53, 49076),

Gene: Jabbawokkie_101 Start: 50750, Stop: 51352, Start Num: 11
Candidate Starts for Jabbawokkie_101:
(Start: 11 @50750 has 31 MA's), (Start: 12 @50768 has 1 MA's), (Start: 14 @50849 has 1 MA's), (15, 50855), (18, 50873), (21, 50900), (22, 50921), (30, 51026), (34, 51065), (35, 51068), (37, 51098), (39, 51128), (41, 51137), (44, 51197), (47, 51218), (49, 51284), (50, 51302), (51, 51320), (52, 51329),

Gene: JalFarm20_104 Start: 54443, Stop: 55045, Start Num: 11
Candidate Starts for JalFarm20_104:
(Start: 11 @54443 has 31 MA's), (Start: 12 @54461 has 1 MA's), (Start: 14 @54542 has 1 MA's), (15, 54548), (18, 54566), (21, 54593), (22, 54614), (30, 54719), (34, 54758), (35, 54761), (37, 54791), (39, 54821), (41, 54830), (44, 54890), (47, 54911), (49, 54977), (50, 54995), (51, 55013), (52, 55022),

Gene: Karhdo_89 Start: 50178, Stop: 50780, Start Num: 11
Candidate Starts for Karhdo_89:
(Start: 11 @50178 has 31 MA's), (Start: 12 @50196 has 1 MA's), (Start: 14 @50277 has 1 MA's), (15, 50283), (18, 50301), (21, 50328), (22, 50349), (30, 50454), (34, 50493), (35, 50496), (37, 50526), (39, 50556), (41, 50565), (44, 50625), (47, 50646), (49, 50712), (50, 50730), (51, 50748), (52, 50757),

Gene: Krakatau_87 Start: 48136, Stop: 48738, Start Num: 11
Candidate Starts for Krakatau_87:
(Start: 11 @48136 has 31 MA's), (Start: 12 @48154 has 1 MA's), (Start: 14 @48235 has 1 MA's), (15, 48241), (18, 48259), (21, 48286), (22, 48307), (30, 48412), (34, 48451), (35, 48454), (37, 48484), (39, 48514), (41, 48523), (44, 48583), (47, 48604), (49, 48670), (50, 48688), (51, 48706), (52, 48715),

Gene: Leozinho_91 Start: 49823, Stop: 50425, Start Num: 11
Candidate Starts for Leozinho_91:
(Start: 11 @49823 has 31 MA's), (Start: 12 @49841 has 1 MA's), (Start: 14 @49922 has 1 MA's), (15, 49928), (18, 49946), (21, 49973), (22, 49994), (30, 50099), (34, 50138), (35, 50141), (37, 50171), (39, 50201), (41, 50210), (44, 50270), (47, 50291), (49, 50357), (50, 50375), (51, 50393), (52, 50402),

Gene: Llij_90 Start: 51368, Stop: 51970, Start Num: 11
Candidate Starts for Llij_90:
(Start: 11 @51368 has 31 MA's), (Start: 12 @51386 has 1 MA's), (Start: 14 @51467 has 1 MA's), (15, 51473), (18, 51491), (21, 51518), (22, 51539), (30, 51644), (34, 51683), (35, 51686), (37, 51716), (39, 51746), (41, 51755), (44, 51815), (47, 51836), (49, 51902), (50, 51920), (51, 51938), (52, 51947),

Gene: MUWow_94 Start: 52065, Stop: 52622, Start Num: 13
Candidate Starts for MUWow_94:

(2, 51630), (3, 51639), (4, 51729), (5, 51894), (7, 51975), (Start: 9 @52017 has 1 MA's), (Start: 13 @52065 has 6 MA's), (19, 52146), (27, 52236), (28, 52242), (31, 52275), (45, 52446), (48, 52497), (53, 52581),

Gene: Marker_99 Start: 53540, Stop: 54142, Start Num: 11
Candidate Starts for Marker_99:
(Start: 11 @53540 has 31 MA's), (Start: 12 @53558 has 1 MA's), (Start: 14 @53639 has 1 MA's), (15, 53645), (18, 53663), (21, 53690), (22, 53711), (30, 53816), (34, 53855), (35, 53858), (37, 53888), (39, 53918), (41, 53927), (44, 53987), (47, 54008), (49, 54074), (50, 54092), (51, 54110), (52, 54119),

Gene: MisterCuddles_93 Start: 52791, Stop: 53393, Start Num: 11
Candidate Starts for MisterCuddles_93:
(Start: 11 @52791 has 31 MA's), (Start: 12 @52809 has 1 MA's), (Start: 14 @52890 has 1 MA's), (15, 52896), (18, 52914), (21, 52941), (22, 52962), (30, 53067), (34, 53106), (35, 53109), (37, 53139), (39, 53169), (41, 53178), (44, 53238), (47, 53259), (49, 53325), (50, 53343), (51, 53361), (52, 53370),

Gene: Oksu_99 Start: 54545, Stop: 55147, Start Num: 11
Candidate Starts for Oksu_99:
(Start: 11 @54545 has 31 MA's), (Start: 12 @54563 has 1 MA's), (Start: 14 @54644 has 1 MA's), (15, 54650), (18, 54668), (21, 54695), (22, 54716), (30, 54821), (34, 54860), (35, 54863), (37, 54893), (39, 54923), (41, 54932), (44, 54992), (47, 55013), (49, 55079), (50, 55097), (51, 55115), (52, 55124),

Gene: Phasih_91 Start: 51164, Stop: 51748, Start Num: 12
Candidate Starts for Phasih_91:
(Start: 11 @51146 has 31 MA's), (Start: 12 @51164 has 1 MA's), (Start: 14 @51245 has 1 MA's), (15, 51251), (18, 51269), (21, 51296), (22, 51317), (30, 51422), (34, 51461), (35, 51464), (37, 51494), (39, 51524), (41, 51533), (44, 51593), (47, 51614), (49, 51680), (50, 51698), (51, 51716), (52, 51725),

Gene: Plumbus_94 Start: 50132, Stop: 50734, Start Num: 11
Candidate Starts for Plumbus_94:
(Start: 11 @50132 has 31 MA's), (Start: 12 @50150 has 1 MA's), (Start: 14 @50231 has 1 MA's), (15, 50237), (18, 50255), (21, 50282), (22, 50303), (30, 50408), (34, 50447), (35, 50450), (37, 50480), (39, 50510), (41, 50519), (44, 50579), (47, 50600), (49, 50666), (50, 50684), (51, 50702), (52, 50711),

Gene: Renaud18_103 Start: 53095, Stop: 53697, Start Num: 11
Candidate Starts for Renaud18_103:
(Start: 11 @53095 has 31 MA's), (Start: 12 @53113 has 1 MA's), (Start: 14 @53194 has 1 MA's), (15, 53200), (18, 53218), (21, 53245), (22, 53266), (30, 53371), (34, 53410), (35, 53413), (37, 53443), (39, 53473), (41, 53482), (44, 53542), (47, 53563), (49, 53629), (50, 53647), (51, 53665), (52, 53674),

Gene: Rialto_99 Start: 53385, Stop: 53987, Start Num: 11
Candidate Starts for Rialto_99:
(Start: 11 @53385 has 31 MA's), (Start: 12 @53403 has 1 MA's), (Start: 14 @53484 has 1 MA's), (15, 53490), (18, 53508), (21, 53535), (22, 53556), (30, 53661), (34, 53700), (35, 53703), (37, 53733), (39, 53763), (41, 53772), (44, 53832), (47, 53853), (49, 53919), (50, 53937), (51, 53955), (52, 53964),

Gene: Ruby_90 Start: 52792, Stop: 53394, Start Num: 11
Candidate Starts for Ruby_90:
(Start: 11 @52792 has 31 MA's), (Start: 12 @52810 has 1 MA's), (Start: 14 @52891 has 1 MA's), (15, 52897), (18, 52915), (21, 52942), (22, 52963), (30, 53068), (34, 53107), (35, 53110), (37, 53140), (39, 53170), (41, 53179), (44, 53239), (47, 53260), (49, 53326), (50, 53344), (51, 53362), (52, 53371),

Gene: SG4_95 Start: 53628, Stop: 54230, Start Num: 11

Candidate Starts for SG4_95:
(Start: 11 @53628 has 31 MA's), (Start: 12 @53646 has 1 MA's), (Start: 14 @53727 has 1 MA's), (15, 53733), (18, 53751), (21, 53778), (22, 53799), (30, 53904), (34, 53943), (35, 53946), (37, 53976), (39, 54006), (41, 54015), (44, 54075), (47, 54096), (49, 54162), (50, 54180), (51, 54198), (52, 54207),

Gene: Sarge_64 Start: 35084, Stop: 35632, Start Num: 13
Candidate Starts for Sarge_64:
(Start: 13 @35084 has 6 MA's), (45, 35456),

Gene: ShawBrad_102 Start: 51959, Stop: 52549, Start Num: 16
Candidate Starts for ShawBrad_102:
(6, 51758), (8, 51800), (Start: 16 @51959 has 3 MA's), (20, 51989), (32, 52139), (33, 52142), (42, 52283),

Gene: ShroomBoi_92 Start: 52179, Stop: 52781, Start Num: 11
Candidate Starts for ShroomBoi_92:
(Start: 11 @52179 has 31 MA's), (Start: 12 @52197 has 1 MA's), (Start: 14 @52278 has 1 MA's), (15, 52284), (18, 52302), (21, 52329), (22, 52350), (30, 52455), (34, 52494), (35, 52497), (37, 52527), (39, 52557), (41, 52566), (44, 52626), (47, 52647), (49, 52713), (50, 52731), (51, 52749), (52, 52758),

Gene: Shukran_89 Start: 49141, Stop: 49698, Start Num: 13
Candidate Starts for Shukran_89:
(Start: 13 @49141 has 6 MA's), (27, 49312), (29, 49342), (33, 49378), (36, 49393), (45, 49522), (48, 49573),

Gene: SilverChicken_102 Start: 52982, Stop: 53584, Start Num: 11
Candidate Starts for SilverChicken_102:
(Start: 11 @52982 has 31 MA's), (Start: 12 @53000 has 1 MA's), (Start: 14 @53081 has 1 MA's), (15, 53087), (18, 53105), (21, 53132), (22, 53153), (30, 53258), (34, 53297), (35, 53300), (37, 53330), (39, 53360), (41, 53369), (44, 53429), (47, 53450), (49, 53516), (50, 53534), (51, 53552), (52, 53561),

Gene: Spartacus_101 Start: 55500, Stop: 56126, Start Num: 11
Candidate Starts for Spartacus_101:
(Start: 11 @55500 has 31 MA's), (Start: 12 @55518 has 1 MA's), (Start: 14 @55599 has 1 MA's), (15, 55605), (18, 55623), (21, 55650), (22, 55671), (30, 55776), (34, 55815), (35, 55818), (37, 55848), (39, 55878), (41, 55887), (44, 55947), (47, 55968), (49, 56034), (50, 56052), (51, 56070), (52, 56079),

Gene: SuperGrey_95 Start: 54630, Stop: 55232, Start Num: 11
Candidate Starts for SuperGrey_95:
(Start: 11 @54630 has 31 MA's), (Start: 12 @54648 has 1 MA's), (Start: 14 @54729 has 1 MA's), (15, 54735), (18, 54753), (21, 54780), (22, 54801), (30, 54906), (34, 54945), (35, 54948), (37, 54978), (39, 55008), (41, 55017), (44, 55077), (47, 55098), (49, 55164), (50, 55182), (51, 55200), (52, 55209),

Gene: Totinger_97 Start: 52898, Stop: 53500, Start Num: 11
Candidate Starts for Totinger_97:
(Start: 11 @52898 has 31 MA's), (Start: 12 @52916 has 1 MA's), (Start: 14 @52997 has 1 MA's), (15, 53003), (18, 53021), (21, 53048), (22, 53069), (30, 53174), (34, 53213), (35, 53216), (37, 53246), (39, 53276), (41, 53285), (44, 53345), (47, 53366), (49, 53432), (50, 53450), (51, 53468), (52, 53477),

Gene: Zapner_101 Start: 50844, Stop: 51446, Start Num: 11
Candidate Starts for Zapner_101:
(Start: 11 @50844 has 31 MA's), (Start: 12 @50862 has 1 MA's), (Start: 14 @50943 has 1 MA's), (15, 50949), (18, 50967), (21, 50994), (22, 51015), (30, 51120), (34, 51159), (35, 51162), (37, 51192), (39,

51222), (41, 51231), (44, 51291), (47, 51312), (49, 51378), (50, 51396), (51, 51414), (52, 51423),

Gene: Zucker_46 Start: 31050, Stop: 31652, Start Num: 10
Candidate Starts for Zucker_46:
(Start: 10 @31050 has 1 MA's), (17, 31176), (23, 31230), (25, 31254), (26, 31263), (38, 31407), (40, 31425), (43, 31488),