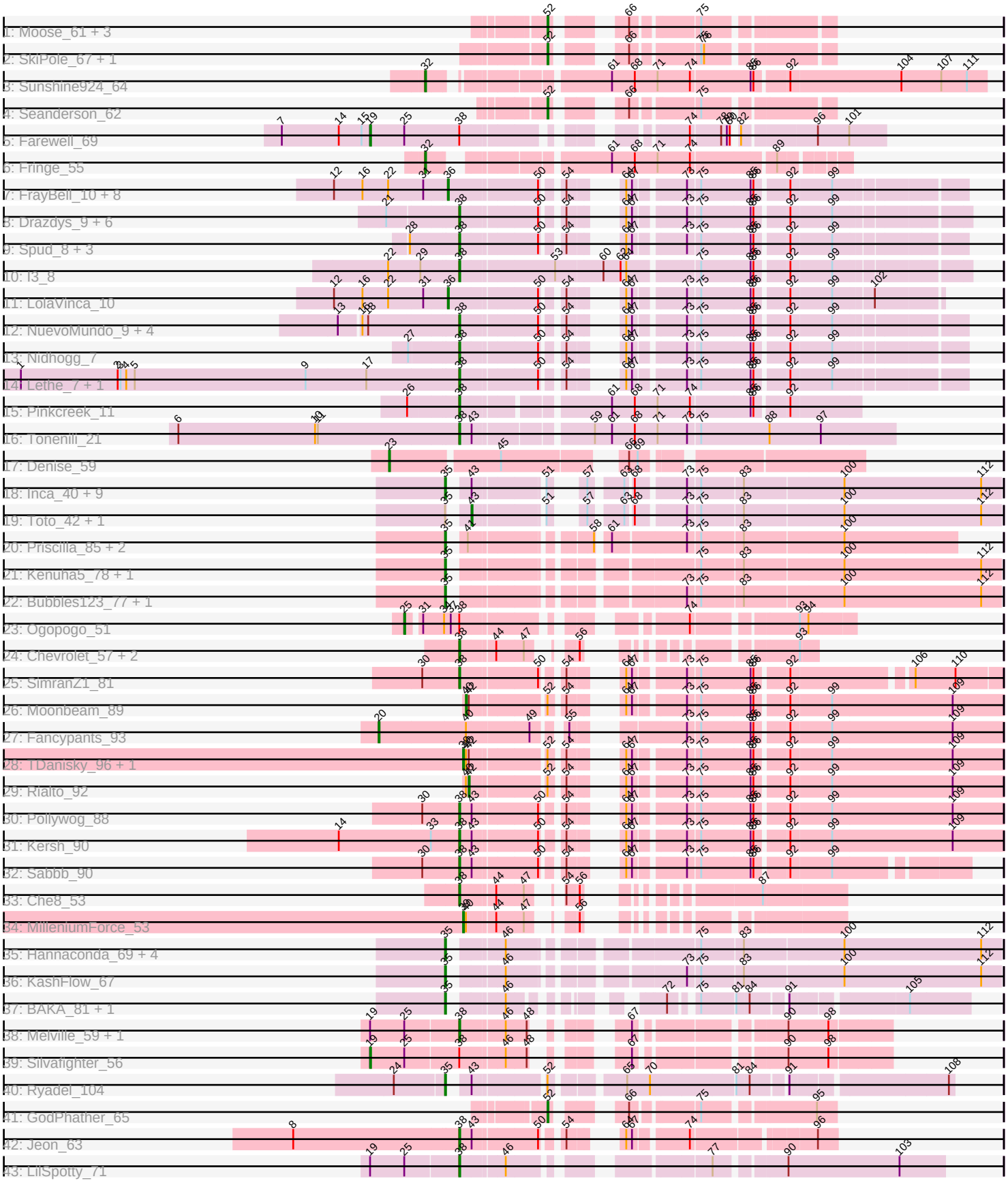
Pham 224482


1: Moose_61 + 3
2: SkiPole_67 + 1
3: Sunshine924_64
4: Seanderson_62
5: Farewell_69
6: Fringe_55
7: FrayBell_10 + 8
8: Drazdys_9 + 6
9: Spud_8 + 3
10: I3_8
11: LolaVinca_10
12: NuevoMundo_9 + 4
13: Nidhogg_7
14: Lethe_7 + 1
15: Pinkcreek_11
16: Tonenili_21
17: Denise_59
18: Inca_40 + 9
19: Toto_42 + 1
20: Priscilla_85 + 2
21: Kenuha5_78 + 1
22: Bubbles123_77 + 1
23: Ogopogo_51
24: Chevrolet_57 + 2
25: SimranZ1_81
26: Moonbeam_89
27: Fancypants_93
28: TDanisky_96 + 1
29: Rialto_92
30: Pollywog_88
31: Kersh_90
32: Sabbb_90
33: Che8_53
34: MilleniumForce_53
35: Hannaconda_69 + 4
36: KashFlow_67
37: BAKA_81 + 1
38: Melville_59 + 1
39: Silvafighter_56
40: Ryadel_104
41: GodPhather_65
42: Jeon_63
43: LilSpotty_71

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 224482 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224482 has 92 members, 7 are drafts.

Phages represented in each track:
- Track 1 : Moose_61, SwissCheese_63, Forsytheast_61, Bruns_61
- Track 2 : SkiPole_67, Pepe_58
- Track 3 : Sunshine924_64
- Track 4 : Seanderson_62
- Track 5 : Farewell_69
- Track 6 : Fringe_55
- Track 7 : FrayBell_10, JayJay_9, Tainan_10, Sebata_9, Specks_10, InterFolia_10, LordLeafolot_10, LinStu_9, JigglyPuff_8
- Track 8 : Drazdys_9, Kamryn_7, Tyke_9, Mikro_7, Bxz1_7, DTDevon_9, NoodleTree_7
- Track 9 : Spud_8, Sauce_7, Pio_8, MoMoMixon_7
- Track 10 : I3_8
- Track 11 : LolaVinca_10
- Track 12 : NuevoMundo_9, StephanieG_9, Pier_10, Astraea_9, Dandelion_10
- Track 13 : Nidhogg_7
- Track 14 : Lethe_7, Bigswole_6
- Track 15 : Pinkcreek_11
- Track 16 : Tonenili_21
- Track 17 : Denise_59
- Track 18 : Inca_40, ABCat_41, BilboSwaggins_42, IHOP_41, Tuco_44, CrystalP_43, Myrale_43, ShamWow_43, StellaBean_41, Phaja_41
- Track 19 : Toto_42, Marshmallow_42
- Track 20 : Priscilla_85, NormanBulbieJr_83, Koella_77
- Track 21 : Kenuha5_78, Nekros_71
- Track 22 : Bubbles123_77, Shauna1_82
- Track 23 : Ogopogo_51
- Track 24 : Chevrolet_57, Royals2015_53, ArcusAngelus_54
- Track 25 : SimranZ1_81
- Track 26 : Moonbeam_89
- Track 27 : Fancypants_93
- Track 28 : TDanisky_96, Sparkdehlily_95
- Track 29 : Rialto_92
- Track 30 : Pollywog_88
- Track 31 : Kersh_90
- Track 32 : Sabbb_90
- Track 33 : Che8_53
- Track 34 : MilleniumForce_53

• Track 35 : Hannaconda_69, Aubs_83, Shaboozey_65, SuperGrey_83, Donkeykong_89
• Track 36 : KashFlow_67
• Track 37 : BAKA_81, Duke13_79
• Track 38 : Melville_59, Duplicity_53
• Track 39 : Silvafighter_56
• Track 40 : Ryadel_104
• Track 41 : GodPhather_65
• Track 42 : Jeon_63
• Track 43 : LilSpotty_71

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

The start number called the most often in the published annotations is 38, it was called in 33 of the 85 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ArcusAngelus_54, Astraea_9, Bigswole_6, Bxz1_7, Che8_53, Chevrolet_57, DTDevon_9, Dandelion_10, Drazdys_9, Duplicity_53, I3_8, Jeon_63, Kamryn_7, Kersh_90, Lethe_7, LilSpotty_71, Melville_59, Mikro_7, MoMoMixon_7, Nidhogg_7, NoodleTree_7, NuevoMundo_9, Pier_10, Pinkcreek_11, Pio_8, Pollywog_88, Royals2015_53, Sabbb_90, Sauce_7, SimranZ1_81, Spud_8, StephanieG_9, Tonenili_21, Tyke_9,

Genes that have the "Most Annotated" start but do not call it:
• Farewell_69, Ogopogo_51, Silvafighter_56,

Genes that do not have the "Most Annotated" start:
• ABCat_41, Aubs_83, BAKA_81, BilboSwaggins_42, Bruns_61, Bubbles123_77, CrystalP_43, Denise_59, Donkeykong_89, Duke13_79, Fancypants_93, Forsytheast_61, FrayBell_10, Fringe_55, GodPhather_65, Hannaconda_69, IHOP_41, Inca_40, InterFolia_10, JayJay_9, JigglyPuff_8, KashFlow_67, Kenuha5_78, Koella_77, LinStu_9, LolaVinca_10, LordLeafolot_10, Marshmallow_42, MilleniumForce_53, Moonbeam_89, Moose_61, Myrale_43, Nekros_71, NormanBulbieJr_83, Pepe_58, Phaja_41, Priscilla_85, Rialto_92, Ryadel_104, Seanderson_62, Sebata_9, Shaboozey_65, ShamWow_43, Shauna1_82, SkiPole_67, Sparkdehlily_95, Specks_10, StellaBean_41, Sunshine924_64, SuperGrey_83, SwissCheese_63, TDanisky_96, Tainan_10, Toto_42, Tuco_44,

Summary by start number:

Start 19:
• Found in 5 of 92 (5.4%) of genes in pham
• Manual Annotations of this start: 2 of 85
• Called 40.0% of time when present
• Phage (with cluster) where this start called: Farewell_69 (AF), Silvafighter_56 (N),

Start 20:
• Found in 1 of 92 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 85

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Fancypants_93 (F1),

Start 23:
• Found in 1 of 92 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 85
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Denise_59 (CZ5),

Start 25:
• Found in 6 of 92 (6.5%) of genes in pham
• Manual Annotations of this start: 1 of 85
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Ogopogo_51 (F1),

Start 32:
• Found in 2 of 92 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 85
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Fringe_55 (B1), Sunshine924_64 (A1),

Start 35:
• Found in 28 of 92 (30.4%) of genes in pham
• Manual Annotations of this start: 23 of 85
• Called 92.9% of time when present
• Phage (with cluster) where this start called: ABCat_41 (E), Aubs_83 (F1), BAKA_81 (J), BilboSwaggins_42 (E), Bubbles123_77 (F1), CrystalP_43 (E), Donkeykong_89 (F1), Duke13_79 (J), Hannaconda_69 (J), IHOP_41 (E), Inca_40 (E), KashFlow_67 (J), Kenuha5_78 (F1), Koella_77 (F1), Myrale_43 (E), Nekros_71 (J), NormanBulbieJr_83 (F1), Phaja_41 (E), Priscilla_85 (F1), Ryadel_104 (O), Shaboozey_65 (J), ShamWow_43 (E), Shauna1_82 (F1), StellaBean_41 (E), SuperGrey_83 (F1), Tuco_44 (E),

Start 36:
• Found in 10 of 92 (10.9%) of genes in pham
• Manual Annotations of this start: 7 of 85
• Called 100.0% of time when present
• Phage (with cluster) where this start called: FrayBell_10 (C1), InterFolia_10 (C1), JayJay_9 (C1), JigglyPuff_8 (C1), LinStu_9 (C1), LolaVinca_10 (C1), LordLeafolot_10 (C1), Sebata_9 (C1), Specks_10 (C1), Tainan_10 (C1),

Start 38:
• Found in 37 of 92 (40.2%) of genes in pham
• Manual Annotations of this start: 33 of 85
• Called 91.9% of time when present
• Phage (with cluster) where this start called: ArcusAngelus_54 (F1), Astraea_9 (C1), Bigswole_6 (C1), Bxz1_7 (C1), Che8_53 (F1), Chevrolet_57 (F1), DTDevon_9 (C1), Dandelion_10 (C1), Drazdys_9 (C1), Duplicity_53 (N), I3_8 (C1), Jeon_63 (W), Kamryn_7 (C1), Kersh_90 (F1), Lethe_7 (C1), LilSpotty_71 (singleton), Melville_59 (N), Mikro_7 (C1), MoMoMixon_7 (C1), Nidhogg_7 (C1), NoodleTree_7 (C1), NuevoMundo_9 (C1), Pier_10 (C1), Pinkcreek_11 (C1), Pio_8 (C1), Pollywog_88 (F1), Royals2015_53 (F1), Sabbb_90 (F1), Sauce_7 (C1), SimranZ1_81 (F1), Spud_8 (C1), StephanieG_9 (C1), Tonenili_21 (C1), Tyke_9 (C1),

Start 39:
• Found in 3 of 92 (3.3%) of genes in pham
• Manual Annotations of this start: 3 of 85
• Called 100.0% of time when present
• Phage (with cluster) where this start called: MilleniumForce_53 (F1), Sparkdehlily_95 (F1), TDanisky_96 (F1),

Start 40:
• Found in 6 of 92 (6.5%) of genes in pham
• Manual Annotations of this start: 1 of 85
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Moonbeam_89 (F1),

Start 42:
• Found in 4 of 92 (4.3%) of genes in pham
• Manual Annotations of this start: 1 of 85
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Rialto_92 (F1),

Start 43:
• Found in 18 of 92 (19.6%) of genes in pham
• Manual Annotations of this start: 2 of 85
• Called 11.1% of time when present
• Phage (with cluster) where this start called: Marshmallow_42 (E), Toto_42 (E),

Start 52:
• Found in 13 of 92 (14.1%) of genes in pham
• Manual Annotations of this start: 8 of 85
• Called 61.5% of time when present
• Phage (with cluster) where this start called: Bruns_61 (A1), Forsytheast_61 (A1), GodPhather_65 (W), Moose_61 (A1), Pepe_58 (A1), Seanderson_62 (A1), SkiPole_67 (A1), SwissCheese_63 (A1),

Summary by clusters:

There are 12 clusters represented in this pham: F1, singleton, E, AF, J, O, N, A1, B1, W, C1, CZ5,

Info for manual annotations of cluster A1:
•Start number 32 was manually annotated 1 time for cluster A1.
•Start number 52 was manually annotated 7 times for cluster A1.

Info for manual annotations of cluster AF:
•Start number 19 was manually annotated 1 time for cluster AF.

Info for manual annotations of cluster B1:
•Start number 32 was manually annotated 1 time for cluster B1.

Info for manual annotations of cluster C1:
•Start number 36 was manually annotated 7 times for cluster C1.
•Start number 38 was manually annotated 21 times for cluster C1.

Info for manual annotations of cluster CZ5:
•Start number 23 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster E:
•Start number 35 was manually annotated 9 times for cluster E.
•Start number 43 was manually annotated 2 times for cluster E.

Info for manual annotations of cluster F1:
•Start number 20 was manually annotated 1 time for cluster F1.
•Start number 25 was manually annotated 1 time for cluster F1.
•Start number 35 was manually annotated 9 times for cluster F1.
•Start number 38 was manually annotated 8 times for cluster F1.
•Start number 39 was manually annotated 3 times for cluster F1.
•Start number 40 was manually annotated 1 time for cluster F1.
•Start number 42 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster J:
•Start number 35 was manually annotated 4 times for cluster J.

Info for manual annotations of cluster N:
•Start number 19 was manually annotated 1 time for cluster N.
•Start number 38 was manually annotated 2 times for cluster N.

Info for manual annotations of cluster O:
•Start number 35 was manually annotated 1 time for cluster O.

Info for manual annotations of cluster W:
•Start number 38 was manually annotated 1 time for cluster W.
•Start number 52 was manually annotated 1 time for cluster W.

Gene Information:

Gene: ABCat_41 Start: 35824, Stop: 35336, Start Num: 35
Candidate Starts for ABCat_41:
(Start: 35 @35824 has 23 MA's), (Start: 43 @35812 has 2 MA's), (51, 35749), (57, 35734), (63, 35707), (68, 35701), (73, 35656), (75, 35644), (83, 35602), (100, 35500), (112, 35356),

Gene: ArcusAngelus_54 Start: 38017, Stop: 38256, Start Num: 38
Candidate Starts for ArcusAngelus_54:
(Start: 38 @38017 has 33 MA's), (44, 38050), (47, 38077), (56, 38101), (93, 38239),

Gene: Astraea_9 Start: 2499, Stop: 2930, Start Num: 38
Candidate Starts for Astraea_9:
(13, 2394), (16, 2415), (18, 2421), (Start: 38 @2499 has 33 MA's), (50, 2574), (54, 2589), (64, 2616), (67, 2622), (73, 2667), (75, 2679), (85, 2730), (86, 2733), (92, 2763), (99, 2805),

Gene: Aubs_83 Start: 50008, Stop: 50520, Start Num: 35
Candidate Starts for Aubs_83:
(Start: 35 @50008 has 23 MA's), (46, 50050), (75, 50212), (83, 50254), (100, 50356), (112, 50500),

Gene: BAKA_81 Start: 52347, Stop: 51940, Start Num: 35

Candidate Starts for BAKA_81:
(Start: 35 @52347 has 23 MA's), (46, 52305), (72, 52209), (75, 52188), (81, 52155), (84, 52143), (91, 52110), (105, 52002),

Gene: Bigswole_6 Start: 2050, Stop: 2481, Start Num: 38
Candidate Starts for Bigswole_6:
(1, 1606), (2, 1708), (3, 1711), (4, 1717), (5, 1726), (9, 1906), (17, 1969), (Start: 38 @2050 has 33 MA's), (50, 2125), (54, 2140), (64, 2167), (67, 2173), (73, 2218), (75, 2230), (85, 2281), (86, 2284), (92, 2314), (99, 2356),

Gene: BilboSwaggins_42 Start: 35832, Stop: 35344, Start Num: 35
Candidate Starts for BilboSwaggins_42:
(Start: 35 @35832 has 23 MA's), (Start: 43 @35820 has 2 MA's), (51, 35757), (57, 35742), (63, 35715), (68, 35709), (73, 35664), (75, 35652), (83, 35610), (100, 35508), (112, 35364),

Gene: Bruns_61 Start: 39972, Stop: 39745, Start Num: 52
Candidate Starts for Bruns_61:
(Start: 52 @39972 has 8 MA's), (66, 39924), (75, 39864),

Gene: Bubbles123_77 Start: 48885, Stop: 49397, Start Num: 35
Candidate Starts for Bubbles123_77:
(Start: 35 @48885 has 23 MA's), (73, 49077), (75, 49089), (83, 49131), (100, 49233), (112, 49377),

Gene: Bxz1_7 Start: 2148, Stop: 2579, Start Num: 38
Candidate Starts for Bxz1_7:
(21, 2091), (Start: 38 @2148 has 33 MA's), (50, 2223), (54, 2238), (64, 2265), (67, 2271), (73, 2316), (75, 2328), (85, 2379), (86, 2382), (92, 2412), (99, 2454),

Gene: Che8_53 Start: 37842, Stop: 38123, Start Num: 38
Candidate Starts for Che8_53:
(Start: 38 @37842 has 33 MA's), (44, 37875), (47, 37902), (54, 37914), (56, 37926), (87, 38040),

Gene: Chevrolet_57 Start: 38018, Stop: 38257, Start Num: 38
Candidate Starts for Chevrolet_57:
(Start: 38 @38018 has 33 MA's), (44, 38051), (47, 38078), (56, 38102), (93, 38240),

Gene: CrystalP_43 Start: 35832, Stop: 35344, Start Num: 35
Candidate Starts for CrystalP_43:
(Start: 35 @35832 has 23 MA's), (Start: 43 @35820 has 2 MA's), (51, 35757), (57, 35742), (63, 35715), (68, 35709), (73, 35664), (75, 35652), (83, 35610), (100, 35508), (112, 35364),

Gene: DTDevon_9 Start: 2817, Stop: 3251, Start Num: 38
Candidate Starts for DTDevon_9:
(21, 2760), (Start: 38 @2817 has 33 MA's), (50, 2892), (54, 2907), (64, 2934), (67, 2940), (73, 2985), (75, 2997), (85, 3048), (86, 3051), (92, 3081), (99, 3123),

Gene: Dandelion_10 Start: 3168, Stop: 3599, Start Num: 38
Candidate Starts for Dandelion_10:
(13, 3063), (16, 3084), (18, 3090), (Start: 38 @3168 has 33 MA's), (50, 3243), (54, 3258), (64, 3285), (67, 3291), (73, 3336), (75, 3348), (85, 3399), (86, 3402), (92, 3432), (99, 3474),

Gene: Denise_59 Start: 37230, Stop: 37658, Start Num: 23
Candidate Starts for Denise_59:

(Start: 23 @37230 has 1 MA's), (45, 37338), (66, 37440), (69, 37449),

Gene: Donkeykong_89 Start: 51613, Stop: 52125, Start Num: 35
Candidate Starts for Donkeykong_89:
(Start: 35 @51613 has 23 MA's), (46, 51655), (75, 51817), (83, 51859), (100, 51961), (112, 52105),

Gene: Drazdys_9 Start: 2817, Stop: 3251, Start Num: 38
Candidate Starts for Drazdys_9:
(21, 2760), (Start: 38 @2817 has 33 MA's), (50, 2892), (54, 2907), (64, 2934), (67, 2940), (73, 2985), (75, 2997), (85, 3048), (86, 3051), (92, 3081), (99, 3123),

Gene: Duke13_79 Start: 51559, Stop: 51152, Start Num: 35
Candidate Starts for Duke13_79:
(Start: 35 @51559 has 23 MA's), (46, 51517), (72, 51421), (75, 51400), (81, 51367), (84, 51355), (91, 51322), (105, 51214),

Gene: Duplicity_53 Start: 35954, Stop: 36301, Start Num: 38
Candidate Starts for Duplicity_53:
(Start: 19 @35864 has 2 MA's), (Start: 25 @35900 has 1 MA's), (Start: 38 @35954 has 33 MA's), (46, 35996), (48, 36017), (67, 36068), (90, 36197), (98, 36239),

Gene: Fancypants_93 Start: 52418, Stop: 52996, Start Num: 20
Candidate Starts for Fancypants_93:
(Start: 20 @52418 has 1 MA's), (Start: 40 @52508 has 1 MA's), (49, 52571), (55, 52595), (73, 52679), (75, 52691), (85, 52742), (86, 52745), (92, 52775), (99, 52817), (109, 52943),

Gene: Farewell_69 Start: 47142, Stop: 47591, Start Num: 19
Candidate Starts for Farewell_69:
(7, 47049), (14, 47109), (15, 47133), (Start: 19 @47142 has 2 MA's), (Start: 25 @47178 has 1 MA's), (Start: 38 @47235 has 33 MA's), (74, 47406), (78, 47436), (79, 47442), (80, 47445), (82, 47448), (96, 47520), (101, 47553),

Gene: Forsytheast_61 Start: 40140, Stop: 39913, Start Num: 52
Candidate Starts for Forsytheast_61:
(Start: 52 @40140 has 8 MA's), (66, 40092), (75, 40032),

Gene: FrayBell_10 Start: 2978, Stop: 3421, Start Num: 36
Candidate Starts for FrayBell_10:
(12, 2861), (16, 2891), (22, 2918), (31, 2954), (Start: 36 @2978 has 7 MA's), (50, 3065), (54, 3080), (64, 3107), (67, 3113), (73, 3158), (75, 3170), (85, 3221), (86, 3224), (92, 3254), (99, 3296),

Gene: Fringe_55 Start: 47885, Stop: 47511, Start Num: 32
Candidate Starts for Fringe_55:
(Start: 32 @47885 has 2 MA's), (61, 47735), (68, 47711), (71, 47687), (74, 47654), (89, 47573),

Gene: GodPhather_65 Start: 49176, Stop: 49409, Start Num: 52
Candidate Starts for GodPhather_65:
(Start: 52 @49176 has 8 MA's), (66, 49224), (75, 49284), (95, 49389),

Gene: Hannaconda_69 Start: 45759, Stop: 45247, Start Num: 35
Candidate Starts for Hannaconda_69:
(Start: 35 @45759 has 23 MA's), (46, 45717), (75, 45555), (83, 45513), (100, 45411), (112, 45267),

Gene: I3_8 Start: 2847, Stop: 3332, Start Num: 38
Candidate Starts for I3_8:
(22, 2790), (29, 2823), (Start: 38 @2847 has 33 MA's), (53, 2940), (60, 2988), (62, 3006), (64, 3012), (75, 3078), (85, 3129), (86, 3132), (92, 3162), (99, 3204),

Gene: IHOP_41 Start: 35396, Stop: 34908, Start Num: 35
Candidate Starts for IHOP_41:
(Start: 35 @35396 has 23 MA's), (Start: 43 @35384 has 2 MA's), (51, 35321), (57, 35306), (63, 35279), (68, 35273), (73, 35228), (75, 35216), (83, 35174), (100, 35072), (112, 34928),

Gene: Inca_40 Start: 33921, Stop: 33433, Start Num: 35
Candidate Starts for Inca_40:
(Start: 35 @33921 has 23 MA's), (Start: 43 @33909 has 2 MA's), (51, 33846), (57, 33831), (63, 33804), (68, 33798), (73, 33753), (75, 33741), (83, 33699), (100, 33597), (112, 33453),

Gene: InterFolia_10 Start: 2977, Stop: 3420, Start Num: 36
Candidate Starts for InterFolia_10:
(12, 2860), (16, 2890), (22, 2917), (31, 2953), (Start: 36 @2977 has 7 MA's), (50, 3064), (54, 3079), (64, 3106), (67, 3112), (73, 3157), (75, 3169), (85, 3220), (86, 3223), (92, 3253), (99, 3295),

Gene: JayJay_9 Start: 2506, Stop: 2949, Start Num: 36
Candidate Starts for JayJay_9:
(12, 2389), (16, 2419), (22, 2446), (31, 2482), (Start: 36 @2506 has 7 MA's), (50, 2593), (54, 2608), (64, 2635), (67, 2641), (73, 2686), (75, 2698), (85, 2749), (86, 2752), (92, 2782), (99, 2824),

Gene: Jeon_63 Start: 48868, Stop: 49173, Start Num: 38
Candidate Starts for Jeon_63:
(8, 48709), (Start: 38 @48868 has 33 MA's), (Start: 43 @48880 has 2 MA's), (50, 48943), (54, 48958), (64, 48985), (67, 48991), (74, 49039), (96, 49153),

Gene: JigglyPuff_8 Start: 2522, Stop: 2965, Start Num: 36
Candidate Starts for JigglyPuff_8:
(12, 2405), (16, 2435), (22, 2462), (31, 2498), (Start: 36 @2522 has 7 MA's), (50, 2609), (54, 2624), (64, 2651), (67, 2657), (73, 2702), (75, 2714), (85, 2765), (86, 2768), (92, 2798), (99, 2840),

Gene: Kamryn_7 Start: 2148, Stop: 2579, Start Num: 38
Candidate Starts for Kamryn_7:
(21, 2091), (Start: 38 @2148 has 33 MA's), (50, 2223), (54, 2238), (64, 2265), (67, 2271), (73, 2316), (75, 2328), (85, 2379), (86, 2382), (92, 2412), (99, 2454),

Gene: KashFlow_67 Start: 45630, Stop: 45118, Start Num: 35
Candidate Starts for KashFlow_67:
(Start: 35 @45630 has 23 MA's), (46, 45588), (73, 45438), (75, 45426), (83, 45384), (100, 45282), (112, 45138),

Gene: Kenuha5_78 Start: 49646, Stop: 50158, Start Num: 35
Candidate Starts for Kenuha5_78:
(Start: 35 @49646 has 23 MA's), (75, 49850), (83, 49892), (100, 49994), (112, 50138),

Gene: Kersh_90 Start: 52725, Stop: 53210, Start Num: 38
Candidate Starts for Kersh_90:
(14, 52599), (33, 52695), (Start: 38 @52725 has 33 MA's), (Start: 43 @52737 has 2 MA's), (50, 52800), (54, 52815), (64, 52842), (67, 52848), (73, 52893), (75, 52905), (85, 52956), (86, 52959), (92, 52989),

(99, 53031), (109, 53157),

Gene: Koella_77 Start: 46451, Stop: 46915, Start Num: 35
Candidate Starts for Koella_77:
(Start: 35 @46451 has 23 MA's), (41, 46460), (58, 46562), (61, 46571), (73, 46643), (75, 46655), (83, 46697), (100, 46799),

Gene: Lethe_7 Start: 2050, Stop: 2481, Start Num: 38
Candidate Starts for Lethe_7:
(1, 1606), (2, 1708), (3, 1711), (4, 1717), (5, 1726), (9, 1906), (17, 1969), (Start: 38 @2050 has 33 MA's), (50, 2125), (54, 2140), (64, 2167), (67, 2173), (73, 2218), (75, 2230), (85, 2281), (86, 2284), (92, 2314), (99, 2356),

Gene: LilSpotty_71 Start: 43082, Stop: 43513, Start Num: 38
Candidate Starts for LilSpotty_71:
(Start: 19 @42992 has 2 MA's), (Start: 25 @43028 has 1 MA's), (Start: 38 @43082 has 33 MA's), (46, 43124), (77, 43286), (90, 43349), (103, 43466),

Gene: LinStu_9 Start: 3505, Stop: 3948, Start Num: 36
Candidate Starts for LinStu_9:
(12, 3388), (16, 3418), (22, 3445), (31, 3481), (Start: 36 @3505 has 7 MA's), (50, 3592), (54, 3607), (64, 3634), (67, 3640), (73, 3685), (75, 3697), (85, 3748), (86, 3751), (92, 3781), (99, 3823),

Gene: LolaVinca_10 Start: 2977, Stop: 3399, Start Num: 36
Candidate Starts for LolaVinca_10:
(12, 2860), (16, 2890), (22, 2917), (31, 2953), (Start: 36 @2977 has 7 MA's), (50, 3064), (54, 3079), (64, 3106), (67, 3112), (73, 3157), (75, 3169), (85, 3220), (86, 3223), (92, 3253), (99, 3295), (102, 3334),

Gene: LordLeafolot_10 Start: 2977, Stop: 3420, Start Num: 36
Candidate Starts for LordLeafolot_10:
(12, 2860), (16, 2890), (22, 2917), (31, 2953), (Start: 36 @2977 has 7 MA's), (50, 3064), (54, 3079), (64, 3106), (67, 3112), (73, 3157), (75, 3169), (85, 3220), (86, 3223), (92, 3253), (99, 3295),

Gene: Marshmallow_42 Start: 35818, Stop: 35342, Start Num: 43
Candidate Starts for Marshmallow_42:
(Start: 35 @35830 has 23 MA's), (Start: 43 @35818 has 2 MA's), (51, 35755), (57, 35740), (63, 35713), (68, 35707), (73, 35662), (75, 35650), (83, 35608), (100, 35506), (112, 35362),

Gene: Melville_59 Start: 36268, Stop: 36615, Start Num: 38
Candidate Starts for Melville_59:
(Start: 19 @36178 has 2 MA's), (Start: 25 @36214 has 1 MA's), (Start: 38 @36268 has 33 MA's), (46, 36310), (48, 36331), (67, 36382), (90, 36511), (98, 36553),

Gene: Mikro_7 Start: 3147, Stop: 3578, Start Num: 38
Candidate Starts for Mikro_7:
(21, 3090), (Start: 38 @3147 has 33 MA's), (50, 3222), (54, 3237), (64, 3264), (67, 3270), (73, 3315), (75, 3327), (85, 3378), (86, 3381), (92, 3411), (99, 3453),

Gene: MilleniumForce_53 Start: 38559, Stop: 38825, Start Num: 39
Candidate Starts for MilleniumForce_53:
(Start: 39 @38559 has 3 MA's), (Start: 40 @38562 has 1 MA's), (44, 38589), (47, 38616), (56, 38640),

Gene: MoMoMixon_7 Start: 2383, Stop: 2814, Start Num: 38
Candidate Starts for MoMoMixon_7:
(28, 2347), (Start: 38 @2383 has 33 MA's), (50, 2458), (54, 2473), (64, 2500), (67, 2506), (73, 2551), (75, 2563), (85, 2614), (86, 2617), (92, 2647), (99, 2689),

Gene: Moonbeam_89 Start: 51150, Stop: 51629, Start Num: 40
Candidate Starts for Moonbeam_89:
(Start: 40 @51150 has 1 MA's), (Start: 42 @51153 has 1 MA's), (Start: 52 @51222 has 8 MA's), (54, 51234), (64, 51261), (67, 51267), (73, 51312), (75, 51324), (85, 51375), (86, 51378), (92, 51408), (99, 51450), (109, 51576),

Gene: Moose_61 Start: 40140, Stop: 39913, Start Num: 52
Candidate Starts for Moose_61:
(Start: 52 @40140 has 8 MA's), (66, 40092), (75, 40032),

Gene: Myrale_43 Start: 35695, Stop: 35207, Start Num: 35
Candidate Starts for Myrale_43:
(Start: 35 @35695 has 23 MA's), (Start: 43 @35683 has 2 MA's), (51, 35620), (57, 35605), (63, 35578), (68, 35572), (73, 35527), (75, 35515), (83, 35473), (100, 35371), (112, 35227),

Gene: Nekros_71 Start: 48970, Stop: 48458, Start Num: 35
Candidate Starts for Nekros_71:
(Start: 35 @48970 has 23 MA's), (75, 48766), (83, 48724), (100, 48622), (112, 48478),

Gene: Nidhogg_7 Start: 2383, Stop: 2814, Start Num: 38
Candidate Starts for Nidhogg_7:
(27, 2347), (Start: 38 @2383 has 33 MA's), (50, 2458), (54, 2473), (64, 2500), (67, 2506), (73, 2551), (75, 2563), (85, 2614), (86, 2617), (92, 2647), (99, 2689),

Gene: NoodleTree_7 Start: 2148, Stop: 2579, Start Num: 38
Candidate Starts for NoodleTree_7:
(21, 2091), (Start: 38 @2148 has 33 MA's), (50, 2223), (54, 2238), (64, 2265), (67, 2271), (73, 2316), (75, 2328), (85, 2379), (86, 2382), (92, 2412), (99, 2454),

Gene: NormanBulbieJr_83 Start: 50465, Stop: 50929, Start Num: 35
Candidate Starts for NormanBulbieJr_83:
(Start: 35 @50465 has 23 MA's), (41, 50474), (58, 50576), (61, 50585), (73, 50657), (75, 50669), (83, 50711), (100, 50813),

Gene: NuevoMundo_9 Start: 2841, Stop: 3272, Start Num: 38
Candidate Starts for NuevoMundo_9:
(13, 2736), (16, 2757), (18, 2763), (Start: 38 @2841 has 33 MA's), (50, 2916), (54, 2931), (64, 2958), (67, 2964), (73, 3009), (75, 3021), (85, 3072), (86, 3075), (92, 3105), (99, 3147),

Gene: Ogopogo_51 Start: 36143, Stop: 36514, Start Num: 25
Candidate Starts for Ogopogo_51:
(Start: 25 @36143 has 1 MA's), (31, 36155), (34, 36176), (37, 36182), (Start: 38 @36191 has 33 MA's), (74, 36362), (93, 36458), (94, 36467),

Gene: Pepe_58 Start: 39571, Stop: 39344, Start Num: 52
Candidate Starts for Pepe_58:
(Start: 52 @39571 has 8 MA's), (66, 39523), (75, 39463), (76, 39460),

Gene: Phaja_41 Start: 35395, Stop: 34907, Start Num: 35
Candidate Starts for Phaja_41:
(Start: 35 @35395 has 23 MA's), (Start: 43 @35383 has 2 MA's), (51, 35320), (57, 35305), (63, 35278), (68, 35272), (73, 35227), (75, 35215), (83, 35173), (100, 35071), (112, 34927),

Gene: Pier_10 Start: 2844, Stop: 3275, Start Num: 38
Candidate Starts for Pier_10:
(13, 2739), (16, 2760), (18, 2766), (Start: 38 @2844 has 33 MA's), (50, 2919), (54, 2934), (64, 2961), (67, 2967), (73, 3012), (75, 3024), (85, 3075), (86, 3078), (92, 3108), (99, 3150),

Gene: Pinkcreek_11 Start: 4628, Stop: 5008, Start Num: 38
Candidate Starts for Pinkcreek_11:
(26, 4592), (Start: 38 @4628 has 33 MA's), (61, 4763), (68, 4787), (71, 4811), (74, 4844), (85, 4904), (86, 4907), (92, 4937),

Gene: Pio_8 Start: 2537, Stop: 2968, Start Num: 38
Candidate Starts for Pio_8:
(28, 2501), (Start: 38 @2537 has 33 MA's), (50, 2612), (54, 2627), (64, 2654), (67, 2660), (73, 2705), (75, 2717), (85, 2768), (86, 2771), (92, 2801), (99, 2843),

Gene: Pollywog_88 Start: 51599, Stop: 52084, Start Num: 38
Candidate Starts for Pollywog_88:
(30, 51560), (Start: 38 @51599 has 33 MA's), (Start: 43 @51611 has 2 MA's), (50, 51674), (54, 51689), (64, 51716), (67, 51722), (73, 51767), (75, 51779), (85, 51830), (86, 51833), (92, 51863), (99, 51905), (109, 52031),

Gene: Priscilla_85 Start: 50563, Stop: 51027, Start Num: 35
Candidate Starts for Priscilla_85:
(Start: 35 @50563 has 23 MA's), (41, 50572), (58, 50674), (61, 50683), (73, 50755), (75, 50767), (83, 50809), (100, 50911),

Gene: Rialto_92 Start: 51249, Stop: 51725, Start Num: 42
Candidate Starts for Rialto_92:
(Start: 40 @51246 has 1 MA's), (Start: 42 @51249 has 1 MA's), (Start: 52 @51318 has 8 MA's), (54, 51330), (64, 51357), (67, 51363), (73, 51408), (75, 51420), (85, 51471), (86, 51474), (92, 51504), (99, 51546), (109, 51672),

Gene: Royals2015_53 Start: 36891, Stop: 37130, Start Num: 38
Candidate Starts for Royals2015_53:
(Start: 38 @36891 has 33 MA's), (44, 36924), (47, 36951), (56, 36975), (93, 37113),

Gene: Ryadel_104 Start: 63381, Stop: 62932, Start Num: 35
Candidate Starts for Ryadel_104:
(24, 63432), (Start: 35 @63381 has 23 MA's), (Start: 43 @63369 has 2 MA's), (Start: 52 @63303 has 8 MA's), (65, 63240), (70, 63216), (81, 63132), (84, 63120), (91, 63087), (108, 62937),

Gene: Sabbb_90 Start: 48794, Stop: 49228, Start Num: 38
Candidate Starts for Sabbb_90:
(30, 48755), (Start: 38 @48794 has 33 MA's), (Start: 43 @48806 has 2 MA's), (50, 48869), (54, 48884), (64, 48911), (67, 48917), (73, 48962), (75, 48974), (85, 49025), (86, 49028), (92, 49058), (99, 49100),

Gene: Sauce_7 Start: 2387, Stop: 2818, Start Num: 38
Candidate Starts for Sauce_7:

(28, 2351), (Start: 38 @2387 has 33 MA's), (50, 2462), (54, 2477), (64, 2504), (67, 2510), (73, 2555), (75, 2567), (85, 2618), (86, 2621), (92, 2651), (99, 2693),

Gene: Seanderson_62 Start: 42352, Stop: 42125, Start Num: 52
Candidate Starts for Seanderson_62:
(Start: 52 @42352 has 8 MA's), (66, 42304), (75, 42244),

Gene: Sebata_9 Start: 3505, Stop: 3948, Start Num: 36
Candidate Starts for Sebata_9:
(12, 3388), (16, 3418), (22, 3445), (31, 3481), (Start: 36 @3505 has 7 MA's), (50, 3592), (54, 3607), (64, 3634), (67, 3640), (73, 3685), (75, 3697), (85, 3748), (86, 3751), (92, 3781), (99, 3823),

Gene: Shaboozey_65 Start: 44675, Stop: 44163, Start Num: 35
Candidate Starts for Shaboozey_65:
(Start: 35 @44675 has 23 MA's), (46, 44633), (75, 44471), (83, 44429), (100, 44327), (112, 44183),

Gene: ShamWow_43 Start: 35832, Stop: 35344, Start Num: 35
Candidate Starts for ShamWow_43:
(Start: 35 @35832 has 23 MA's), (Start: 43 @35820 has 2 MA's), (51, 35757), (57, 35742), (63, 35715), (68, 35709), (73, 35664), (75, 35652), (83, 35610), (100, 35508), (112, 35364),

Gene: Shauna1_82 Start: 49932, Stop: 50444, Start Num: 35
Candidate Starts for Shauna1_82:
(Start: 35 @49932 has 23 MA's), (73, 50124), (75, 50136), (83, 50178), (100, 50280), (112, 50424),

Gene: Silvafighter_56 Start: 36170, Stop: 36607, Start Num: 19
Candidate Starts for Silvafighter_56:
(Start: 19 @36170 has 2 MA's), (Start: 25 @36206 has 1 MA's), (Start: 38 @36260 has 33 MA's), (46, 36302), (48, 36323), (67, 36374), (90, 36503), (98, 36545),

Gene: SimranZ1_81 Start: 48125, Stop: 48592, Start Num: 38
Candidate Starts for SimranZ1_81:
(30, 48086), (Start: 38 @48125 has 33 MA's), (50, 48200), (54, 48215), (64, 48242), (67, 48248), (73, 48293), (75, 48305), (85, 48356), (86, 48359), (92, 48389), (106, 48503), (110, 48545),

Gene: SkiPole_67 Start: 41615, Stop: 41388, Start Num: 52
Candidate Starts for SkiPole_67:
(Start: 52 @41615 has 8 MA's), (66, 41567), (75, 41507), (76, 41504),

Gene: Sparkdehlily_95 Start: 49514, Stop: 49996, Start Num: 39
Candidate Starts for Sparkdehlily_95:
(Start: 39 @49514 has 3 MA's), (Start: 40 @49517 has 1 MA's), (Start: 42 @49520 has 1 MA's), (Start: 52 @49589 has 8 MA's), (54, 49601), (64, 49628), (67, 49634), (73, 49679), (75, 49691), (85, 49742), (86, 49745), (92, 49775), (99, 49817), (109, 49943),

Gene: Specks_10 Start: 2977, Stop: 3420, Start Num: 36
Candidate Starts for Specks_10:
(12, 2860), (16, 2890), (22, 2917), (31, 2953), (Start: 36 @2977 has 7 MA's), (50, 3064), (54, 3079), (64, 3106), (67, 3112), (73, 3157), (75, 3169), (85, 3220), (86, 3223), (92, 3253), (99, 3295),

Gene: Spud_8 Start: 2537, Stop: 2968, Start Num: 38
Candidate Starts for Spud_8:

(28, 2501), (Start: 38 @2537 has 33 MA's), (50, 2612), (54, 2627), (64, 2654), (67, 2660), (73, 2705), (75, 2717), (85, 2768), (86, 2771), (92, 2801), (99, 2843),

Gene: StellaBean_41 Start: 35156, Stop: 34668, Start Num: 35
Candidate Starts for StellaBean_41:
(Start: 35 @35156 has 23 MA's), (Start: 43 @35144 has 2 MA's), (51, 35081), (57, 35066), (63, 35039), (68, 35033), (73, 34988), (75, 34976), (83, 34934), (100, 34832), (112, 34688),

Gene: StephanieG_9 Start: 2844, Stop: 3275, Start Num: 38
Candidate Starts for StephanieG_9:
(13, 2739), (16, 2760), (18, 2766), (Start: 38 @2844 has 33 MA's), (50, 2919), (54, 2934), (64, 2961), (67, 2967), (73, 3012), (75, 3024), (85, 3075), (86, 3078), (92, 3108), (99, 3150),

Gene: Sunshine924_64 Start: 40630, Stop: 40100, Start Num: 32
Candidate Starts for Sunshine924_64:
(Start: 32 @40630 has 2 MA's), (61, 40477), (68, 40453), (71, 40429), (74, 40396), (85, 40336), (86, 40333), (92, 40303), (104, 40189), (107, 40147), (111, 40120),

Gene: SuperGrey_83 Start: 51298, Stop: 51810, Start Num: 35
Candidate Starts for SuperGrey_83:
(Start: 35 @51298 has 23 MA's), (46, 51340), (75, 51502), (83, 51544), (100, 51646), (112, 51790),

Gene: SwissCheese_63 Start: 40640, Stop: 40413, Start Num: 52
Candidate Starts for SwissCheese_63:
(Start: 52 @40640 has 8 MA's), (66, 40592), (75, 40532),

Gene: TDanisky_96 Start: 49514, Stop: 49996, Start Num: 39
Candidate Starts for TDanisky_96:
(Start: 39 @49514 has 3 MA's), (Start: 40 @49517 has 1 MA's), (Start: 42 @49520 has 1 MA's), (Start: 52 @49589 has 8 MA's), (54, 49601), (64, 49628), (67, 49634), (73, 49679), (75, 49691), (85, 49742), (86, 49745), (92, 49775), (99, 49817), (109, 49943),

Gene: Tainan_10 Start: 2977, Stop: 3420, Start Num: 36
Candidate Starts for Tainan_10:
(12, 2860), (16, 2890), (22, 2917), (31, 2953), (Start: 36 @2977 has 7 MA's), (50, 3064), (54, 3079), (64, 3106), (67, 3112), (73, 3157), (75, 3169), (85, 3220), (86, 3223), (92, 3253), (99, 3295),

Gene: Tonenili_21 Start: 6415, Stop: 6846, Start Num: 38
Candidate Starts for Tonenili_21:
(6, 6136), (10, 6280), (11, 6283), (Start: 38 @6415 has 33 MA's), (Start: 43 @6427 has 2 MA's), (59, 6535), (61, 6553), (68, 6577), (71, 6601), (73, 6631), (75, 6643), (88, 6715), (97, 6769),

Gene: Toto_42 Start: 35820, Stop: 35344, Start Num: 43
Candidate Starts for Toto_42:
(Start: 35 @35832 has 23 MA's), (Start: 43 @35820 has 2 MA's), (51, 35757), (57, 35742), (63, 35715), (68, 35709), (73, 35664), (75, 35652), (83, 35610), (100, 35508), (112, 35364),

Gene: Tuco_44 Start: 36340, Stop: 35852, Start Num: 35
Candidate Starts for Tuco_44:
(Start: 35 @36340 has 23 MA's), (Start: 43 @36328 has 2 MA's), (51, 36265), (57, 36250), (63, 36223), (68, 36217), (73, 36172), (75, 36160), (83, 36118), (100, 36016), (112, 35872),

Gene: Tyke_9 Start: 2817, Stop: 3251, Start Num: 38

Candidate Starts for Tyke_9:
(21, 2760), (Start: 38 @2817 has 33 MA's), (50, 2892), (54, 2907), (64, 2934), (67, 2940), (73, 2985), (75, 2997), (85, 3048), (86, 3051), (92, 3081), (99, 3123),