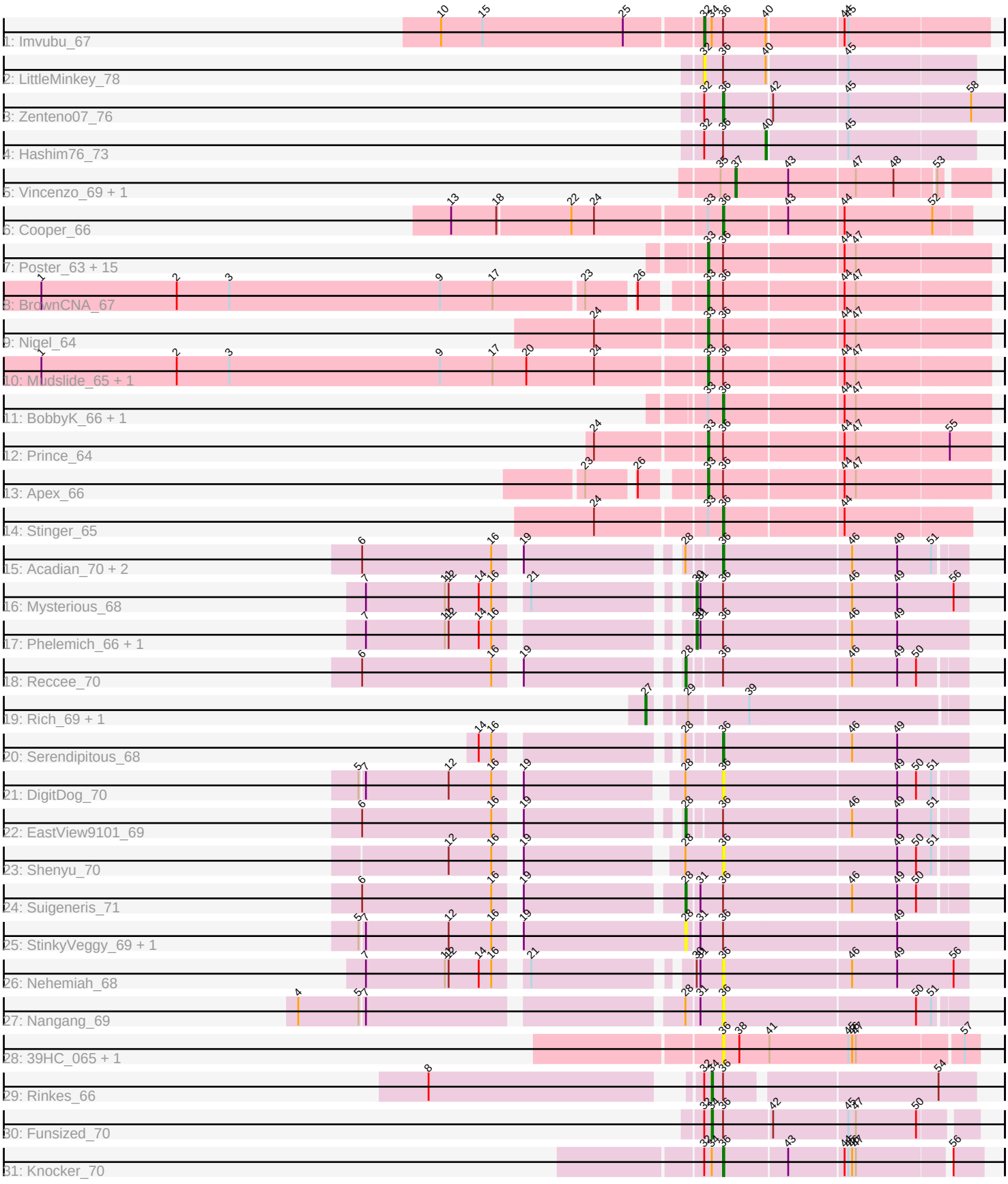
Pham 342216


1: Imvubu_67
2: LittleMinkey_78
3: Zenteno07_76
4: Hashim76_73
5: Vincenzo_69 + 1
6: Cooper_66
7: Poster_63 + 15
8: BrownCNA_67
9: Nigel_64
10: Mudslide_65 + 1
11: BobbyK_66 + 1
12: Prince_64
13: Apex_66
14: Stinger_65
15: Acadian_70 + 2
16: Mysterious_68
17: Phelemich_66 + 1
18: Reccee_70
19: Rich_69 + 1
20: Serendipitous_68
21: DigitDog_70
22: EastView9101_69
23: Shenyu_70
24: Suigeneris_71
25: StinkyVeggy_69 + 1
26: Nehemiah_68
27: Nangang_69
28: 39HC_065 + 1
29: Rinkes_66
30: Funsized_70
31: Knocker_70

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 342216 Report

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

Pham number 342216 has 55 members, 18 are drafts.

Phages represented in each track:
- Track 1 : Imvubu_67
- Track 2 : LittleMinkey_78
- Track 3 : Zenteno07_76
- Track 4 : Hashim76_73
- Track 5 : Vincenzo_69, AlanGrant_70
- Track 6 : Cooper_66
- Track 7 : Poster_63, Frederick_67, Nanao_64, Lambano_63, Renkei_64, Hangman_66, Epah_63, Hally898_63, GinPorsche_65, Hydro_66, JAMaL_65, Antihero_63, Heath_65, LittleDigger_64, Magpie_63, Ahwei_63
- Track 8 : BrownCNA_67
- Track 9 : Nigel_64
- Track 10 : Mudslide_65, Waleliano_65
- Track 11 : BobbyK_66, ChrisnMich_65
- Track 12 : Prince_64
- Track 13 : Apex_66
- Track 14 : Stinger_65
- Track 15 : Acadian_70, Rita130_69, SirJeffery_69
- Track 16 : Mysterious_68
- Track 17 : Phelemich_66, Reprobate_68
- Track 18 : Reccee_70
- Track 19 : Rich_69, Baee_70
- Track 20 : Serendipitous_68
- Track 21 : DigitDog_70
- Track 22 : EastView9101_69
- Track 23 : Shenyu_70
- Track 24 : Suigeneris_71
- Track 25 : StinkyVeggy_69, KarasumaRum_69
- Track 26 : Nehemiah_68
- Track 27 : Nangang_69
- Track 28 : 39HC_065, 40BC_065
- Track 29 : Rinkes_66
- Track 30 : Funsized_70
- Track 31 : Knocker_70

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

The start number called the most often in the published annotations is 33, it was called in 15 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Ahwei_63, Antihero_63, Apex_66, BrownCNA_67, Epah_63, Frederick_67, GinPorsche_65, Hally898_63, Hangman_66, Heath_65, Hydro_66, JAMaL_65, Lambano_63, LittleDigger_64, Magpie_63, Mudslide_65, Nanao_64, Nigel_64, Poster_63, Prince_64, Renkei_64, Waleliano_65,

Genes that have the "Most Annotated" start but do not call it:
• BobbyK_66, ChrisnMich_65, Cooper_66, Stinger_65,

Genes that do not have the "Most Annotated" start:
• 39HC_065, 40BC_065, Acadian_70, AlanGrant_70, Baee_70, DigitDog_70, EastView9101_69, Funsized_70, Hashim76_73, Imvubu_67, KarasumaRum_69, Knocker_70, LittleMinkey_78, Mysterious_68, Nangang_69, Nehemiah_68, Phelemich_66, Reccee_70, Reprobate_68, Rich_69, Rinkes_66, Rita130_69, Serendipitous_68, Shenyu_70, SirJeffery_69, StinkyVeggy_69, Suigeneris_71, Vincenzo_69, Zenteno07_76,

Summary by start number:

Start 27:
• Found in 2 of 55 (3.6%) of genes in pham
• Manual Annotations of this start: 2 of 37
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Baee_70 (B5), Rich_69 (B5),

Start 28:
• Found in 12 of 55 (21.8%) of genes in pham
• Manual Annotations of this start: 3 of 37
• Called 41.7% of time when present
• Phage (with cluster) where this start called: EastView9101_69 (B5), KarasumaRum_69 (B5), Reccee_70 (B5), StinkyVeggy_69 (B5), Suigeneris_71 (B5),

Start 30:
• Found in 4 of 55 (7.3%) of genes in pham
• Manual Annotations of this start: 3 of 37
• Called 75.0% of time when present
• Phage (with cluster) where this start called: Mysterious_68 (B5), Phelemich_66 (B5), Reprobate_68 (B5),

Start 32:
• Found in 7 of 55 (12.7%) of genes in pham
• Manual Annotations of this start: 1 of 37
• Called 28.6% of time when present
• Phage (with cluster) where this start called: Imvubu_67 (B10), LittleMinkey_78 (B13),

Start 33:
• Found in 26 of 55 (47.3%) of genes in pham
• Manual Annotations of this start: 15 of 37
• Called 84.6% of time when present

• Phage (with cluster) where this start called: Ahwei_63 (B4), Antihero_63 (B4), Apex_66 (B4), BrownCNA_67 (B4), Epah_63 (B4), Frederick_67 (B4), GinPorsche_65 (B4), Hally898_63 (B4), Hangman_66 (B4), Heath_65 (B4), Hydro_66 (B4), JAMaL_65 (B4), Lambano_63 (B4), LittleDigger_64 (B4), Magpie_63 (B4), Mudslide_65 (B4), Nanao_64 (B4), Nigel_64 (B4), Poster_63 (B4), Prince_64 (B4), Renkei_64 (B4), Waleliano_65 (B4),

Start 34:
• Found in 4 of 55 (7.3%) of genes in pham
• Manual Annotations of this start: 2 of 37
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Funsized_70 (B9), Rinkes_66 (B9),

Start 36:
• Found in 51 of 55 (92.7%) of genes in pham
• Manual Annotations of this start: 8 of 37
• Called 31.4% of time when present
• Phage (with cluster) where this start called: 39HC_065 (B6), 40BC_065 (B6), Acadian_70 (B5), BobbyK_66 (B4), ChrisnMich_65 (B4), Cooper_66 (B4), DigitDog_70 (B5), Knocker_70 (B9), Nangang_69 (B5), Nehemiah_68 (B5), Rita130_69 (B5), Serendipitous_68 (B5), Shenyu_70 (B5), SirJeffery_69 (B5), Stinger_65 (B4), Zenteno07_76 (B13),

Start 37:
• Found in 2 of 55 (3.6%) of genes in pham
• Manual Annotations of this start: 2 of 37
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AlanGrant_70 (B4), Vincenzo_69 (B4),

Start 40:
• Found in 3 of 55 (5.5%) of genes in pham
• Manual Annotations of this start: 1 of 37
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Hashim76_73 (B13),

Summary by clusters:

There are 6 clusters represented in this pham: B4, B5, B6, B13, B10, B9,

Info for manual annotations of cluster B10:
•Start number 32 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B13:
•Start number 36 was manually annotated 1 time for cluster B13.
•Start number 40 was manually annotated 1 time for cluster B13.

Info for manual annotations of cluster B4:
•Start number 33 was manually annotated 15 times for cluster B4.
•Start number 36 was manually annotated 4 times for cluster B4.
•Start number 37 was manually annotated 2 times for cluster B4.

Info for manual annotations of cluster B5:
•Start number 27 was manually annotated 2 times for cluster B5.

•Start number 28 was manually annotated 3 times for cluster B5.
•Start number 30 was manually annotated 3 times for cluster B5.
•Start number 36 was manually annotated 2 times for cluster B5.

Info for manual annotations of cluster B9:
•Start number 34 was manually annotated 2 times for cluster B9.
•Start number 36 was manually annotated 1 time for cluster B9.

Gene Information:

Gene: 39HC_065 Start: 57490, Stop: 57687, Start Num: 36
Candidate Starts for 39HC_065:
(Start: 36 @57490 has 8 MA's), (38, 57502), (41, 57526), (45, 57589), (46, 57592), (47, 57595), (57, 57676),

Gene: 40BC_065 Start: 57490, Stop: 57687, Start Num: 36
Candidate Starts for 40BC_065:
(Start: 36 @57490 has 8 MA's), (38, 57502), (41, 57526), (45, 57589), (46, 57592), (47, 57595), (57, 57676),

Gene: Acadian_70 Start: 58936, Stop: 59121, Start Num: 36
Candidate Starts for Acadian_70:
(6, 58687), (16, 58789), (19, 58801), (Start: 28 @58912 has 3 MA's), (Start: 36 @58936 has 8 MA's), (46, 59035), (49, 59071), (51, 59098),

Gene: Ahwei_63 Start: 58052, Stop: 58267, Start Num: 33
Candidate Starts for Ahwei_63:
(Start: 33 @58052 has 15 MA's), (Start: 36 @58064 has 8 MA's), (44, 58154), (47, 58163),

Gene: AlanGrant_70 Start: 60610, Stop: 60798, Start Num: 37
Candidate Starts for AlanGrant_70:
(35, 60598), (Start: 37 @60610 has 2 MA's), (43, 60652), (47, 60703), (48, 60733), (53, 60763),

Gene: Antihero_63 Start: 58050, Stop: 58265, Start Num: 33
Candidate Starts for Antihero_63:
(Start: 33 @58050 has 15 MA's), (Start: 36 @58062 has 8 MA's), (44, 58152), (47, 58161),

Gene: Apex_66 Start: 59146, Stop: 59361, Start Num: 33
Candidate Starts for Apex_66:
(23, 59071), (26, 59104), (Start: 33 @59146 has 15 MA's), (Start: 36 @59158 has 8 MA's), (44, 59248), (47, 59257),

Gene: Baee_70 Start: 59961, Stop: 60203, Start Num: 27
Candidate Starts for Baee_70:
(Start: 27 @59961 has 2 MA's), (29, 59982), (39, 60027),

Gene: BobbyK_66 Start: 58944, Stop: 59147, Start Num: 36
Candidate Starts for BobbyK_66:
(Start: 33 @58932 has 15 MA's), (Start: 36 @58944 has 8 MA's), (44, 59034), (47, 59043),

Gene: BrownCNA_67 Start: 59309, Stop: 59524, Start Num: 33
Candidate Starts for BrownCNA_67:
(1, 58805), (2, 58913), (3, 58955), (9, 59123), (17, 59165), (23, 59234), (26, 59267), (Start: 33 @59309 has 15 MA's), (Start: 36 @59321 has 8 MA's), (44, 59411), (47, 59420),

Gene: ChrisnMich_65 Start: 58046, Stop: 58249, Start Num: 36
Candidate Starts for ChrisnMich_65:
(Start: 33 @58034 has 15 MA's), (Start: 36 @58046 has 8 MA's), (44, 58136), (47, 58145),

Gene: Cooper_66 Start: 58486, Stop: 58674, Start Num: 36
Candidate Starts for Cooper_66:
(13, 58279), (18, 58315), (22, 58372), (24, 58390), (Start: 33 @58474 has 15 MA's), (Start: 36 @58486 has 8 MA's), (43, 58534), (44, 58576), (52, 58645),

Gene: DigitDog_70 Start: 59079, Stop: 59264, Start Num: 36
Candidate Starts for DigitDog_70:
(5, 58821), (7, 58824), (12, 58890), (16, 58923), (19, 58935), (Start: 28 @59049 has 3 MA's), (Start: 36 @59079 has 8 MA's), (49, 59214), (50, 59229), (51, 59241),

Gene: EastView9101_69 Start: 58656, Stop: 58865, Start Num: 28
Candidate Starts for EastView9101_69:
(6, 58431), (16, 58533), (19, 58545), (Start: 28 @58656 has 3 MA's), (Start: 36 @58680 has 8 MA's), (46, 58779), (49, 58815), (51, 58842),

Gene: Epah_63 Start: 58050, Stop: 58265, Start Num: 33
Candidate Starts for Epah_63:
(Start: 33 @58050 has 15 MA's), (Start: 36 @58062 has 8 MA's), (44, 58152), (47, 58161),

Gene: Frederick_67 Start: 59032, Stop: 59247, Start Num: 33
Candidate Starts for Frederick_67:
(Start: 33 @59032 has 15 MA's), (Start: 36 @59044 has 8 MA's), (44, 59134), (47, 59143),

Gene: Funsized_70 Start: 61025, Stop: 61222, Start Num: 34
Candidate Starts for Funsized_70:
(Start: 32 @61019 has 1 MA's), (Start: 34 @61025 has 2 MA's), (Start: 36 @61034 has 8 MA's), (42, 61070), (45, 61127), (47, 61133), (50, 61181),

Gene: GinPorsche_65 Start: 58050, Stop: 58265, Start Num: 33
Candidate Starts for GinPorsche_65:
(Start: 33 @58050 has 15 MA's), (Start: 36 @58062 has 8 MA's), (44, 58152), (47, 58161),

Gene: Hally898_63 Start: 58065, Stop: 58280, Start Num: 33
Candidate Starts for Hally898_63:
(Start: 33 @58065 has 15 MA's), (Start: 36 @58077 has 8 MA's), (44, 58167), (47, 58176),

Gene: Hangman_66 Start: 59231, Stop: 59446, Start Num: 33
Candidate Starts for Hangman_66:
(Start: 33 @59231 has 15 MA's), (Start: 36 @59243 has 8 MA's), (44, 59333), (47, 59342),

Gene: Hashim76_73 Start: 59194, Stop: 59352, Start Num: 40
Candidate Starts for Hashim76_73:
(Start: 32 @59146 has 1 MA's), (Start: 36 @59161 has 8 MA's), (Start: 40 @59194 has 1 MA's), (45, 59254),

Gene: Heath_65 Start: 58858, Stop: 59073, Start Num: 33
Candidate Starts for Heath_65:
(Start: 33 @58858 has 15 MA's), (Start: 36 @58870 has 8 MA's), (44, 58960), (47, 58969),

Gene: Hydro_66 Start: 59169, Stop: 59384, Start Num: 33
Candidate Starts for Hydro_66:
(Start: 33 @59169 has 15 MA's), (Start: 36 @59181 has 8 MA's), (44, 59271), (47, 59280),

Gene: Imvubu_67 Start: 57772, Stop: 57990, Start Num: 32
Candidate Starts for Imvubu_67:
(10, 57571), (15, 57604), (25, 57715), (Start: 32 @57772 has 1 MA's), (Start: 34 @57778 has 2 MA's), (Start: 36 @57787 has 8 MA's), (Start: 40 @57820 has 1 MA's), (44, 57877), (45, 57880),

Gene: JAMaL_65 Start: 59059, Stop: 59274, Start Num: 33
Candidate Starts for JAMaL_65:
(Start: 33 @59059 has 15 MA's), (Start: 36 @59071 has 8 MA's), (44, 59161), (47, 59170),

Gene: KarasumaRum_69 Start: 58864, Stop: 59082, Start Num: 28
Candidate Starts for KarasumaRum_69:
(5, 58621), (7, 58624), (12, 58690), (16, 58723), (19, 58735), (Start: 28 @58864 has 3 MA's), (31, 58873), (Start: 36 @58891 has 8 MA's), (49, 59026),

Gene: Knocker_70 Start: 60207, Stop: 60398, Start Num: 36
Candidate Starts for Knocker_70:
(Start: 32 @60192 has 1 MA's), (Start: 34 @60198 has 2 MA's), (Start: 36 @60207 has 8 MA's), (43, 60255), (44, 60297), (45, 60300), (46, 60303), (47, 60306), (56, 60375),

Gene: Lambano_63 Start: 58065, Stop: 58280, Start Num: 33
Candidate Starts for Lambano_63:
(Start: 33 @58065 has 15 MA's), (Start: 36 @58077 has 8 MA's), (44, 58167), (47, 58176),

Gene: LittleDigger_64 Start: 57988, Stop: 58203, Start Num: 33
Candidate Starts for LittleDigger_64:
(Start: 33 @57988 has 15 MA's), (Start: 36 @58000 has 8 MA's), (44, 58090), (47, 58099),

Gene: LittleMinkey_78 Start: 59077, Stop: 59283, Start Num: 32
Candidate Starts for LittleMinkey_78:
(Start: 32 @59077 has 1 MA's), (Start: 36 @59092 has 8 MA's), (Start: 40 @59125 has 1 MA's), (45, 59185),

Gene: Magpie_63 Start: 58922, Stop: 59137, Start Num: 33
Candidate Starts for Magpie_63:
(Start: 33 @58922 has 15 MA's), (Start: 36 @58934 has 8 MA's), (44, 59024), (47, 59033),

Gene: Mudslide_65 Start: 59260, Stop: 59475, Start Num: 33
Candidate Starts for Mudslide_65:
(1, 58735), (2, 58843), (3, 58885), (9, 59053), (17, 59095), (20, 59122), (24, 59176), (Start: 33 @59260 has 15 MA's), (Start: 36 @59272 has 8 MA's), (44, 59362), (47, 59371),

Gene: Mysterious_68 Start: 58978, Stop: 59190, Start Num: 30
Candidate Starts for Mysterious_68:

(7, 58750), (11, 58813), (12, 58816), (14, 58840), (16, 58849), (21, 58867), (Start: 30 @58978 has 3 MA's), (31, 58981), (Start: 36 @58999 has 8 MA's), (46, 59098), (49, 59134), (56, 59179),

Gene: Nanao_64 Start: 58055, Stop: 58270, Start Num: 33
Candidate Starts for Nanao_64:
(Start: 33 @58055 has 15 MA's), (Start: 36 @58067 has 8 MA's), (44, 58157), (47, 58166),

Gene: Nangang_69 Start: 59078, Stop: 59263, Start Num: 36
Candidate Starts for Nangang_69:
(4, 58769), (5, 58817), (7, 58820), (Start: 28 @59051 has 3 MA's), (31, 59060), (Start: 36 @59078 has 8 MA's), (50, 59228), (51, 59240),

Gene: Nehemiah_68 Start: 58837, Stop: 59028, Start Num: 36
Candidate Starts for Nehemiah_68:
(7, 58588), (11, 58651), (12, 58654), (14, 58678), (16, 58687), (21, 58705), (Start: 30 @58816 has 3 MA's), (31, 58819), (Start: 36 @58837 has 8 MA's), (46, 58936), (49, 58972), (56, 59017),

Gene: Nigel_64 Start: 58087, Stop: 58302, Start Num: 33
Candidate Starts for Nigel_64:
(24, 58003), (Start: 33 @58087 has 15 MA's), (Start: 36 @58099 has 8 MA's), (44, 58189), (47, 58198),

Gene: Phelemich_66 Start: 58810, Stop: 59022, Start Num: 30
Candidate Starts for Phelemich_66:
(7, 58582), (11, 58645), (12, 58648), (14, 58672), (16, 58681), (Start: 30 @58810 has 3 MA's), (31, 58813), (Start: 36 @58831 has 8 MA's), (46, 58930), (49, 58966),

Gene: Poster_63 Start: 58056, Stop: 58271, Start Num: 33
Candidate Starts for Poster_63:
(Start: 33 @58056 has 15 MA's), (Start: 36 @58068 has 8 MA's), (44, 58158), (47, 58167),

Gene: Prince_64 Start: 59161, Stop: 59376, Start Num: 33
Candidate Starts for Prince_64:
(24, 59077), (Start: 33 @59161 has 15 MA's), (Start: 36 @59173 has 8 MA's), (44, 59263), (47, 59272), (55, 59344),

Gene: Reccee_70 Start: 59037, Stop: 59246, Start Num: 28
Candidate Starts for Reccee_70:
(6, 58812), (16, 58914), (19, 58926), (Start: 28 @59037 has 3 MA's), (Start: 36 @59061 has 8 MA's), (46, 59160), (49, 59196), (50, 59211),

Gene: Renkei_64 Start: 57982, Stop: 58197, Start Num: 33
Candidate Starts for Renkei_64:
(Start: 33 @57982 has 15 MA's), (Start: 36 @57994 has 8 MA's), (44, 58084), (47, 58093),

Gene: Reprobate_68 Start: 58815, Stop: 59027, Start Num: 30
Candidate Starts for Reprobate_68:
(7, 58587), (11, 58650), (12, 58653), (14, 58677), (16, 58686), (Start: 30 @58815 has 3 MA's), (31, 58818), (Start: 36 @58836 has 8 MA's), (46, 58935), (49, 58971),

Gene: Rich_69 Start: 60021, Stop: 60251, Start Num: 27
Candidate Starts for Rich_69:
(Start: 27 @60021 has 2 MA's), (29, 60042), (39, 60087),

Gene: Rinkes_66 Start: 58602, Stop: 58799, Start Num: 34
Candidate Starts for Rinkes_66:
(8, 58407), (Start: 32 @58596 has 1 MA's), (Start: 34 @58602 has 2 MA's), (Start: 36 @58611 has 8 MA's), (54, 58770),

Gene: Rita130_69 Start: 58874, Stop: 59059, Start Num: 36
Candidate Starts for Rita130_69:
(6, 58625), (16, 58727), (19, 58739), (Start: 28 @58850 has 3 MA's), (Start: 36 @58874 has 8 MA's), (46, 58973), (49, 59009), (51, 59036),

Gene: Serendipitous_68 Start: 58411, Stop: 58602, Start Num: 36
Candidate Starts for Serendipitous_68:
(14, 58255), (16, 58264), (Start: 28 @58387 has 3 MA's), (Start: 36 @58411 has 8 MA's), (46, 58510), (49, 58546),

Gene: Shenyu_70 Start: 59444, Stop: 59629, Start Num: 36
Candidate Starts for Shenyu_70:
(12, 59255), (16, 59288), (19, 59300), (Start: 28 @59414 has 3 MA's), (Start: 36 @59444 has 8 MA's), (49, 59579), (50, 59594), (51, 59606),

Gene: SirJeffery_69 Start: 59013, Stop: 59198, Start Num: 36
Candidate Starts for SirJeffery_69:
(6, 58764), (16, 58866), (19, 58878), (Start: 28 @58989 has 3 MA's), (Start: 36 @59013 has 8 MA's), (46, 59112), (49, 59148), (51, 59175),

Gene: Stinger_65 Start: 58022, Stop: 58210, Start Num: 36
Candidate Starts for Stinger_65:
(24, 57926), (Start: 33 @58010 has 15 MA's), (Start: 36 @58022 has 8 MA's), (44, 58112),

Gene: StinkyVeggy_69 Start: 58864, Stop: 59082, Start Num: 28
Candidate Starts for StinkyVeggy_69:
(5, 58621), (7, 58624), (12, 58690), (16, 58723), (19, 58735), (Start: 28 @58864 has 3 MA's), (31, 58873), (Start: 36 @58891 has 8 MA's), (49, 59026),

Gene: Suigeneris_71 Start: 59137, Stop: 59349, Start Num: 28
Candidate Starts for Suigeneris_71:
(6, 58903), (16, 59005), (19, 59017), (Start: 28 @59137 has 3 MA's), (31, 59146), (Start: 36 @59164 has 8 MA's), (46, 59263), (49, 59299), (50, 59314),

Gene: Vincenzo_69 Start: 60640, Stop: 60828, Start Num: 37
Candidate Starts for Vincenzo_69:
(35, 60628), (Start: 37 @60640 has 2 MA's), (43, 60682), (47, 60733), (48, 60763), (53, 60793),

Gene: Waleliano_65 Start: 59062, Stop: 59277, Start Num: 33
Candidate Starts for Waleliano_65:
(1, 58537), (2, 58645), (3, 58687), (9, 58855), (17, 58897), (20, 58924), (24, 58978), (Start: 33 @59062 has 15 MA's), (Start: 36 @59074 has 8 MA's), (44, 59164), (47, 59173),

Gene: Zenteno07_76 Start: 59367, Stop: 59582, Start Num: 36
Candidate Starts for Zenteno07_76:
(Start: 32 @59352 has 1 MA's), (Start: 36 @59367 has 8 MA's), (42, 59403), (45, 59460), (58, 59556),