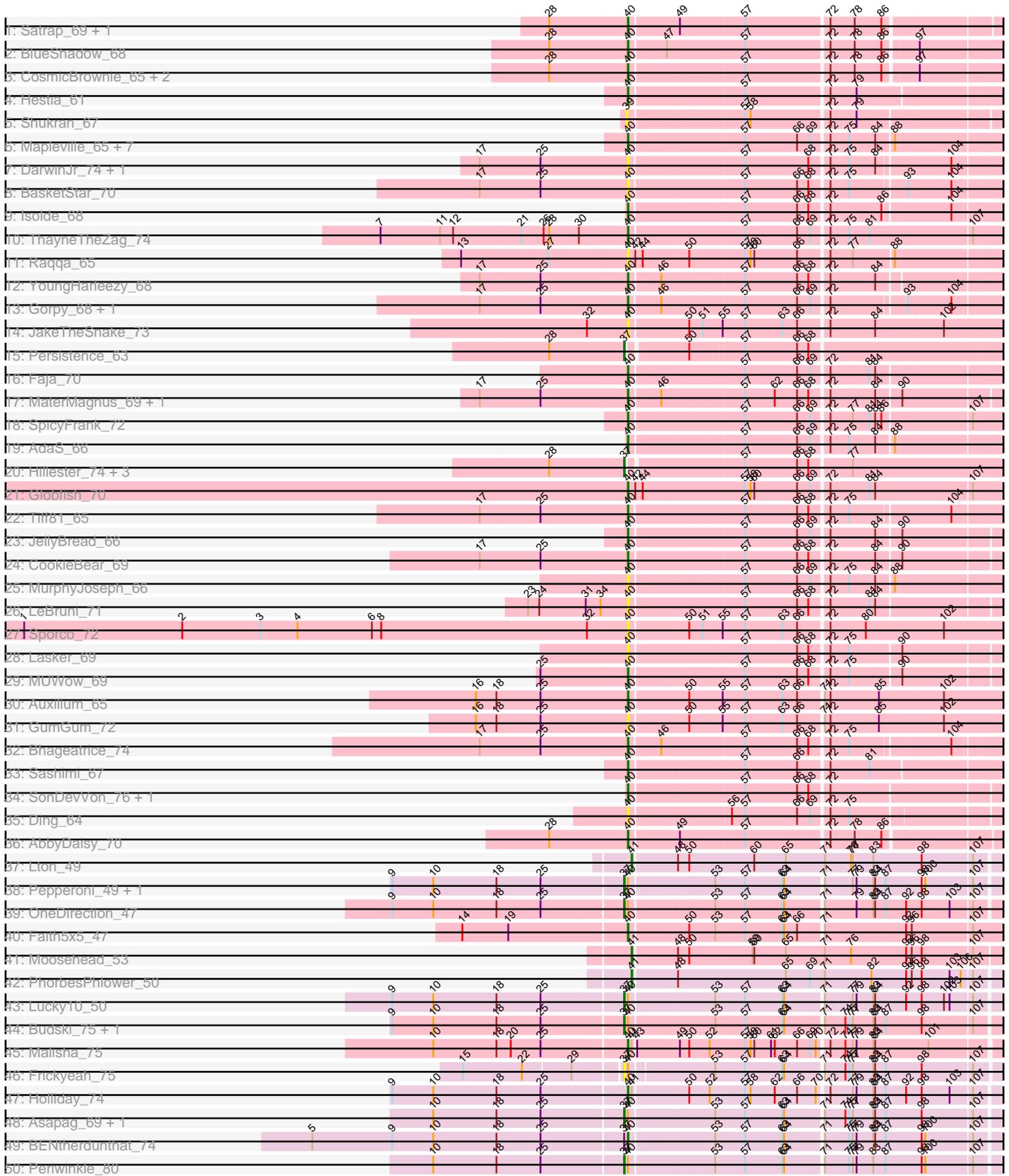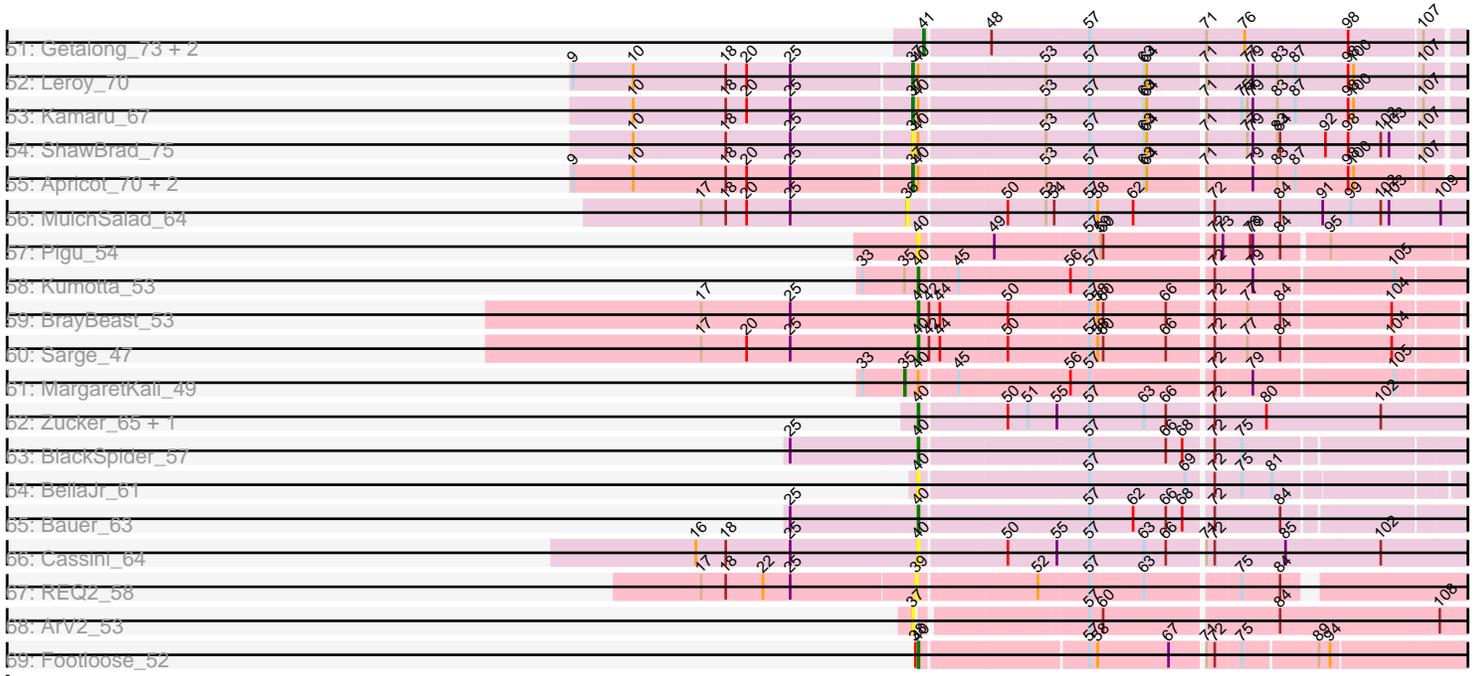# Pham 291032

Pham 291032

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 291032 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291032 has 94 members, 30 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_65, Windest_72, BillyTP_70, Lawnathon_71, BenchScraper_69, Richie_72, Kabloowy_69, Raphaella_69
• Track 7 : DarwinJr_74, Crescenzo_73
• Track 8 : BasketStar_70
• Track 9 : Isolde_68
• Track 10 : ThayneTheZag_74
• Track 11 : Raqqa_65
• Track 12 : YoungHarleezy_68
• Track 13 : Gorpy_68, Sakai_67
• Track 14 : JakeTheSnake_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_66
• Track 26 : LeBruni_71
• Track 27 : Sporco_72
• Track 28 : Lasker_69
• Track 29 : MUWow_69
• 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_64
• Track 36 : AbbyDaisy_70

• Track 37 : Lton_49
• Track 38 : Pepperoni_49, Morkie_53
• Track 39 : OneDirection_47
• Track 40 : Faith5x5_47
• Track 41 : Moosehead_53
• Track 42 : PhorbesPhlower_50
• Track 43 : Lucky10_50
• Track 44 : Budski_75, Whitney_70
• Track 45 : Malisha_75
• Track 46 : Frickyeah_75
• Track 47 : Holliday_74
• Track 48 : Asapag_69, Birdsong_68
• Track 49 : BENtherdunthat_74
• Track 50 : Periwinkle_80
• Track 51 : Getalong_73, Kenna_67, Lutum_73
• Track 52 : Leroy_70
• Track 53 : Kamaru_67
• Track 54 : ShawBrad_75
• Track 55 : Apricot_70, Phistory_69, Crater_70
• Track 56 : MulchSalad_64
• Track 57 : Pigu_54
• 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 40, it was called in 40 of the 64 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_73, DarwinJr_74, Ding_64, Faith5x5_47, Faja_70, Footloose_52, Globfish_70, Gorpy_68, GumGum_72, Hestia_61, Holliday_74, Isolde_68, JakeTheSnake_73, JellyBread_66, Kabloowy_69, Kumotta_53, Lasker_69, Lawnathon_71, LeBruni_71, MUWow_69, Malisha_75, Mapleville_65, MaterMagnus_69, MurphyJoseph_66, NewKitty_72, Nyilah_71, Phrank15_72, Pigu_54, 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_49, Periwinkle_80, Phistory_69, ShawBrad_75, Whitney_70,

Genes that do not have the "Most Annotated" start:
• ArV2_53, Getalong_73, Hillester_74, Kenna_67, Lton_49, Lutum_73, MidnightRain_72, Moosehead_53, MulchSalad_64, Persistence_63, PhorbesPhlower_50, REQ2_58, 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 64
• Called 50.0% of time when present
• Phage (with cluster) where this start called: MargaretKali_49 (FB),

Start 36:
• Found in 1 of 94 (1.1%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: MulchSalad_64 (F7),

Start 37:
• Found in 23 of 94 (24.5%) of genes in pham
• Manual Annotations of this start: 17 of 64
• 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_49 (CZ), Periwinkle_80 (DN1), Persistence_63 (AY), Phistory_69 (DN1), RadFad_74 (AY), ShawBrad_75 (DN1), Vopal_71 (AY), Whitney_70 (DN1),

Start 39:
• Found in 2 of 94 (2.1%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: REQ2_58 (singleton), Shukran_67 (AY),

Start 40:
• Found in 79 of 94 (84.0%) of genes in pham
• Manual Annotations of this start: 40 of 64
• Called 78.5% 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_73 (AY), DarwinJr_74 (AY), Ding_64 (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_69 (AY), Kumotta_53 (FB), Lasker_69 (AY), Lawnathon_71 (AY), LeBruni_71 (AY), MUWow_69 (AY), Malisha_75 (DN), Mapleville_65 (AY), MaterMagnus_69 (AY), MurphyJoseph_66 (AY), NewKitty_72 (AY), Nyilah_71 (AY), Phrank15_72 (AY), Pigu_54 (FB), 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 41:
• Found in 8 of 94 (8.5%) of genes in pham
• Manual Annotations of this start: 6 of 64
• Called 75.0% of time when present
• Phage (with cluster) where this start called: Getalong_73 (DN1), Kenna_67 (DN1), Lton_49 (CZ), Lutum_73 (DN1), Moosehead_53 (CZ6), PhorbesPhlower_50 (DH),

Summary by clusters:

There are 11 clusters represented in this pham: DN, singleton, DH, F7, CZ6, CZ, FB, DN1, DN3, AY, FN,

Info for manual annotations of cluster AY:
•Start number 37 was manually annotated 4 times for cluster AY.
•Start number 40 was manually annotated 29 times for cluster AY.

Info for manual annotations of cluster CZ:
•Start number 41 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ6:
•Start number 37 was manually annotated 1 time for cluster CZ6.
•Start number 40 was manually annotated 1 time for cluster CZ6.
•Start number 41 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DH:
•Start number 37 was manually annotated 2 times for cluster DH.
•Start number 41 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN:
•Start number 37 was manually annotated 2 times for cluster DN.
•Start number 40 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:
•Start number 37 was manually annotated 6 times for cluster DN1.
•Start number 40 was manually annotated 2 times for cluster DN1.
•Start number 41 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster DN3:
•Start number 37 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 40 was manually annotated 3 times for cluster FB.

Info for manual annotations of cluster FN:
•Start number 40 was manually annotated 3 times for cluster FN.

Gene Information:

Gene: AbbyDaisy_70 Start: 37654, Stop: 38199, Start Num: 40
Candidate Starts for AbbyDaisy_70:
(28, 37528), (Start: 40 @37654 has 40 MA's), (49, 37729), (57, 37825), (72, 37954), (78, 37990), (86, 38032),

Gene: AdaS_66 Start: 34944, Stop: 35498, Start Num: 40
Candidate Starts for AdaS_66:
(Start: 40 @34944 has 40 MA's), (57, 35112), (66, 35196), (69, 35217), (72, 35241), (75, 35268), (84, 35310), (88, 35334),

Gene: Aikyam_68 Start: 34815, Stop: 35363, Start Num: 40
Candidate Starts for Aikyam_68:
(17, 34581), (25, 34677), (Start: 40 @34815 has 40 MA's), (46, 34863), (57, 34983), (62, 35031), (66, 35067), (68, 35085), (72, 35112), (84, 35181), (90, 35214),

Gene: Anekin_72 Start: 37646, Stop: 38200, Start Num: 40
Candidate Starts for Anekin_72:
(28, 37520), (Start: 40 @37646 has 40 MA's), (57, 37817), (72, 37946), (78, 37982), (86, 38024), (97, 38069),

Gene: Apricot_70 Start: 41809, Stop: 42369, Start Num: 37
Candidate Starts for Apricot_70:
(9, 41443), (10, 41509), (18, 41611), (20, 41632), (25, 41680), (Start: 37 @41809 has 17 MA's), (Start: 40 @41815 has 40 MA's), (53, 41941), (57, 41989), (63, 42049), (64, 42052), (71, 42109), (79, 42157), (83, 42184), (87, 42202), (98, 42256), (100, 42262), (107, 42334),

Gene: ArV2_53 Start: 29854, Stop: 30420, Start Num: 37
Candidate Starts for ArV2_53:
(Start: 37 @29854 has 17 MA's), (57, 30016), (60, 30031), (84, 30217), (108, 30379),

Gene: Asapag_69 Start: 41803, Stop: 42363, Start Num: 37
Candidate Starts for Asapag_69:
(10, 41503), (18, 41605), (25, 41674), (Start: 37 @41803 has 17 MA's), (Start: 40 @41809 has 40 MA's), (53, 41935), (57, 41983), (63, 42043), (64, 42046), (71, 42103), (74, 42133), (75, 42139), (77, 42145), (83, 42178), (84, 42181), (87, 42196), (98, 42250), (107, 42328),

Gene: Auxilium_65 Start: 34126, Stop: 34722, Start Num: 40
Candidate Starts for Auxilium_65:
(16, 33883), (18, 33916), (25, 33985), (Start: 40 @34126 has 40 MA's), (50, 34216), (55, 34264), (57, 34297), (63, 34357), (66, 34381), (71, 34417), (72, 34426), (85, 34501), (102, 34597),

Gene: BENtherdunthat_74 Start: 43163, Stop: 43717, Start Num: 40

Candidate Starts for BENtherdunthat_74:
(5, 42662), (9, 42791), (10, 42857), (18, 42959), (25, 43028), (Start: 37 @43157 has 17 MA's), (Start: 40 @43163 has 40 MA's), (53, 43289), (57, 43337), (63, 43397), (64, 43400), (71, 43457), (75, 43493), (77, 43499), (79, 43505), (83, 43532), (84, 43535), (87, 43550), (98, 43604), (100, 43610), (107, 43682),

Gene: BasketStar_70 Start: 37166, Stop: 37711, Start Num: 40
Candidate Starts for BasketStar_70:
(17, 36932), (25, 37028), (Start: 40 @37166 has 40 MA's), (57, 37334), (66, 37418), (68, 37436), (72, 37463), (75, 37490), (93, 37568), (104, 37637),

Gene: Bauer_63 Start: 34908, Stop: 35459, Start Num: 40
Candidate Starts for Bauer_63:
(25, 34770), (Start: 40 @34908 has 40 MA's), (57, 35076), (62, 35124), (66, 35160), (68, 35178), (72, 35205), (84, 35274),

Gene: BellaJr_61 Start: 35741, Stop: 36283, Start Num: 40
Candidate Starts for BellaJr_61:
(Start: 40 @35741 has 40 MA's), (57, 35909), (69, 36014), (72, 36038), (75, 36065), (81, 36098),

Gene: BenchScraper_69 Start: 36331, Stop: 36885, Start Num: 40
Candidate Starts for BenchScraper_69:
(Start: 40 @36331 has 40 MA's), (57, 36499), (66, 36583), (69, 36604), (72, 36628), (75, 36655), (84, 36697), (88, 36721),

Gene: Bhageatrice_74 Start: 39430, Stop: 39975, Start Num: 40
Candidate Starts for Bhageatrice_74:
(17, 39196), (25, 39292), (Start: 40 @39430 has 40 MA's), (46, 39478), (57, 39598), (66, 39682), (68, 39700), (72, 39727), (75, 39754), (104, 39901),

Gene: BillyTP_70 Start: 38186, Stop: 38740, Start Num: 40
Candidate Starts for BillyTP_70:
(Start: 40 @38186 has 40 MA's), (57, 38354), (66, 38438), (69, 38459), (72, 38483), (75, 38510), (84, 38552), (88, 38576),

Gene: Birdsong_68 Start: 41539, Stop: 42099, Start Num: 37
Candidate Starts for Birdsong_68:
(10, 41239), (18, 41341), (25, 41410), (Start: 37 @41539 has 17 MA's), (Start: 40 @41545 has 40 MA's), (53, 41671), (57, 41719), (63, 41779), (64, 41782), (71, 41839), (74, 41869), (75, 41875), (77, 41881), (83, 41914), (84, 41917), (87, 41932), (98, 41986), (107, 42064),

Gene: BlackSpider_57 Start: 33768, Stop: 34319, Start Num: 40
Candidate Starts for BlackSpider_57:
(25, 33630), (Start: 40 @33768 has 40 MA's), (57, 33936), (66, 34020), (68, 34038), (72, 34065), (75, 34092),

Gene: BlueShadow_68 Start: 36657, Stop: 37211, Start Num: 40
Candidate Starts for BlueShadow_68:
(28, 36531), (Start: 40 @36657 has 40 MA's), (47, 36714), (57, 36828), (72, 36957), (78, 36993), (86, 37035), (97, 37080),

Gene: BrayBeast_53 Start: 30531, Stop: 31082, Start Num: 40
Candidate Starts for BrayBeast_53:

(17, 30297), (25, 30393), (Start: 40 @30531 has 40 MA's), (42, 30543), (44, 30555), (50, 30627), (57, 30705), (58, 30714), (60, 30720), (66, 30789), (72, 30834), (77, 30867), (84, 30903), (104, 31014),

Gene: Budski_75 Start: 43660, Stop: 44220, Start Num: 37
Candidate Starts for Budski_75:
(9, 43294), (10, 43360), (18, 43462), (25, 43531), (Start: 37 @43660 has 17 MA's), (Start: 40 @43666 has 40 MA's), (53, 43792), (57, 43840), (63, 43900), (64, 43903), (71, 43960), (74, 43990), (75, 43996), (77, 44002), (83, 44035), (84, 44038), (87, 44053), (98, 44107), (107, 44185),

Gene: Cassini_64 Start: 35759, Stop: 36355, Start Num: 40
Candidate Starts for Cassini_64:
(16, 35516), (18, 35549), (25, 35618), (Start: 40 @35759 has 40 MA's), (50, 35849), (55, 35897), (57, 35930), (63, 35990), (66, 36014), (71, 36050), (72, 36059), (85, 36134), (102, 36230),

Gene: CookieBear_69 Start: 36246, Stop: 36794, Start Num: 40
Candidate Starts for CookieBear_69:
(17, 36012), (25, 36108), (Start: 40 @36246 has 40 MA's), (57, 36414), (66, 36498), (68, 36516), (72, 36543), (84, 36612), (90, 36645),

Gene: CosmicBrownie_65 Start: 35380, Stop: 35934, Start Num: 40
Candidate Starts for CosmicBrownie_65:
(28, 35254), (Start: 40 @35380 has 40 MA's), (57, 35551), (72, 35680), (78, 35716), (86, 35758), (97, 35803),

Gene: Crater_70 Start: 42204, Stop: 42764, Start Num: 37
Candidate Starts for Crater_70:
(9, 41838), (10, 41904), (18, 42006), (20, 42027), (25, 42075), (Start: 37 @42204 has 17 MA's), (Start: 40 @42210 has 40 MA's), (53, 42336), (57, 42384), (63, 42444), (64, 42447), (71, 42504), (79, 42552), (83, 42579), (87, 42597), (98, 42651), (100, 42657), (107, 42729),

Gene: Crescenzo_73 Start: 38387, Stop: 38929, Start Num: 40
Candidate Starts for Crescenzo_73:
(17, 38153), (25, 38249), (Start: 40 @38387 has 40 MA's), (57, 38555), (68, 38657), (72, 38684), (75, 38711), (84, 38753), (104, 38855),

Gene: DarwinJr_74 Start: 38342, Stop: 38884, Start Num: 40
Candidate Starts for DarwinJr_74:
(17, 38108), (25, 38204), (Start: 40 @38342 has 40 MA's), (57, 38510), (68, 38612), (72, 38639), (75, 38666), (84, 38708), (104, 38810),

Gene: Ding_64 Start: 34882, Stop: 35424, Start Num: 40
Candidate Starts for Ding_64:
(Start: 40 @34882 has 40 MA's), (56, 35029), (57, 35050), (66, 35134), (69, 35155), (72, 35179), (75, 35206),

Gene: Faith5x5_47 Start: 32247, Stop: 32810, Start Num: 40
Candidate Starts for Faith5x5_47:
(14, 32001), (19, 32070), (Start: 40 @32247 has 40 MA's), (50, 32337), (53, 32373), (57, 32421), (63, 32481), (64, 32484), (66, 32505), (71, 32541), (92, 32664), (96, 32673), (107, 32766),

Gene: Faja_70 Start: 37936, Stop: 38490, Start Num: 40
Candidate Starts for Faja_70:

(Start: 40 @37936 has 40 MA's), (57, 38104), (66, 38188), (69, 38209), (72, 38233), (81, 38293), (84, 38302),

Gene: Footloose_52 Start: 30290, Stop: 30850, Start Num: 40
Candidate Starts for Footloose_52:
(38, 30287), (Start: 40 @30290 has 40 MA's), (57, 30464), (58, 30473), (67, 30551), (71, 30584), (72, 30593), (75, 30620), (89, 30692), (94, 30704),

Gene: Frickyeah_75 Start: 42944, Stop: 43498, Start Num: 37
Candidate Starts for Frickyeah_75:
(15, 42710), (22, 42803), (29, 42878), (Start: 37 @42944 has 17 MA's), (Start: 40 @42950 has 40 MA's), (53, 43070), (57, 43118), (63, 43178), (64, 43181), (71, 43238), (74, 43268), (75, 43274), (77, 43280), (83, 43313), (84, 43316), (87, 43331), (98, 43385), (107, 43463),

Gene: Getalong_73 Start: 44401, Stop: 44958, Start Num: 41
Candidate Starts for Getalong_73:
(Start: 41 @44401 has 6 MA's), (48, 44470), (57, 44569), (71, 44698), (76, 44737), (98, 44845), (107, 44923),

Gene: Globfish_70 Start: 37028, Stop: 37594, Start Num: 40
Candidate Starts for Globfish_70:
(Start: 40 @37028 has 40 MA's), (42, 37040), (44, 37052), (57, 37202), (58, 37211), (60, 37217), (66, 37286), (69, 37307), (72, 37331), (81, 37391), (84, 37400), (107, 37544),

Gene: Gorpy_68 Start: 37238, Stop: 37783, Start Num: 40
Candidate Starts for Gorpy_68:
(17, 37004), (25, 37100), (Start: 40 @37238 has 40 MA's), (46, 37286), (57, 37406), (66, 37490), (69, 37511), (72, 37535), (93, 37640), (104, 37709),

Gene: GumGum_72 Start: 36855, Stop: 37451, Start Num: 40
Candidate Starts for GumGum_72:
(16, 36612), (18, 36645), (25, 36714), (Start: 40 @36855 has 40 MA's), (50, 36945), (55, 36993), (57, 37026), (63, 37086), (66, 37110), (71, 37146), (72, 37155), (85, 37230), (102, 37326),

Gene: Hestia_61 Start: 34159, Stop: 34713, Start Num: 40
Candidate Starts for Hestia_61:
(Start: 40 @34159 has 40 MA's), (57, 34327), (72, 34456), (79, 34495),

Gene: Hillester_74 Start: 38114, Stop: 38662, Start Num: 37
Candidate Starts for Hillester_74:
(28, 37994), (Start: 37 @38114 has 17 MA's), (57, 38279), (66, 38363), (68, 38381), (77, 38441),

Gene: Holliday_74 Start: 45922, Stop: 46473, Start Num: 40
Candidate Starts for Holliday_74:
(9, 45550), (10, 45616), (18, 45718), (25, 45787), (Start: 40 @45922 has 40 MA's), (Start: 41 @45928 has 6 MA's), (50, 46012), (52, 46039), (57, 46093), (58, 46102), (62, 46141), (66, 46177), (70, 46207), (72, 46222), (77, 46255), (79, 46261), (83, 46288), (84, 46291), (87, 46306), (92, 46336), (98, 46360), (103, 46405), (107, 46438),

Gene: Isolde_68 Start: 36363, Stop: 36905, Start Num: 40
Candidate Starts for Isolde_68:
(Start: 40 @36363 has 40 MA's), (57, 36531), (66, 36615), (68, 36633), (72, 36660), (86, 36738), (104, 36831),

Gene: JakeTheSnake_73 Start: 38801, Stop: 39397, Start Num: 40
Candidate Starts for JakeTheSnake_73:
(32, 38738), (Start: 40 @38801 has 40 MA's), (50, 38891), (51, 38909), (55, 38939), (57, 38972), (63, 39032), (66, 39056), (72, 39101), (84, 39170), (102, 39272),

Gene: JellyBread_66 Start: 35591, Stop: 36139, Start Num: 40
Candidate Starts for JellyBread_66:
(Start: 40 @35591 has 40 MA's), (57, 35759), (66, 35843), (69, 35864), (72, 35888), (84, 35957), (90, 35990),

Gene: Kabloowy_69 Start: 37510, Stop: 38064, Start Num: 40
Candidate Starts for Kabloowy_69:
(Start: 40 @37510 has 40 MA's), (57, 37678), (66, 37762), (69, 37783), (72, 37807), (75, 37834), (84, 37876), (88, 37900),

Gene: Kamaru_67 Start: 41724, Stop: 42284, Start Num: 37
Candidate Starts for Kamaru_67:
(10, 41424), (18, 41526), (20, 41547), (25, 41595), (Start: 37 @41724 has 17 MA's), (Start: 40 @41730 has 40 MA's), (53, 41856), (57, 41904), (63, 41964), (64, 41967), (71, 42024), (75, 42060), (77, 42066), (79, 42072), (83, 42099), (87, 42117), (98, 42171), (100, 42177), (107, 42249),

Gene: Kenna_67 Start: 41841, Stop: 42398, Start Num: 41
Candidate Starts for Kenna_67:
(Start: 41 @41841 has 6 MA's), (48, 41910), (57, 42009), (71, 42138), (76, 42177), (98, 42285), (107, 42363),

Gene: Kumotta_53 Start: 31213, Stop: 31815, Start Num: 40
Candidate Starts for Kumotta_53:
(33, 31156), (Start: 35 @31198 has 1 MA's), (Start: 40 @31213 has 40 MA's), (45, 31252), (56, 31360), (57, 31381), (72, 31510), (79, 31549), (105, 31690),

Gene: Lasker_69 Start: 36931, Stop: 37479, Start Num: 40
Candidate Starts for Lasker_69:
(Start: 40 @36931 has 40 MA's), (57, 37099), (66, 37183), (68, 37201), (72, 37228), (75, 37255), (90, 37330),

Gene: Lawnathon_71 Start: 36731, Stop: 37285, Start Num: 40
Candidate Starts for Lawnathon_71:
(Start: 40 @36731 has 40 MA's), (57, 36899), (66, 36983), (69, 37004), (72, 37028), (75, 37055), (84, 37097), (88, 37121),

Gene: LeBruni_71 Start: 36441, Stop: 36989, Start Num: 40
Candidate Starts for LeBruni_71:
(23, 36282), (24, 36300), (31, 36375), (34, 36399), (Start: 40 @36441 has 40 MA's), (57, 36609), (66, 36693), (68, 36711), (72, 36738), (81, 36798), (84, 36807),

Gene: Leroy_70 Start: 42140, Stop: 42700, Start Num: 37
Candidate Starts for Leroy_70:
(9, 41774), (10, 41840), (18, 41942), (20, 41963), (25, 42011), (Start: 37 @42140 has 17 MA's), (Start: 40 @42146 has 40 MA's), (53, 42272), (57, 42320), (63, 42380), (64, 42383), (71, 42440), (77, 42482), (79, 42488), (83, 42515), (87, 42533), (98, 42587), (100, 42593), (107, 42665),

Gene: Lton_49 Start: 31623, Stop: 32180, Start Num: 41
Candidate Starts for Lton_49:
(Start: 41 @31623 has 6 MA's), (48, 31692), (50, 31710), (60, 31806), (65, 31857), (71, 31920), (76, 31959), (77, 31962), (83, 31995), (98, 32067), (107, 32145),

Gene: Lucky10_50 Start: 34323, Stop: 34883, Start Num: 37
Candidate Starts for Lucky10_50:
(9, 33957), (10, 34023), (18, 34125), (25, 34194), (Start: 37 @34323 has 17 MA's), (Start: 40 @34329 has 40 MA's), (53, 34455), (57, 34503), (63, 34563), (64, 34566), (71, 34623), (77, 34665), (79, 34671), (83, 34698), (84, 34701), (92, 34746), (98, 34770), (102, 34806), (103, 34815), (107, 34848),

Gene: Lutum_73 Start: 43004, Stop: 43561, Start Num: 41
Candidate Starts for Lutum_73:
(Start: 41 @43004 has 6 MA's), (48, 43073), (57, 43172), (71, 43301), (76, 43340), (98, 43448), (107, 43526),

Gene: MUWow_69 Start: 36827, Stop: 37375, Start Num: 40
Candidate Starts for MUWow_69:
(25, 36689), (Start: 40 @36827 has 40 MA's), (57, 36995), (66, 37079), (68, 37097), (72, 37124), (75, 37151), (90, 37226),

Gene: Malisha_75 Start: 46665, Stop: 47252, Start Num: 40
Candidate Starts for Malisha_75:
(10, 46359), (18, 46461), (20, 46482), (25, 46530), (Start: 40 @46665 has 40 MA's), (Start: 41 @46671 has 6 MA's), (43, 46674), (49, 46740), (50, 46755), (52, 46782), (57, 46836), (58, 46845), (60, 46851), (61, 46878), (62, 46884), (66, 46920), (69, 46941), (70, 46950), (72, 46965), (74, 46986), (77, 46998), (79, 47004), (83, 47031), (84, 47034), (101, 47118),

Gene: Mapleville_65 Start: 36050, Stop: 36604, Start Num: 40
Candidate Starts for Mapleville_65:
(Start: 40 @36050 has 40 MA's), (57, 36218), (66, 36302), (69, 36323), (72, 36347), (75, 36374), (84, 36416), (88, 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: 40 @29831 has 40 MA's), (45, 29870), (56, 29978), (57, 29999), (72, 30128), (79, 30167), (105, 30308),

Gene: MaterMagnus_69 Start: 36987, Stop: 37535, Start Num: 40
Candidate Starts for MaterMagnus_69:
(17, 36753), (25, 36849), (Start: 40 @36987 has 40 MA's), (46, 37035), (57, 37155), (62, 37203), (66, 37239), (68, 37257), (72, 37284), (84, 37353), (90, 37386),

Gene: MidnightRain_72 Start: 37900, Stop: 38448, Start Num: 37
Candidate Starts for MidnightRain_72:
(28, 37780), (Start: 37 @37900 has 17 MA's), (57, 38065), (66, 38149), (68, 38167), (77, 38227),

Gene: Moosehead_53 Start: 32750, Stop: 33310, Start Num: 41
Candidate Starts for Moosehead_53:
(Start: 41 @32750 has 6 MA's), (48, 32819), (50, 32837), (59, 32930), (60, 32933), (65, 32984), (71, 33047), (76, 33086), (92, 33170), (96, 33179), (98, 33194), (107, 33272),

Gene: Morkie_53 Start: 33852, Stop: 34412, Start Num: 37

Candidate Starts for Morkie_53:
(9, 33486), (10, 33552), (18, 33654), (25, 33723), (Start: 37 @33852 has 17 MA's), (Start: 40 @33858 has 40 MA's), (53, 33984), (57, 34032), (63, 34092), (64, 34095), (71, 34152), (77, 34194), (79, 34200), (83, 34227), (84, 34230), (87, 34245), (98, 34299), (100, 34305), (107, 34377),

Gene: MulchSalad_64 Start: 39574, Stop: 40215, Start Num: 36
Candidate Starts for MulchSalad_64:
(17, 39349), (18, 39376), (20, 39397), (25, 39445), (36, 39574), (50, 39676), (53, 39712), (54, 39721), (57, 39760), (58, 39769), (62, 39808), (72, 39889), (84, 39958), (91, 40000), (99, 40030), (102, 40063), (103, 40072), (109, 40129),

Gene: MurphyJoseph_66 Start: 35809, Stop: 36363, Start Num: 40
Candidate Starts for MurphyJoseph_66:
(Start: 40 @35809 has 40 MA's), (57, 35977), (66, 36061), (69, 36082), (72, 36106), (75, 36133), (84, 36175), (88, 36199),

Gene: NewKitty_72 Start: 37213, Stop: 37809, Start Num: 40
Candidate Starts for NewKitty_72:
(Start: 40 @37213 has 40 MA's), (50, 37303), (51, 37321), (55, 37351), (57, 37384), (63, 37444), (66, 37468), (72, 37513), (80, 37567), (102, 37684),

Gene: Nyilah_71 Start: 35838, Stop: 36392, Start Num: 40
Candidate Starts for Nyilah_71:
(28, 35712), (Start: 40 @35838 has 40 MA's), (57, 36009), (72, 36138), (78, 36174), (86, 36216), (97, 36261),

Gene: OneDirection_47 Start: 31245, Stop: 31805, Start Num: 37
Candidate Starts for OneDirection_47:
(9, 30879), (10, 30945), (18, 31047), (25, 31116), (Start: 37 @31245 has 17 MA's), (Start: 40 @31251 has 40 MA's), (53, 31377), (57, 31425), (63, 31485), (64, 31488), (71, 31545), (79, 31593), (83, 31620), (84, 31623), (87, 31638), (92, 31668), (98, 31692), (103, 31737), (107, 31770),

Gene: Pepperoni_49 Start: 33008, Stop: 33568, Start Num: 37
Candidate Starts for Pepperoni_49:
(9, 32642), (10, 32708), (18, 32810), (25, 32879), (Start: 37 @33008 has 17 MA's), (Start: 40 @33014 has 40 MA's), (53, 33140), (57, 33188), (63, 33248), (64, 33251), (71, 33308), (77, 33350), (79, 33356), (83, 33383), (84, 33386), (87, 33401), (98, 33455), (100, 33461), (107, 33533),

Gene: Periwinkle_80 Start: 45304, Stop: 45864, Start Num: 37
Candidate Starts for Periwinkle_80:
(10, 45004), (18, 45106), (25, 45175), (Start: 37 @45304 has 17 MA's), (Start: 40 @45310 has 40 MA's), (53, 45436), (57, 45484), (63, 45544), (64, 45547), (71, 45604), (75, 45640), (77, 45646), (79, 45652), (83, 45679), (87, 45697), (98, 45751), (100, 45757), (107, 45829),

Gene: Persistence_63 Start: 35457, Stop: 36002, Start Num: 37
Candidate Starts for Persistence_63:
(28, 35337), (Start: 37 @35457 has 17 MA's), (50, 35541), (57, 35619), (66, 35703), (68, 35721),

Gene: Phistory_69 Start: 41369, Stop: 41929, Start Num: 37
Candidate Starts for Phistory_69:
(9, 41003), (10, 41069), (18, 41171), (20, 41192), (25, 41240), (Start: 37 @41369 has 17 MA's), (Start: 40 @41375 has 40 MA's), (53, 41501), (57, 41549), (63, 41609), (64, 41612), (71, 41669), (79, 41717), (83, 41744), (87, 41762), (98, 41816), (100, 41822), (107, 41894),

Gene: PhorbesPhlower_50 Start: 32807, Stop: 33364, Start Num: 41
Candidate Starts for PhorbesPhlower_50:
(Start: 41 @32807 has 6 MA's), (48, 32876), (65, 33041), (69, 33080), (71, 33104), (82, 33176), (92, 33227), (96, 33236), (98, 33251), (103, 33296), (106, 33314), (107, 33329),

Gene: Phrank15_72 Start: 37310, Stop: 37858, Start Num: 40
Candidate Starts for Phrank15_72:
(Start: 40 @37310 has 40 MA's), (57, 37478), (66, 37562), (68, 37580), (72, 37607),

Gene: Pigu_54 Start: 29678, Stop: 30238, Start Num: 40
Candidate Starts for Pigu_54:
(Start: 40 @29678 has 40 MA's), (49, 29753), (57, 29849), (59, 29861), (60, 29864), (72, 29978), (73, 29987), (78, 30014), (79, 30017), (84, 30047), (95, 30086),

Gene: REQ2_58 Start: 39206, Stop: 39829, Start Num: 39
Candidate Starts for REQ2_58:
(17, 38975), (18, 39002), (22, 39041), (25, 39071), (39, 39206), (52, 39323), (57, 39377), (63, 39437), (75, 39533), (84, 39575),

Gene: RadFad_74 Start: 38114, Stop: 38662, Start Num: 37
Candidate Starts for RadFad_74:
(28, 37994), (Start: 37 @38114 has 17 MA's), (57, 38279), (66, 38363), (68, 38381), (77, 38441),

Gene: Raphaella_69 Start: 36429, Stop: 36983, Start Num: 40
Candidate Starts for Raphaella_69:
(Start: 40 @36429 has 40 MA's), (57, 36597), (66, 36681), (69, 36702), (72, 36726), (75, 36753), (84, 36795), (88, 36819),

Gene: Raqqa_65 Start: 34745, Stop: 35305, Start Num: 40
Candidate Starts for Raqqa_65:
(13, 34481), (27, 34619), (Start: 40 @34745 has 40 MA's), (42, 34757), (44, 34769), (50, 34841), (57, 34919), (58, 34928), (60, 34934), (66, 35003), (72, 35048), (77, 35081), (88, 35141),

Gene: Richie_72 Start: 38234, Stop: 38788, Start Num: 40
Candidate Starts for Richie_72:
(Start: 40 @38234 has 40 MA's), (57, 38402), (66, 38486), (69, 38507), (72, 38531), (75, 38558), (84, 38600), (88, 38624),

Gene: Sakai_67 Start: 35949, Stop: 36494, Start Num: 40
Candidate Starts for Sakai_67:
(17, 35715), (25, 35811), (Start: 40 @35949 has 40 MA's), (46, 35997), (57, 36117), (66, 36201), (69, 36222), (72, 36246), (93, 36351), (104, 36420),

Gene: Sarge_47 Start: 28278, Stop: 28829, Start Num: 40
Candidate Starts for Sarge_47:
(17, 28044), (20, 28092), (25, 28140), (Start: 40 @28278 has 40 MA's), (42, 28290), (44, 28302), (50, 28374), (57, 28452), (58, 28461), (60, 28467), (66, 28536), (72, 28581), (77, 28614), (84, 28650), (104, 28761),

Gene: Sashimi_67 Start: 37351, Stop: 37905, Start Num: 40
Candidate Starts for Sashimi_67:
(Start: 40 @37351 has 40 MA's), (57, 37519), (66, 37603), (72, 37648), (81, 37708),

Gene: Satrap_69 Start: 36903, Stop: 37448, Start Num: 40
Candidate Starts for Satrap_69:
(28, 36777), (Start: 40 @36903 has 40 MA's), (49, 36978), (57, 37074), (72, 37203), (78, 37239), (86, 37281),

Gene: Seahorse_73 Start: 38791, Stop: 39336, Start Num: 40
Candidate Starts for Seahorse_73:
(28, 38665), (Start: 40 @38791 has 40 MA's), (49, 38866), (57, 38962), (72, 39091), (78, 39127), (86, 39169),

Gene: ShawBrad_75 Start: 42460, Stop: 43020, Start Num: 37
Candidate Starts for ShawBrad_75:
(10, 42160), (18, 42262), (25, 42331), (Start: 37 @42460 has 17 MA's), (Start: 40 @42466 has 40 MA's), (53, 42592), (57, 42640), (63, 42700), (64, 42703), (71, 42760), (77, 42802), (79, 42808), (83, 42835), (84, 42838), (92, 42883), (98, 42907), (102, 42943), (103, 42952), (107, 42985),

Gene: Shukran_67 Start: 35241, Stop: 35786, Start Num: 39
Candidate Starts for Shukran_67:
(39, 35241), (57, 35409), (58, 35418), (72, 35538), (79, 35577),

Gene: SonDevVon_76 Start: 38030, Stop: 38578, Start Num: 40
Candidate Starts for SonDevVon_76:
(Start: 40 @38030 has 40 MA's), (57, 38198), (66, 38282), (68, 38300), (72, 38327),

Gene: SpicyFrank_72 Start: 37649, Stop: 38206, Start Num: 40
Candidate Starts for SpicyFrank_72:
(Start: 40 @37649 has 40 MA's), (57, 37817), (66, 37901), (69, 37922), (72, 37946), (77, 37979), (81, 38006), (84, 38015), (86, 38024), (107, 38156),

Gene: Sporco_72 Start: 37680, Stop: 38276, Start Num: 40
Candidate Starts for Sporco_72:
(1, 36714), (2, 36969), (3, 37095), (4, 37155), (6, 37275), (8, 37290), (32, 37617), (Start: 40 @37680 has 40 MA's), (50, 37770), (51, 37788), (55, 37818), (57, 37851), (63, 37911), (66, 37935), (72, 37980), (80, 38034), (102, 38151),

Gene: ThayneTheZag_74 Start: 37312, Stop: 37872, Start Num: 40
Candidate Starts for ThayneTheZag_74:
(7, 36919), (11, 37015), (12, 37036), (21, 37144), (26, 37180), (28, 37189), (30, 37237), (Start: 40 @37312 has 40 MA's), (57, 37480), (66, 37564), (69, 37585), (72, 37609), (75, 37636), (81, 37669), (107, 37822),

Gene: Tiff81_65 Start: 34896, Stop: 35441, Start Num: 40
Candidate Starts for Tiff81_65:
(17, 34662), (25, 34758), (Start: 40 @34896 has 40 MA's), (57, 35064), (66, 35148), (68, 35166), (72, 35193), (75, 35220), (104, 35367),

Gene: Vopal_71 Start: 39582, Stop: 40130, Start Num: 37
Candidate Starts for Vopal_71:
(28, 39462), (Start: 37 @39582 has 17 MA's), (57, 39747), (66, 39831), (68, 39849), (77, 39909),

Gene: Whitney_70 Start: 43573, Stop: 44133, Start Num: 37
Candidate Starts for Whitney_70:

(9, 43207), (10, 43273), (18, 43375), (25, 43444), (Start: 37 @43573 has 17 MA's), (Start: 40 @43579 has 40 MA's), (53, 43705), (57, 43753), (63, 43813), (64, 43816), (71, 43873), (74, 43903), (75, 43909), (77, 43915), (83, 43948), (84, 43951), (87, 43966), (98, 44020), (107, 44098),

Gene: Windest_72 Start: 35789, Stop: 36343, Start Num: 40
Candidate Starts for Windest_72:
(Start: 40 @35789 has 40 MA's), (57, 35957), (66, 36041), (69, 36062), (72, 36086), (75, 36113), (84, 36155), (88, 36179),

Gene: YoungHarleezy_68 Start: 36644, Stop: 37195, Start Num: 40
Candidate Starts for YoungHarleezy_68:
(17, 36410), (25, 36506), (Start: 40 @36644 has 40 MA's), (46, 36692), (57, 36812), (66, 36896), (68, 36914), (72, 36941), (84, 37010),

Gene: Zucker_65 Start: 37002, Stop: 37598, Start Num: 40
Candidate Starts for Zucker_65:
(Start: 40 @37002 has 40 MA's), (50, 37092), (51, 37110), (55, 37140), (57, 37173), (63, 37233), (66, 37257), (72, 37302), (80, 37356), (102, 37473),