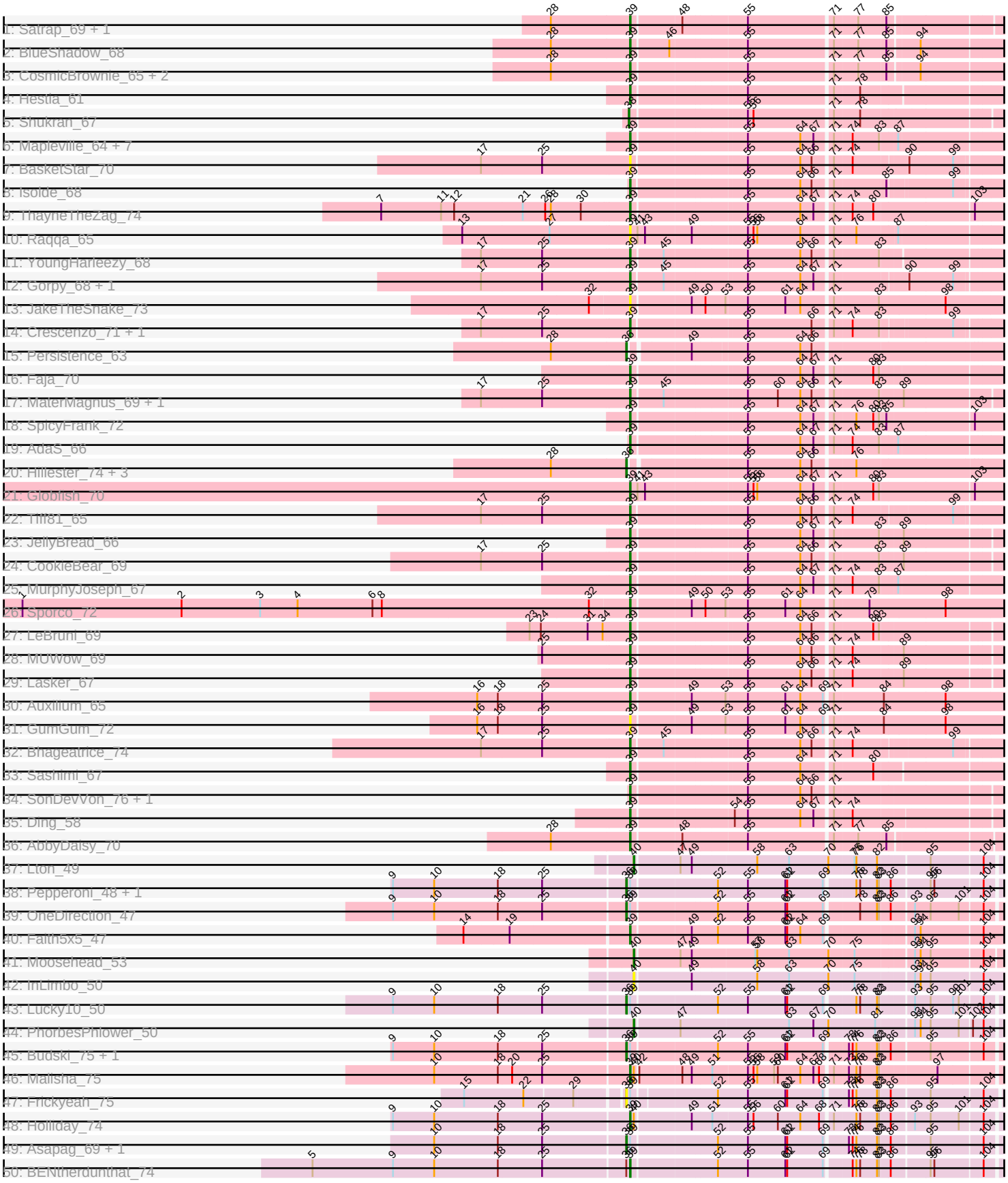
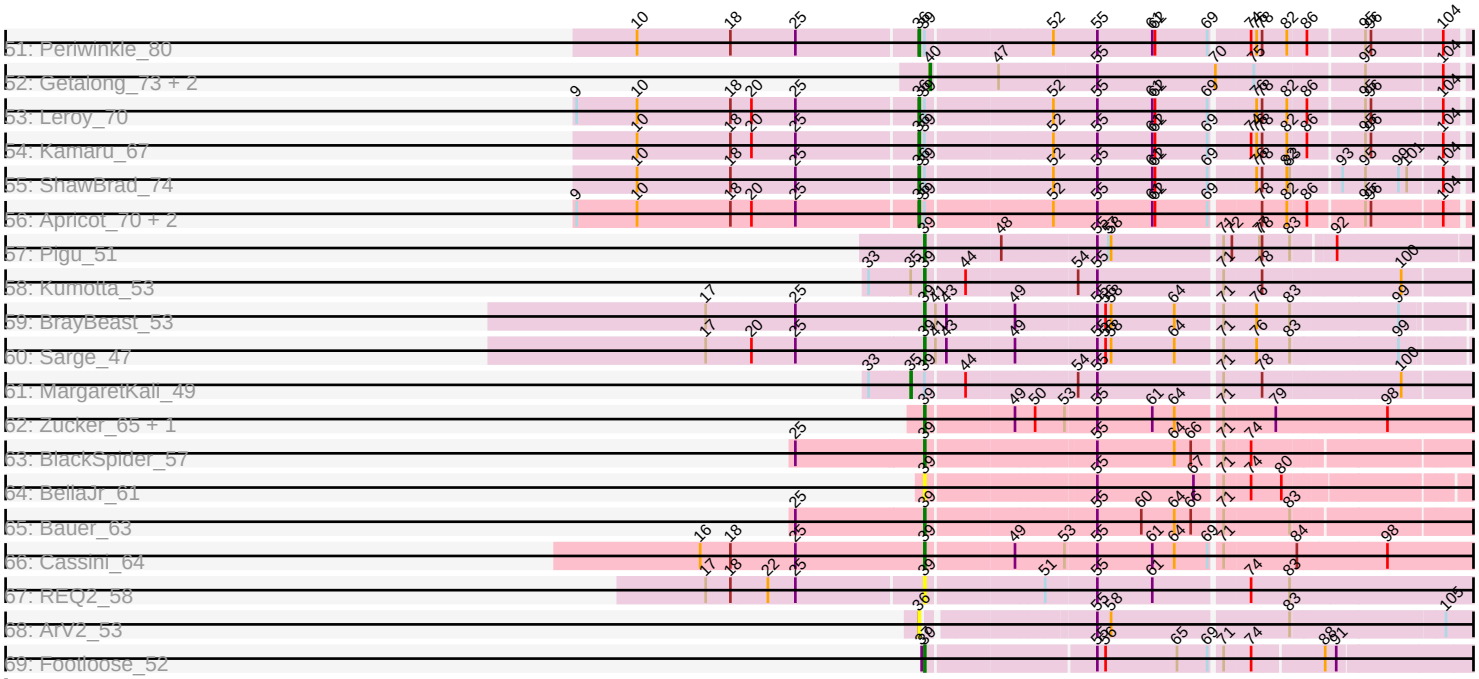
Pham 345597


1: Satrap_69 + 1
2: BlueShadow_68
3: CosmicBrownie_65 + 2
4: Hestia_61
5: Shukran_67
6: Mapleville_64 + 7
7: BasketStar_70
8: Isolde_68
9: ThayneTheZag_74
10: Raqqa_65
11: YoungHarleezy_68
12: Gorpy_68 + 1
13: JakeTheSnake_73
14: Crescenzo_71 + 1
15: Persistence_63
16: Faja_70
17: MaterMagnus_69 + 1
18: SpicyFrank_72
19: AdaS_66
20: Hillester_74 + 3
21: Globfish_70
22: Tiff81_65
23: JellyBread_66
24: CookieBear_69
25: MurphyJoseph_67
26: Sporco_72
27: LeBruni_69
28: MOWow_69
29: Lasker_67
30: Auxilium_65
31: GumGum_72
32: Bhageatrice_74
33: Sashimi_67
34: SonDeVVon_76 + 1
35: Ding_58
36: AbbyDaisy_70
37: Lion_49
38: Pepperoni_48 + 1
39: OneDirection_47
40: Faith5x5_47
41: Moosehead_53
42: InLimbo_50
43: Lucky10_50
44: PhorbesPhlower_50
45: Budski_75 + 1
46: Malisha_75
47: Frickyeah_75
48: Holliday_74
49: Asapag_69 + 1
50: BENtherdunthat_74

Pham 345597


51: Periwinkle_80
52: Getalong_73 + 2
53: Leroy_70
54: Kamaru_67
55: ShawBrad_74
56: Apricot_70 + 2
57: Pigu_51
58: Kumotta_53
59: BrayBeast_53
60: Sarge_47
61: MargaretKall_49
62: Zucker_65 + 1
63: BlackSpider_57
64: BellaJr_61
65: Bauer_63
66: Cassini_64
67: REQ2_58
68: Arv2_53
69: Footloose_52

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 345597 Report

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

Pham number 345597 has 94 members, 15 are drafts.

Phages represented in each track:
- Track 1 : Satrap_69, Seahorse_73
- Track 2 : BlueShadow_68
- Track 3 : CosmicBrownie_65, Anekin_72, Nyilah_71
- Track 4 : Hestia_61
- Track 5 : Shukran_67
- Track 6 : Mapleville_64, Windest_72, BillyTP_70, Lawnathon_71, BenchScraper_69, Richie_72, Kabloowy_68, Raphaella_69
- Track 7 : BasketStar_70
- Track 8 : Isolde_68
- Track 9 : ThayneTheZag_74
- Track 10 : Raqqa_65
- Track 11 : YoungHarleezy_68
- Track 12 : Gorpy_68, Sakai_67
- Track 13 : JakeTheSnake_73
- Track 14 : Crescenzo_71, DarwinJr_73
- Track 15 : Persistence_63
- Track 16 : Faja_70
- Track 17 : MaterMagnus_69, Aikyam_68
- Track 18 : SpicyFrank_72
- Track 19 : AdaS_66
- Track 20 : Hillester_74, MidnightRain_72, RadFad_74, Vopal_71
- Track 21 : Globfish_70
- Track 22 : Tiff81_65
- Track 23 : JellyBread_66
- Track 24 : CookieBear_69
- Track 25 : MurphyJoseph_67
- Track 26 : Sporco_72
- Track 27 : LeBruni_69
- Track 28 : MUWow_69
- Track 29 : Lasker_67
- Track 30 : Auxilium_65
- Track 31 : GumGum_72
- Track 32 : Bhageatrice_74
- Track 33 : Sashimi_67
- Track 34 : SonDevVon_76, Phrank15_72
- Track 35 : Ding_58
- Track 36 : AbbyDaisy_70

• Track 37 : Lton_49
• Track 38 : Pepperoni_48, Morkie_53
• Track 39 : OneDirection_47
• Track 40 : Faith5x5_47
• Track 41 : Moosehead_53
• Track 42 : InLimbo_50
• Track 43 : Lucky10_50
• Track 44 : PhorbesPhlower_50
• Track 45 : Budski_75, Whitney_70
• Track 46 : Malisha_75
• Track 47 : Frickyeah_75
• Track 48 : Holliday_74
• Track 49 : Asapag_69, Birdsong_68
• Track 50 : BENtherdunthat_74
• Track 51 : Periwinkle_80
• Track 52 : Getalong_73, Kenna_67, Lutum_73
• Track 53 : Leroy_70
• Track 54 : Kamaru_67
• Track 55 : ShawBrad_74
• Track 56 : Apricot_70, Phistory_69, Crater_70
• Track 57 : Pigu_51
• Track 58 : Kumotta_53
• Track 59 : BrayBeast_53
• Track 60 : Sarge_47
• Track 61 : MargaretKali_49
• Track 62 : Zucker_65, NewKitty_72
• Track 63 : BlackSpider_57
• Track 64 : BellaJr_61
• Track 65 : Bauer_63
• Track 66 : Cassini_64
• Track 67 : REQ2_58
• Track 68 : ArV2_53
• Track 69 : Footloose_52

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

The start number called the most often in the published annotations is 39, it was called in 52 of the 79 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AbbyDaisy_70, AdaS_66, Aikyam_68, Anekin_72, Auxilium_65, BENtherdunthat_74, BasketStar_70, Bauer_63, BellaJr_61, BenchScraper_69, Bhageatrice_74, BillyTP_70, BlackSpider_57, BlueShadow_68, BrayBeast_53, Cassini_64, CookieBear_69, CosmicBrownie_65, Crescenzo_71, DarwinJr_73, Ding_58, Faith5x5_47, Faja_70, Footloose_52, Globfish_70, Gorpy_68, GumGum_72, Hestia_61, Holliday_74, Isolde_68, JakeTheSnake_73, JellyBread_66, Kabloowy_68, Kumotta_53, Lasker_67, Lawnathon_71, LeBruni_69, MUWow_69, Malisha_75, Mapleville_64, MaterMagnus_69, MurphyJoseph_67, NewKitty_72, Nyilah_71, Phrank15_72, Pigu_51, REQ2_58, Raphaella_69, Raqqa_65, Richie_72, Sakai_67, Sarge_47, Sashimi_67, Satrap_69, Seahorse_73, SonDevVon_76,

SpicyFrank_72, Sporco_72, ThayneTheZag_74, Tiff81_65, Windest_72, YoungHarleezy_68, Zucker_65,

Genes that have the "Most Annotated" start but do not call it:
• Apricot_70, Asapag_69, Birdsong_68, Budski_75, Crater_70, Frickyeah_75, Kamaru_67, Leroy_70, Lucky10_50, MargaretKali_49, Morkie_53, OneDirection_47, Pepperoni_48, Periwinkle_80, Phistory_69, ShawBrad_74, Whitney_70,

Genes that do not have the "Most Annotated" start:
• ArV2_53, Getalong_73, Hillester_74, InLimbo_50, Kenna_67, Lton_49, Lutum_73, MidnightRain_72, Moosehead_53, Persistence_63, PhorbesPhlower_50, RadFad_74, Shukran_67, Vopal_71,

Summary by start number:

Start 35:
• Found in 2 of 94 (2.1%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 50.0% of time when present
• Phage (with cluster) where this start called: MargaretKali_49 (FB),

Start 36:
• Found in 23 of 94 (24.5%) of genes in pham
• Manual Annotations of this start: 19 of 79
• Called 95.7% of time when present
• Phage (with cluster) where this start called: Apricot_70 (DN3), ArV2_53 (singleton), Asapag_69 (DN1), Birdsong_68 (DN), Budski_75 (DN), Crater_70 (DN3), Frickyeah_75 (DN1), Hillester_74 (AY), Kamaru_67 (DN1), Leroy_70 (DN1), Lucky10_50 (DH), MidnightRain_72 (AY), Morkie_53 (DH), OneDirection_47 (CZ6), Pepperoni_48 (CZ), Periwinkle_80 (DN1), Persistence_63 (AY), Phistory_69 (DN1), RadFad_74 (AY), ShawBrad_74 (DN1), Vopal_71 (AY), Whitney_70 (DN1),

Start 38:
• Found in 1 of 94 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Shukran_67 (AY),

Start 39:
• Found in 80 of 94 (85.1%) of genes in pham
• Manual Annotations of this start: 52 of 79
• Called 78.8% of time when present
• Phage (with cluster) where this start called: AbbyDaisy_70 (AY), AdaS_66 (AY), Aikyam_68 (AY), Anekin_72 (AY), Auxilium_65 (AY), BENtherdunthat_74 (DN1), BasketStar_70 (AY), Bauer_63 (FN), BellaJr_61 (FN), BenchScraper_69 (AY), Bhageatrice_74 (AY), BillyTP_70 (AY), BlackSpider_57 (FN), BlueShadow_68 (AY), BrayBeast_53 (FB), Cassini_64 (FN), CookieBear_69 (AY), CosmicBrownie_65 (AY), Crescenzo_71 (AY), DarwinJr_73 (AY), Ding_58 (AY), Faith5x5_47 (CZ6), Faja_70 (AY), Footloose_52 (singleton), Globfish_70 (AY), Gorpy_68 (AY), GumGum_72 (AY), Hestia_61 (AY), Holliday_74 (DN1), Isolde_68 (AY), JakeTheSnake_73 (AY), JellyBread_66 (AY), Kabloowy_68 (AY), Kumotta_53 (FB), Lasker_67 (AY), Lawnathon_71 (AY), LeBruni_69 (AY), MUWow_69 (AY), Malisha_75 (DN), Mapleville_64 (AY), MaterMagnus_69 (AY), MurphyJoseph_67 (AY), NewKitty_72

(AY), Nyilah_71 (AY), Phrank15_72 (AY), Pigu_51 (FB), REQ2_58 (singleton), Raphaella_69 (AY), Raqqa_65 (AY), Richie_72 (AY), Sakai_67 (AY), Sarge_47 (FB), Sashimi_67 (AY), Satrap_69 (AY), Seahorse_73 (AY), SonDevVon_76 (AY), SpicyFrank_72 (AY), Sporco_72 (AY), ThayneTheZag_74 (AY), Tiff81_65 (AY), Windest_72 (AY), YoungHarleezy_68 (AY), Zucker_65 (FN),

Start 40:
• Found in 9 of 94 (9.6%) of genes in pham
• Manual Annotations of this start: 6 of 79
• Called 77.8% of time when present
• Phage (with cluster) where this start called: Getalong_73 (DN1), InLimbo_50 (DH), Kenna_67 (DN1), Lton_49 (CZ), Lutum_73 (DN1), Moosehead_53 (CZ6), PhorbesPhlower_50 (DH),

Summary by clusters:

There are 10 clusters represented in this pham: DN, singleton, DH, CZ6, CZ, FB, DN1, DN3, AY, FN,

Info for manual annotations of cluster AY:
•Start number 36 was manually annotated 4 times for cluster AY.
•Start number 38 was manually annotated 1 time for cluster AY.
•Start number 39 was manually annotated 39 times for cluster AY.

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

Info for manual annotations of cluster CZ6:
•Start number 36 was manually annotated 1 time for cluster CZ6.
•Start number 39 was manually annotated 1 time for cluster CZ6.
•Start number 40 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DH:
•Start number 36 was manually annotated 2 times for cluster DH.
•Start number 40 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN:
•Start number 36 was manually annotated 2 times for cluster DN.
•Start number 39 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:
•Start number 36 was manually annotated 7 times for cluster DN1.
•Start number 39 was manually annotated 2 times for cluster DN1.
•Start number 40 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster DN3:
•Start number 36 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster FB:
•Start number 35 was manually annotated 1 time for cluster FB.
•Start number 39 was manually annotated 4 times for cluster FB.

Info for manual annotations of cluster FN:
•Start number 39 was manually annotated 4 times for cluster FN.

Gene Information:

Gene: AbbyDaisy_70 Start: 37654, Stop: 38199, Start Num: 39
Candidate Starts for AbbyDaisy_70:
(28, 37528), (Start: 39 @37654 has 52 MA's), (48, 37729), (55, 37825), (71, 37954), (77, 37990), (85, 38032),

Gene: AdaS_66 Start: 34944, Stop: 35498, Start Num: 39
Candidate Starts for AdaS_66:
(Start: 39 @34944 has 52 MA's), (55, 35112), (64, 35196), (67, 35217), (71, 35241), (74, 35268), (83, 35310), (87, 35334),

Gene: Aikyam_68 Start: 34815, Stop: 35363, Start Num: 39
Candidate Starts for Aikyam_68:
(17, 34581), (25, 34677), (Start: 39 @34815 has 52 MA's), (45, 34863), (55, 34983), (60, 35031), (64, 35067), (66, 35085), (71, 35112), (83, 35181), (89, 35214),

Gene: Anekin_72 Start: 37646, Stop: 38200, Start Num: 39
Candidate Starts for Anekin_72:
(28, 37520), (Start: 39 @37646 has 52 MA's), (55, 37817), (71, 37946), (77, 37982), (85, 38024), (94, 38069),

Gene: Apricot_70 Start: 41809, Stop: 42369, Start Num: 36
Candidate Starts for Apricot_70:
(9, 41443), (10, 41509), (18, 41611), (20, 41632), (25, 41680), (Start: 36 @41809 has 19 MA's), (Start: 39 @41815 has 52 MA's), (52, 41941), (55, 41989), (61, 42049), (62, 42052), (69, 42109), (78, 42157), (82, 42184), (86, 42202), (95, 42256), (96, 42262), (104, 42334),

Gene: ArV2_53 Start: 29854, Stop: 30420, Start Num: 36
Candidate Starts for ArV2_53:
(Start: 36 @29854 has 19 MA's), (55, 30016), (58, 30031), (83, 30217), (105, 30379),

Gene: Asapag_69 Start: 41803, Stop: 42363, Start Num: 36
Candidate Starts for Asapag_69:
(10, 41503), (18, 41605), (25, 41674), (Start: 36 @41803 has 19 MA's), (Start: 39 @41809 has 52 MA's), (52, 41935), (55, 41983), (61, 42043), (62, 42046), (69, 42103), (73, 42133), (74, 42139), (76, 42145), (82, 42178), (83, 42181), (86, 42196), (95, 42250), (104, 42328),

Gene: Auxilium_65 Start: 34126, Stop: 34722, Start Num: 39
Candidate Starts for Auxilium_65:
(16, 33883), (18, 33916), (25, 33985), (Start: 39 @34126 has 52 MA's), (49, 34216), (53, 34264), (55, 34297), (61, 34357), (64, 34381), (69, 34417), (71, 34426), (84, 34501), (98, 34597),

Gene: BENtherdunthat_74 Start: 43163, Stop: 43717, Start Num: 39
Candidate Starts for BENtherdunthat_74:
(5, 42662), (9, 42791), (10, 42857), (18, 42959), (25, 43028), (Start: 36 @43157 has 19 MA's), (Start: 39 @43163 has 52 MA's), (52, 43289), (55, 43337), (61, 43397), (62, 43400), (69, 43457), (74, 43493), (76, 43499), (78, 43505), (82, 43532), (83, 43535), (86, 43550), (95, 43604), (96, 43610), (104, 43682),

Gene: BasketStar_70 Start: 37166, Stop: 37711, Start Num: 39
Candidate Starts for BasketStar_70:
(17, 36932), (25, 37028), (Start: 39 @37166 has 52 MA's), (55, 37334), (64, 37418), (66, 37436), (71, 37463), (74, 37490), (90, 37568), (99, 37637),

Gene: Bauer_63 Start: 34908, Stop: 35459, Start Num: 39
Candidate Starts for Bauer_63:
(25, 34770), (Start: 39 @34908 has 52 MA's), (55, 35076), (60, 35124), (64, 35160), (66, 35178), (71, 35205), (83, 35274),

Gene: BellaJr_61 Start: 35741, Stop: 36283, Start Num: 39
Candidate Starts for BellaJr_61:
(Start: 39 @35741 has 52 MA's), (55, 35909), (67, 36014), (71, 36038), (74, 36065), (80, 36098),

Gene: BenchScraper_69 Start: 36331, Stop: 36885, Start Num: 39
Candidate Starts for BenchScraper_69:
(Start: 39 @36331 has 52 MA's), (55, 36499), (64, 36583), (67, 36604), (71, 36628), (74, 36655), (83, 36697), (87, 36721),

Gene: Bhageatrice_74 Start: 39430, Stop: 39975, Start Num: 39
Candidate Starts for Bhageatrice_74:
(17, 39196), (25, 39292), (Start: 39 @39430 has 52 MA's), (45, 39478), (55, 39598), (64, 39682), (66, 39700), (71, 39727), (74, 39754), (99, 39901),

Gene: BillyTP_70 Start: 38186, Stop: 38740, Start Num: 39
Candidate Starts for BillyTP_70:
(Start: 39 @38186 has 52 MA's), (55, 38354), (64, 38438), (67, 38459), (71, 38483), (74, 38510), (83, 38552), (87, 38576),

Gene: Birdsong_68 Start: 41539, Stop: 42099, Start Num: 36
Candidate Starts for Birdsong_68:
(10, 41239), (18, 41341), (25, 41410), (Start: 36 @41539 has 19 MA's), (Start: 39 @41545 has 52 MA's), (52, 41671), (55, 41719), (61, 41779), (62, 41782), (69, 41839), (73, 41869), (74, 41875), (76, 41881), (82, 41914), (83, 41917), (86, 41932), (95, 41986), (104, 42064),

Gene: BlackSpider_57 Start: 33768, Stop: 34319, Start Num: 39
Candidate Starts for BlackSpider_57:
(25, 33630), (Start: 39 @33768 has 52 MA's), (55, 33936), (64, 34020), (66, 34038), (71, 34065), (74, 34092),

Gene: BlueShadow_68 Start: 36657, Stop: 37211, Start Num: 39
Candidate Starts for BlueShadow_68:
(28, 36531), (Start: 39 @36657 has 52 MA's), (46, 36714), (55, 36828), (71, 36957), (77, 36993), (85, 37035), (94, 37080),

Gene: BrayBeast_53 Start: 30531, Stop: 31082, Start Num: 39
Candidate Starts for BrayBeast_53:
(17, 30297), (25, 30393), (Start: 39 @30531 has 52 MA's), (41, 30543), (43, 30555), (49, 30627), (55, 30705), (56, 30714), (58, 30720), (64, 30789), (71, 30834), (76, 30867), (83, 30903), (99, 31014),

Gene: Budski_75 Start: 43660, Stop: 44220, Start Num: 36
Candidate Starts for Budski_75:

(9, 43294), (10, 43360), (18, 43462), (25, 43531), (Start: 36 @43660 has 19 MA's), (Start: 39 @43666 has 52 MA's), (52, 43792), (55, 43840), (61, 43900), (62, 43903), (69, 43960), (73, 43990), (74, 43996), (76, 44002), (82, 44035), (83, 44038), (86, 44053), (95, 44107), (104, 44185),

Gene: Cassini_64 Start: 35759, Stop: 36355, Start Num: 39
Candidate Starts for Cassini_64:
(16, 35516), (18, 35549), (25, 35618), (Start: 39 @35759 has 52 MA's), (49, 35849), (53, 35897), (55, 35930), (61, 35990), (64, 36014), (69, 36050), (71, 36059), (84, 36134), (98, 36230),

Gene: CookieBear_69 Start: 36246, Stop: 36794, Start Num: 39
Candidate Starts for CookieBear_69:
(17, 36012), (25, 36108), (Start: 39 @36246 has 52 MA's), (55, 36414), (64, 36498), (66, 36516), (71, 36543), (83, 36612), (89, 36645),

Gene: CosmicBrownie_65 Start: 35380, Stop: 35934, Start Num: 39
Candidate Starts for CosmicBrownie_65:
(28, 35254), (Start: 39 @35380 has 52 MA's), (55, 35551), (71, 35680), (77, 35716), (85, 35758), (94, 35803),

Gene: Crater_70 Start: 42204, Stop: 42764, Start Num: 36
Candidate Starts for Crater_70:
(9, 41838), (10, 41904), (18, 42006), (20, 42027), (25, 42075), (Start: 36 @42204 has 19 MA's), (Start: 39 @42210 has 52 MA's), (52, 42336), (55, 42384), (61, 42444), (62, 42447), (69, 42504), (78, 42552), (82, 42579), (86, 42597), (95, 42651), (96, 42657), (104, 42729),

Gene: Crescenzo_71 Start: 38387, Stop: 38929, Start Num: 39
Candidate Starts for Crescenzo_71:
(17, 38153), (25, 38249), (Start: 39 @38387 has 52 MA's), (55, 38555), (66, 38657), (71, 38684), (74, 38711), (83, 38753), (99, 38855),

Gene: DarwinJr_73 Start: 38342, Stop: 38884, Start Num: 39
Candidate Starts for DarwinJr_73:
(17, 38108), (25, 38204), (Start: 39 @38342 has 52 MA's), (55, 38510), (66, 38612), (71, 38639), (74, 38666), (83, 38708), (99, 38810),

Gene: Ding_58 Start: 34882, Stop: 35424, Start Num: 39
Candidate Starts for Ding_58:
(Start: 39 @34882 has 52 MA's), (54, 35029), (55, 35050), (64, 35134), (67, 35155), (71, 35179), (74, 35206),

Gene: Faith5x5_47 Start: 32247, Stop: 32810, Start Num: 39
Candidate Starts for Faith5x5_47:
(14, 32001), (19, 32070), (Start: 39 @32247 has 52 MA's), (49, 32337), (52, 32373), (55, 32421), (61, 32481), (62, 32484), (64, 32505), (69, 32541), (93, 32664), (94, 32673), (104, 32766),

Gene: Faja_70 Start: 37936, Stop: 38490, Start Num: 39
Candidate Starts for Faja_70:
(Start: 39 @37936 has 52 MA's), (55, 38104), (64, 38188), (67, 38209), (71, 38233), (80, 38293), (83, 38302),

Gene: Footloose_52 Start: 30290, Stop: 30850, Start Num: 39
Candidate Starts for Footloose_52:

(37, 30287), (Start: 39 @30290 has 52 MA's), (55, 30464), (56, 30473), (65, 30551), (69, 30584), (71, 30593), (74, 30620), (88, 30692), (91, 30704),

Gene: Frickyeah_75 Start: 42944, Stop: 43498, Start Num: 36
Candidate Starts for Frickyeah_75:
(15, 42710), (22, 42803), (29, 42878), (Start: 36 @42944 has 19 MA's), (Start: 39 @42950 has 52 MA's), (52, 43070), (55, 43118), (61, 43178), (62, 43181), (69, 43238), (73, 43268), (74, 43274), (76, 43280), (82, 43313), (83, 43316), (86, 43331), (95, 43385), (104, 43463),

Gene: Getalong_73 Start: 44401, Stop: 44958, Start Num: 40
Candidate Starts for Getalong_73:
(Start: 40 @44401 has 6 MA's), (47, 44470), (55, 44569), (70, 44698), (75, 44737), (95, 44845), (104, 44923),

Gene: Globfish_70 Start: 37028, Stop: 37594, Start Num: 39
Candidate Starts for Globfish_70:
(Start: 39 @37028 has 52 MA's), (41, 37040), (43, 37052), (55, 37202), (56, 37211), (58, 37217), (64, 37286), (67, 37307), (71, 37331), (80, 37391), (83, 37400), (103, 37544),

Gene: Gorpy_68 Start: 37238, Stop: 37783, Start Num: 39
Candidate Starts for Gorpy_68:
(17, 37004), (25, 37100), (Start: 39 @37238 has 52 MA's), (45, 37286), (55, 37406), (64, 37490), (67, 37511), (71, 37535), (90, 37640), (99, 37709),

Gene: GumGum_72 Start: 36855, Stop: 37451, Start Num: 39
Candidate Starts for GumGum_72:
(16, 36612), (18, 36645), (25, 36714), (Start: 39 @36855 has 52 MA's), (49, 36945), (53, 36993), (55, 37026), (61, 37086), (64, 37110), (69, 37146), (71, 37155), (84, 37230), (98, 37326),

Gene: Hestia_61 Start: 34159, Stop: 34713, Start Num: 39
Candidate Starts for Hestia_61:
(Start: 39 @34159 has 52 MA's), (55, 34327), (71, 34456), (78, 34495),

Gene: Hillester_74 Start: 38114, Stop: 38662, Start Num: 36
Candidate Starts for Hillester_74:
(28, 37994), (Start: 36 @38114 has 19 MA's), (55, 38279), (64, 38363), (66, 38381), (76, 38441),

Gene: Holliday_74 Start: 45922, Stop: 46473, Start Num: 39
Candidate Starts for Holliday_74:
(9, 45550), (10, 45616), (18, 45718), (25, 45787), (Start: 39 @45922 has 52 MA's), (Start: 40 @45928 has 6 MA's), (49, 46012), (51, 46039), (55, 46093), (56, 46102), (60, 46141), (64, 46177), (68, 46207), (71, 46222), (76, 46255), (78, 46261), (82, 46288), (83, 46291), (86, 46306), (93, 46336), (95, 46360), (101, 46405), (104, 46438),

Gene: InLimbo_50 Start: 33354, Stop: 33920, Start Num: 40
Candidate Starts for InLimbo_50:
(Start: 40 @33354 has 6 MA's), (49, 33441), (58, 33537), (63, 33588), (70, 33651), (75, 33690), (93, 33774), (94, 33783), (95, 33798), (104, 33876),

Gene: Isolde_68 Start: 36363, Stop: 36905, Start Num: 39
Candidate Starts for Isolde_68:
(Start: 39 @36363 has 52 MA's), (55, 36531), (64, 36615), (66, 36633), (71, 36660), (85, 36738), (99, 36831),

Gene: JakeTheSnake_73 Start: 38801, Stop: 39397, Start Num: 39
Candidate Starts for JakeTheSnake_73:
(32, 38738), (Start: 39 @38801 has 52 MA's), (49, 38891), (50, 38909), (53, 38939), (55, 38972), (61, 39032), (64, 39056), (71, 39101), (83, 39170), (98, 39272),

Gene: JellyBread_66 Start: 35591, Stop: 36139, Start Num: 39
Candidate Starts for JellyBread_66:
(Start: 39 @35591 has 52 MA's), (55, 35759), (64, 35843), (67, 35864), (71, 35888), (83, 35957), (89, 35990),

Gene: Kabloowy_68 Start: 37510, Stop: 38064, Start Num: 39
Candidate Starts for Kabloowy_68:
(Start: 39 @37510 has 52 MA's), (55, 37678), (64, 37762), (67, 37783), (71, 37807), (74, 37834), (83, 37876), (87, 37900),

Gene: Kamaru_67 Start: 41724, Stop: 42284, Start Num: 36
Candidate Starts for Kamaru_67:
(10, 41424), (18, 41526), (20, 41547), (25, 41595), (Start: 36 @41724 has 19 MA's), (Start: 39 @41730 has 52 MA's), (52, 41856), (55, 41904), (61, 41964), (62, 41967), (69, 42024), (74, 42060), (76, 42066), (78, 42072), (82, 42099), (86, 42117), (95, 42171), (96, 42177), (104, 42249),

Gene: Kenna_67 Start: 41841, Stop: 42398, Start Num: 40
Candidate Starts for Kenna_67:
(Start: 40 @41841 has 6 MA's), (47, 41910), (55, 42009), (70, 42138), (75, 42177), (95, 42285), (104, 42363),

Gene: Kumotta_53 Start: 31213, Stop: 31815, Start Num: 39
Candidate Starts for Kumotta_53:
(33, 31156), (Start: 35 @31198 has 1 MA's), (Start: 39 @31213 has 52 MA's), (44, 31252), (54, 31360), (55, 31381), (71, 31510), (78, 31549), (100, 31690),

Gene: Lasker_67 Start: 36931, Stop: 37479, Start Num: 39
Candidate Starts for Lasker_67:
(Start: 39 @36931 has 52 MA's), (55, 37099), (64, 37183), (66, 37201), (71, 37228), (74, 37255), (89, 37330),

Gene: Lawnathon_71 Start: 36731, Stop: 37285, Start Num: 39
Candidate Starts for Lawnathon_71:
(Start: 39 @36731 has 52 MA's), (55, 36899), (64, 36983), (67, 37004), (71, 37028), (74, 37055), (83, 37097), (87, 37121),

Gene: LeBruni_69 Start: 36441, Stop: 36989, Start Num: 39
Candidate Starts for LeBruni_69:
(23, 36282), (24, 36300), (31, 36375), (34, 36399), (Start: 39 @36441 has 52 MA's), (55, 36609), (64, 36693), (66, 36711), (71, 36738), (80, 36798), (83, 36807),

Gene: Leroy_70 Start: 42140, Stop: 42700, Start Num: 36
Candidate Starts for Leroy_70:
(9, 41774), (10, 41840), (18, 41942), (20, 41963), (25, 42011), (Start: 36 @42140 has 19 MA's), (Start: 39 @42146 has 52 MA's), (52, 42272), (55, 42320), (61, 42380), (62, 42383), (69, 42440), (76, 42482), (78, 42488), (82, 42515), (86, 42533), (95, 42587), (96, 42593), (104, 42665),

Gene: Lton_49 Start: 31623, Stop: 32180, Start Num: 40
Candidate Starts for Lton_49:
(Start: 40 @31623 has 6 MA's), (47, 31692), (49, 31710), (58, 31806), (63, 31857), (70, 31920), (75, 31959), (76, 31962), (82, 31995), (95, 32067), (104, 32145),

Gene: Lucky10_50 Start: 34323, Stop: 34883, Start Num: 36
Candidate Starts for Lucky10_50:
(9, 33957), (10, 34023), (18, 34125), (25, 34194), (Start: 36 @34323 has 19 MA's), (Start: 39 @34329 has 52 MA's), (52, 34455), (55, 34503), (61, 34563), (62, 34566), (69, 34623), (76, 34665), (78, 34671), (82, 34698), (83, 34701), (93, 34746), (95, 34770), (99, 34806), (101, 34815), (104, 34848),

Gene: Lutum_73 Start: 43004, Stop: 43561, Start Num: 40
Candidate Starts for Lutum_73:
(Start: 40 @43004 has 6 MA's), (47, 43073), (55, 43172), (70, 43301), (75, 43340), (95, 43448), (104, 43526),

Gene: MUWow_69 Start: 36827, Stop: 37375, Start Num: 39
Candidate Starts for MUWow_69:
(25, 36689), (Start: 39 @36827 has 52 MA's), (55, 36995), (64, 37079), (66, 37097), (71, 37124), (74, 37151), (89, 37226),

Gene: Malisha_75 Start: 46665, Stop: 47252, Start Num: 39
Candidate Starts for Malisha_75:
(10, 46359), (18, 46461), (20, 46482), (25, 46530), (Start: 39 @46665 has 52 MA's), (Start: 40 @46671 has 6 MA's), (42, 46674), (48, 46740), (49, 46755), (51, 46782), (55, 46836), (56, 46845), (58, 46851), (59, 46878), (60, 46884), (64, 46920), (67, 46941), (68, 46950), (71, 46965), (73, 46986), (76, 46998), (78, 47004), (82, 47031), (83, 47034), (97, 47118),

Gene: Mapleville_64 Start: 36050, Stop: 36604, Start Num: 39
Candidate Starts for Mapleville_64:
(Start: 39 @36050 has 52 MA's), (55, 36218), (64, 36302), (67, 36323), (71, 36347), (74, 36374), (83, 36416), (87, 36440),

Gene: MargaretKali_49 Start: 29816, Stop: 30433, Start Num: 35
Candidate Starts for MargaretKali_49:
(33, 29774), (Start: 35 @29816 has 1 MA's), (Start: 39 @29831 has 52 MA's), (44, 29870), (54, 29978), (55, 29999), (71, 30128), (78, 30167), (100, 30308),

Gene: MaterMagnus_69 Start: 36987, Stop: 37535, Start Num: 39
Candidate Starts for MaterMagnus_69:
(17, 36753), (25, 36849), (Start: 39 @36987 has 52 MA's), (45, 37035), (55, 37155), (60, 37203), (64, 37239), (66, 37257), (71, 37284), (83, 37353), (89, 37386),

Gene: MidnightRain_72 Start: 37900, Stop: 38448, Start Num: 36
Candidate Starts for MidnightRain_72:
(28, 37780), (Start: 36 @37900 has 19 MA's), (55, 38065), (64, 38149), (66, 38167), (76, 38227),

Gene: Moosehead_53 Start: 32750, Stop: 33310, Start Num: 40
Candidate Starts for Moosehead_53:
(Start: 40 @32750 has 6 MA's), (47, 32819), (49, 32837), (57, 32930), (58, 32933), (63, 32984), (70, 33047), (75, 33086), (93, 33170), (94, 33179), (95, 33194), (104, 33272),

Gene: Morkie_53 Start: 33852, Stop: 34412, Start Num: 36

Candidate Starts for Morkie_53:
(9, 33486), (10, 33552), (18, 33654), (25, 33723), (Start: 36 @33852 has 19 MA's), (Start: 39 @33858 has 52 MA's), (52, 33984), (55, 34032), (61, 34092), (62, 34095), (69, 34152), (76, 34194), (78, 34200), (82, 34227), (83, 34230), (86, 34245), (95, 34299), (96, 34305), (104, 34377),

Gene: MurphyJoseph_67 Start: 35809, Stop: 36363, Start Num: 39
Candidate Starts for MurphyJoseph_67:
(Start: 39 @35809 has 52 MA's), (55, 35977), (64, 36061), (67, 36082), (71, 36106), (74, 36133), (83, 36175), (87, 36199),

Gene: NewKitty_72 Start: 37213, Stop: 37809, Start Num: 39
Candidate Starts for NewKitty_72:
(Start: 39 @37213 has 52 MA's), (49, 37303), (50, 37321), (53, 37351), (55, 37384), (61, 37444), (64, 37468), (71, 37513), (79, 37567), (98, 37684),

Gene: Nyilah_71 Start: 35838, Stop: 36392, Start Num: 39
Candidate Starts for Nyilah_71:
(28, 35712), (Start: 39 @35838 has 52 MA's), (55, 36009), (71, 36138), (77, 36174), (85, 36216), (94, 36261),

Gene: OneDirection_47 Start: 31245, Stop: 31805, Start Num: 36
Candidate Starts for OneDirection_47:
(9, 30879), (10, 30945), (18, 31047), (25, 31116), (Start: 36 @31245 has 19 MA's), (Start: 39 @31251 has 52 MA's), (52, 31377), (55, 31425), (61, 31485), (62, 31488), (69, 31545), (78, 31593), (82, 31620), (83, 31623), (86, 31638), (93, 31668), (95, 31692), (101, 31737), (104, 31770),

Gene: Pepperoni_48 Start: 33008, Stop: 33568, Start Num: 36
Candidate Starts for Pepperoni_48:
(9, 32642), (10, 32708), (18, 32810), (25, 32879), (Start: 36 @33008 has 19 MA's), (Start: 39 @33014 has 52 MA's), (52, 33140), (55, 33188), (61, 33248), (62, 33251), (69, 33308), (76, 33350), (78, 33356), (82, 33383), (83, 33386), (86, 33401), (95, 33455), (96, 33461), (104, 33533),

Gene: Periwinkle_80 Start: 45304, Stop: 45864, Start Num: 36
Candidate Starts for Periwinkle_80:
(10, 45004), (18, 45106), (25, 45175), (Start: 36 @45304 has 19 MA's), (Start: 39 @45310 has 52 MA's), (52, 45436), (55, 45484), (61, 45544), (62, 45547), (69, 45604), (74, 45640), (76, 45646), (78, 45652), (82, 45679), (86, 45697), (95, 45751), (96, 45757), (104, 45829),

Gene: Persistence_63 Start: 35457, Stop: 36002, Start Num: 36
Candidate Starts for Persistence_63:
(28, 35337), (Start: 36 @35457 has 19 MA's), (49, 35541), (55, 35619), (64, 35703), (66, 35721),

Gene: Phistory_69 Start: 41369, Stop: 41929, Start Num: 36
Candidate Starts for Phistory_69:
(9, 41003), (10, 41069), (18, 41171), (20, 41192), (25, 41240), (Start: 36 @41369 has 19 MA's), (Start: 39 @41375 has 52 MA's), (52, 41501), (55, 41549), (61, 41609), (62, 41612), (69, 41669), (78, 41717), (82, 41744), (86, 41762), (95, 41816), (96, 41822), (104, 41894),

Gene: PhorbesPhlower_50 Start: 32807, Stop: 33364, Start Num: 40
Candidate Starts for PhorbesPhlower_50:
(Start: 40 @32807 has 6 MA's), (47, 32876), (63, 33041), (67, 33080), (70, 33104), (81, 33176), (93, 33227), (94, 33236), (95, 33251), (101, 33296), (102, 33314), (104, 33329),

Gene: Phrank15_72 Start: 37310, Stop: 37858, Start Num: 39
Candidate Starts for Phrank15_72:
(Start: 39 @37310 has 52 MA's), (55, 37478), (64, 37562), (66, 37580), (71, 37607),

Gene: Pigu_51 Start: 29678, Stop: 30238, Start Num: 39
Candidate Starts for Pigu_51:
(Start: 39 @29678 has 52 MA's), (48, 29753), (55, 29849), (57, 29861), (58, 29864), (71, 29978), (72, 29987), (77, 30014), (78, 30017), (83, 30047), (92, 30086),

Gene: REQ2_58 Start: 39206, Stop: 39829, Start Num: 39
Candidate Starts for REQ2_58:
(17, 38975), (18, 39002), (22, 39041), (25, 39071), (Start: 39 @39206 has 52 MA's), (51, 39323), (55, 39377), (61, 39437), (74, 39533), (83, 39575),

Gene: RadFad_74 Start: 38114, Stop: 38662, Start Num: 36
Candidate Starts for RadFad_74:
(28, 37994), (Start: 36 @38114 has 19 MA's), (55, 38279), (64, 38363), (66, 38381), (76, 38441),

Gene: Raphaella_69 Start: 36429, Stop: 36983, Start Num: 39
Candidate Starts for Raphaella_69:
(Start: 39 @36429 has 52 MA's), (55, 36597), (64, 36681), (67, 36702), (71, 36726), (74, 36753), (83, 36795), (87, 36819),

Gene: Raqqa_65 Start: 34745, Stop: 35305, Start Num: 39
Candidate Starts for Raqqa_65:
(13, 34481), (27, 34619), (Start: 39 @34745 has 52 MA's), (41, 34757), (43, 34769), (49, 34841), (55, 34919), (56, 34928), (58, 34934), (64, 35003), (71, 35048), (76, 35081), (87, 35141),

Gene: Richie_72 Start: 38234, Stop: 38788, Start Num: 39
Candidate Starts for Richie_72:
(Start: 39 @38234 has 52 MA's), (55, 38402), (64, 38486), (67, 38507), (71, 38531), (74, 38558), (83, 38600), (87, 38624),

Gene: Sakai_67 Start: 35949, Stop: 36494, Start Num: 39
Candidate Starts for Sakai_67:
(17, 35715), (25, 35811), (Start: 39 @35949 has 52 MA's), (45, 35997), (55, 36117), (64, 36201), (67, 36222), (71, 36246), (90, 36351), (99, 36420),

Gene: Sarge_47 Start: 28278, Stop: 28829, Start Num: 39
Candidate Starts for Sarge_47:
(17, 28044), (20, 28092), (25, 28140), (Start: 39 @28278 has 52 MA's), (41, 28290), (43, 28302), (49, 28374), (55, 28452), (56, 28461), (58, 28467), (64, 28536), (71, 28581), (76, 28614), (83, 28650), (99, 28761),

Gene: Sashimi_67 Start: 37351, Stop: 37905, Start Num: 39
Candidate Starts for Sashimi_67:
(Start: 39 @37351 has 52 MA's), (55, 37519), (64, 37603), (71, 37648), (80, 37708),

Gene: Satrap_69 Start: 36903, Stop: 37448, Start Num: 39
Candidate Starts for Satrap_69:
(28, 36777), (Start: 39 @36903 has 52 MA's), (48, 36978), (55, 37074), (71, 37203), (77, 37239), (85, 37281),

Gene: Seahorse_73 Start: 38791, Stop: 39336, Start Num: 39
Candidate Starts for Seahorse_73:
(28, 38665), (Start: 39 @38791 has 52 MA's), (48, 38866), (55, 38962), (71, 39091), (77, 39127), (85, 39169),

Gene: ShawBrad_74 Start: 42460, Stop: 43020, Start Num: 36
Candidate Starts for ShawBrad_74:
(10, 42160), (18, 42262), (25, 42331), (Start: 36 @42460 has 19 MA's), (Start: 39 @42466 has 52 MA's), (52, 42592), (55, 42640), (61, 42700), (62, 42703), (69, 42760), (76, 42802), (78, 42808), (82, 42835), (83, 42838), (93, 42883), (95, 42907), (99, 42943), (101, 42952), (104, 42985),

Gene: Shukran_67 Start: 35241, Stop: 35786, Start Num: 38
Candidate Starts for Shukran_67:
(Start: 38 @35241 has 1 MA's), (55, 35409), (56, 35418), (71, 35538), (78, 35577),

Gene: SonDevVon_76 Start: 38030, Stop: 38578, Start Num: 39
Candidate Starts for SonDevVon_76:
(Start: 39 @38030 has 52 MA's), (55, 38198), (64, 38282), (66, 38300), (71, 38327),

Gene: SpicyFrank_72 Start: 37649, Stop: 38206, Start Num: 39
Candidate Starts for SpicyFrank_72:
(Start: 39 @37649 has 52 MA's), (55, 37817), (64, 37901), (67, 37922), (71, 37946), (76, 37979), (80, 38006), (83, 38015), (85, 38024), (103, 38156),

Gene: Sporco_72 Start: 37680, Stop: 38276, Start Num: 39
Candidate Starts for Sporco_72:
(1, 36714), (2, 36969), (3, 37095), (4, 37155), (6, 37275), (8, 37290), (32, 37617), (Start: 39 @37680 has 52 MA's), (49, 37770), (50, 37788), (53, 37818), (55, 37851), (61, 37911), (64, 37935), (71, 37980), (79, 38034), (98, 38151),

Gene: ThayneTheZag_74 Start: 37312, Stop: 37872, Start Num: 39
Candidate Starts for ThayneTheZag_74:
(7, 36919), (11, 37015), (12, 37036), (21, 37144), (26, 37180), (28, 37189), (30, 37237), (Start: 39 @37312 has 52 MA's), (55, 37480), (64, 37564), (67, 37585), (71, 37609), (74, 37636), (80, 37669), (103, 37822),

Gene: Tiff81_65 Start: 34896, Stop: 35441, Start Num: 39
Candidate Starts for Tiff81_65:
(17, 34662), (25, 34758), (Start: 39 @34896 has 52 MA's), (55, 35064), (64, 35148), (66, 35166), (71, 35193), (74, 35220), (99, 35367),

Gene: Vopal_71 Start: 39582, Stop: 40130, Start Num: 36
Candidate Starts for Vopal_71:
(28, 39462), (Start: 36 @39582 has 19 MA's), (55, 39747), (64, 39831), (66, 39849), (76, 39909),

Gene: Whitney_70 Start: 43573, Stop: 44133, Start Num: 36
Candidate Starts for Whitney_70:
(9, 43207), (10, 43273), (18, 43375), (25, 43444), (Start: 36 @43573 has 19 MA's), (Start: 39 @43579 has 52 MA's), (52, 43705), (55, 43753), (61, 43813), (62, 43816), (69, 43873), (73, 43903), (74, 43909), (76, 43915), (82, 43948), (83, 43951), (86, 43966), (95, 44020), (104, 44098),

Gene: Windest_72 Start: 35789, Stop: 36343, Start Num: 39
Candidate Starts for Windest_72:

(Start: 39 @35789 has 52 MA's), (55, 35957), (64, 36041), (67, 36062), (71, 36086), (74, 36113), (83, 36155), (87, 36179),

Gene: YoungHarleezy_68 Start: 36644, Stop: 37195, Start Num: 39
Candidate Starts for YoungHarleezy_68:
(17, 36410), (25, 36506), (Start: 39 @36644 has 52 MA's), (45, 36692), (55, 36812), (64, 36896), (66, 36914), (71, 36941), (83, 37010),

Gene: Zucker_65 Start: 37002, Stop: 37598, Start Num: 39
Candidate Starts for Zucker_65:
(Start: 39 @37002 has 52 MA's), (49, 37092), (50, 37110), (53, 37140), (55, 37173), (61, 37233), (64, 37257), (71, 37302), (79, 37356), (98, 37473),