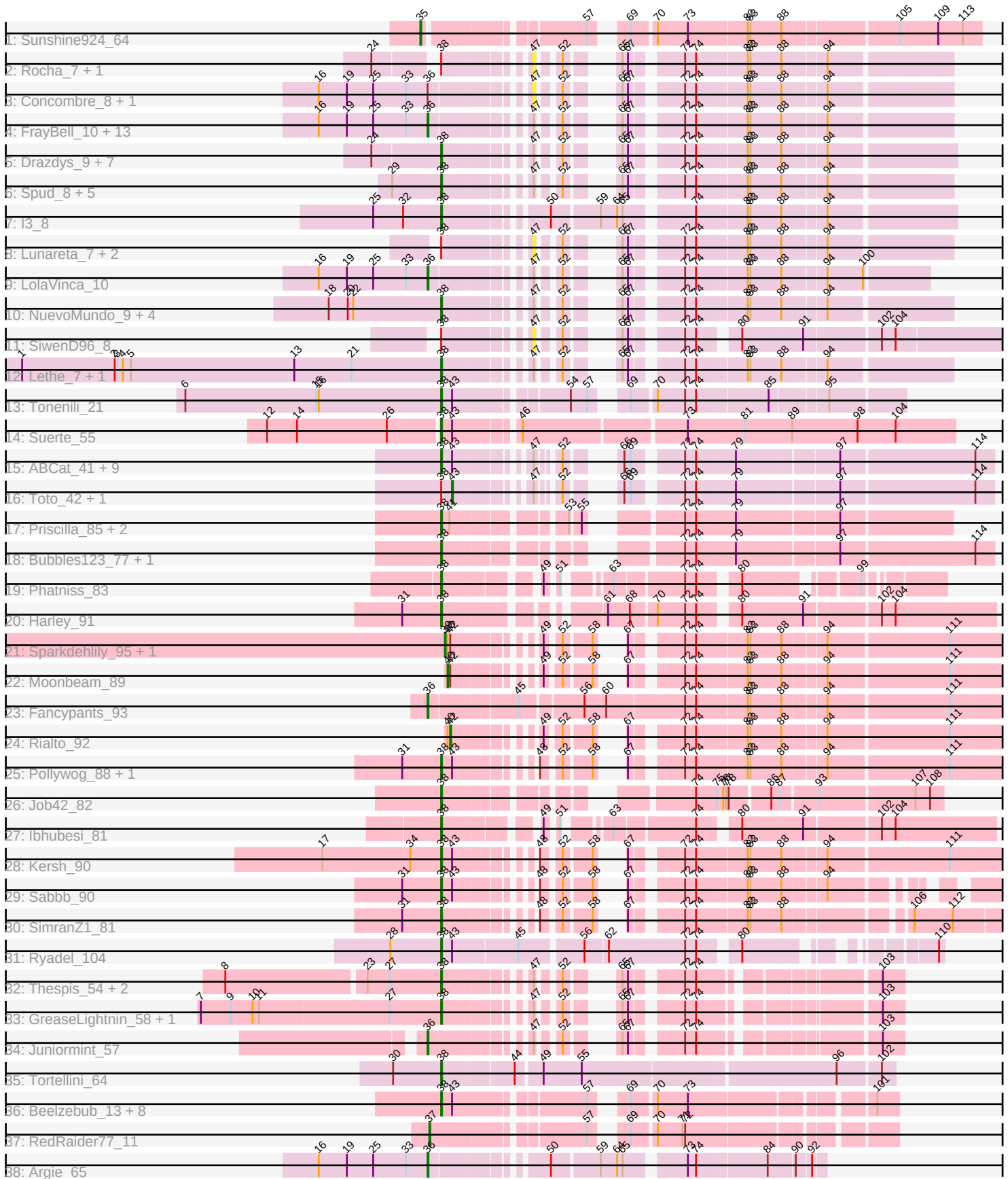


Pham 330697



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 330697 Report

This analysis was run 09/05/26 on database version 662.

Pham number 330697 has 98 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Sunshine924_64
- Track 2 : Rocha_7, LookingGlass_7
- Track 3 : Concombre_8, Demodog_7
- Track 4 : FrayBell_10, JayJay_9, GoldenSnow_10, Tainan_10, Sebata_9, Specks_10, InterFolia_10, Pupusa_10, Maguvora_11, Puhon_10, JigglyPuff_8, PharkleMinkus_10, LordLeafolot_10, LinStu_9
- Track 5 : Drazdys_9, Kamryn_7, Jezreel_7, Tyke_9, Mikro_7, Bxz1_7, DTDevon_9, NoodleTree_7
- Track 6 : Spud_8, Nidhogg_7, Sauce_7, Pio_8, MoMoMixon_7, Naval22_8
- Track 7 : l3_8
- Track 8 : Lunareta_7, Maturis_8, Montpel_7
- Track 9 : LolaVinca_10
- Track 10 : NuevoMundo_9, StephanieG_9, Pier_10, Astraea_9, Dandelion_10
- Track 11 : SiwenD96_8
- Track 12 : Lethe_7, Bigswole_6
- Track 13 : Tonenili_21
- Track 14 : Suerte_55
- Track 15 : ABCat_41, Inca_40, BilboSwaggins_42, IHOP_41, Tuco_44, Myrale_43, ShamWow_43, StellaBean_41, Phaja_41, CrystalP_43
- Track 16 : Toto_42, Marshmallow_42
- Track 17 : Priscilla_85, NormanBulbieJr_83, Koella_77
- Track 18 : Bubbles123_77, Shauna1_82
- Track 19 : Phatniss_83
- Track 20 : Harley_91
- Track 21 : Sparkdehlily_95, TDanisky_96
- Track 22 : Moonbeam_89
- Track 23 : Fancypants_93
- Track 24 : Rialto_92
- Track 25 : Pollywog_88, Rearden_72
- Track 26 : Job42_82
- Track 27 : lbhubesi_81
- Track 28 : Kersh_90
- Track 29 : Sabbb_90
- Track 30 : SimranZ1_81
- Track 31 : Ryadel_104
- Track 32 : Thespis_54, Brusacoram_54, Atcoo_54
- Track 33 : GreaseLightnin_58, StevieRay_57

- Track 34 : Juniormint_57
- Track 35 : Tortellini_64
- Track 36 : Beelzebub_13, FeliMaine_11, Lilbit_11, LittleLaf_10, Corazon_10, Pringar_10, Clarkson_11, JoieB_11, Huphlepuuff_11
- Track 37 : RedRaider77_11
- Track 38 : Argie_65

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 63 of the 83 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABCat_41, Astraea_9, Atcoo_54, Beelzebub_13, Bigswole_6, BilboSwaggins_42, Brusacoram_54, Bubbles123_77, Bxz1_7, Clarkson_11, Corazon_10, CrystalP_43, DTDevon_9, Dandelion_10, Drazdys_9, FeliMaine_11, GreaseLightnin_58, Harley_91, Huphlepuuff_11, I3_8, IHOP_41, Ibhubesi_81, Inca_40, Jezreel_7, Job42_82, JoieB_11, Kamryn_7, Kersh_90, Koella_77, Lethe_7, Lilbit_11, LittleLaf_10, Mikro_7, MoMoMixon_7, Myrale_43, Naval22_8, Nidhogg_7, NoodleTree_7, NormanBulbieJr_83, NuevoMundo_9, Phaja_41, Phatniss_83, Pier_10, Pio_8, Pollywog_88, Pringar_10, Priscilla_85, Rearden_72, Ryadel_104, Sabbb_90, Sauce_7, ShamWow_43, Shauna1_82, SimranZ1_81, Spud_8, StellaBean_41, StephanieG_9, StevieRay_57, Suerte_55, Thespis_54, Tonenili_21, Tortellini_64, Tuco_44, Tyke_9,

Genes that have the "Most Annotated" start but do not call it:

- LookingGlass_7, Lunareta_7, Marshmallow_42, Maturis_8, Montpel_7, Rocha_7, SiwenD96_8, Toto_42,

Genes that do not have the "Most Annotated" start:

- Argie_65, Concombre_8, Demodog_7, Fancypants_93, FrayBell_10, GoldenSnow_10, InterFolia_10, JayJay_9, JigglyPuff_8, Juniormint_57, LinStu_9, LolaVince_10, LordLeafolot_10, Maguvora_11, Moonbeam_89, PharkleMinkus_10, Puhon_10, Pupusa_10, RedRaider77_11, Rialto_92, Sebata_9, Sparkdehlily_95, Specks_10, Sunshine924_64, TDanisky_96, Tainan_10,

Summary by start number:

Start 35:

- Found in 1 of 98 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 83
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sunshine924_64 (A1),

Start 36:

- Found in 20 of 98 (20.4%) of genes in pham
- Manual Annotations of this start: 12 of 83
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Argie_65 (W), Fancypants_93 (F1), FrayBell_10 (C1), GoldenSnow_10 (C1), InterFolia_10 (C1), JayJay_9 (C1),

JigglyPuff_8 (C1), Juniormint_57 (P1), LinStu_9 (C1), LolaVinca_10 (C1), LordLeafolot_10 (C1), Maguvora_11 (C1), PharkleMinkus_10 (C1), Puhon_10 (C1), Pupusa_10 (C1), Sebata_9 (C1), Specks_10 (C1), Tainan_10 (C1),

Start 37:

- Found in 1 of 98 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 83
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RedRaider77_11 (S),

Start 38:

- Found in 72 of 98 (73.5%) of genes in pham
- Manual Annotations of this start: 63 of 83
- Called 88.9% of time when present
- Phage (with cluster) where this start called: ABCat_41 (E), Astraea_9 (C1), Atcoo_54 (P1), Beelzebub_13 (S), Bigswole_6 (C1), BilboSwaggins_42 (E), Brusacoram_54 (P1), Bubbles123_77 (F1), Bxz1_7 (C1), Clarkson_11 (S), Corazon_10 (S), CrystalP_43 (E), DTDevon_9 (C1), Dandelion_10 (C1), Drazdys_9 (C1), FeliMaine_11 (S), GreaseLightnin_58 (P1), Harley_91 (F1), Huphlepuuff_11 (S), I3_8 (C1), IHOP_41 (E), Ibhubesi_81 (F1), Inca_40 (E), Jezreel_7 (C1), Job42_82 (F1), JoieB_11 (S), Kamryn_7 (C1), Kersh_90 (F1), Koella_77 (F1), Lethe_7 (C1), Lilbit_11 (S), LittleLaf_10 (S), Mikro_7 (C1), MoMoMixon_7 (C1), Myrale_43 (E), Naval22_8 (C1), Nidhogg_7 (C1), NoodleTree_7 (C1), NormanBulbieJr_83 (F1), NuevoMundo_9 (C1), Phaja_41 (E), Phatniss_83 (F1), Pier_10 (C1), Pio_8 (C1), Pollywog_88 (F1), Pringar_10 (S), Priscilla_85 (F1), Rearden_72 (J), Ryadel_104 (O), Sabbb_90 (F1), Sauce_7 (C1), ShamWow_43 (E), Shauna1_82 (F1), SimranZ1_81 (F1), Spud_8 (C1), StellaBean_41 (E), StephanieG_9 (C1), StevieRay_57 (P1), Suerte_55 (CZ4), Thespis_54 (P1), Tonerili_21 (C1), Tortellini_64 (P2), Tuco_44 (E), Tyke_9 (C1),

Start 39:

- Found in 2 of 98 (2.0%) of genes in pham
- Manual Annotations of this start: 2 of 83
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sparkdehlily_95 (F1), TDanisky_96 (F1),

Start 40:

- Found in 4 of 98 (4.1%) of genes in pham
- Manual Annotations of this start: 1 of 83
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Moonbeam_89 (F1),

Start 42:

- Found in 4 of 98 (4.1%) of genes in pham
- Manual Annotations of this start: 1 of 83
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Rialto_92 (F1),

Start 43:

- Found in 28 of 98 (28.6%) of genes in pham
- Manual Annotations of this start: 2 of 83
- Called 7.1% of time when present
- Phage (with cluster) where this start called: Marshmallow_42 (E), Toto_42 (E),

Start 47:

- Found in 62 of 98 (63.3%) of genes in pham
- No Manual Annotations of this start.
- Called 12.9% of time when present
- Phage (with cluster) where this start called: Concombre_8 (C1), Demodog_7 (C1), LookingGlass_7 (C1), Lunareta_7 (C1), Maturis_8 (C1), Montpel_7 (C1), Rocha_7 (C1), SiwenD96_8 (C1),

Summary by clusters:

There are 11 clusters represented in this pham: P2, F1, P1, E, J, O, A1, S, CZ4, W, C1,

Info for manual annotations of cluster A1:

- Start number 35 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster C1:

- Start number 36 was manually annotated 9 times for cluster C1.
- Start number 38 was manually annotated 23 times for cluster C1.

Info for manual annotations of cluster CZ4:

- Start number 38 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster E:

- Start number 38 was manually annotated 10 times for cluster E.
- Start number 43 was manually annotated 2 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 36 was manually annotated 1 time for cluster F1.
- Start number 38 was manually annotated 13 times for cluster F1.
- Start number 39 was manually annotated 2 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 O:

- Start number 38 was manually annotated 1 time for cluster O.

Info for manual annotations of cluster P1:

- Start number 36 was manually annotated 1 time for cluster P1.
- Start number 38 was manually annotated 5 times for cluster P1.

Info for manual annotations of cluster P2:

- Start number 38 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster S:

- Start number 37 was manually annotated 1 time for cluster S.
- Start number 38 was manually annotated 9 times for cluster S.

Info for manual annotations of cluster W:

- Start number 36 was manually annotated 1 time for cluster W.

Gene Information:

Gene: ABCat_41 Start: 35824, Stop: 35336, Start Num: 38

Candidate Starts for ABCat_41:

(Start: 38 @35824 has 63 MA's), (Start: 43 @35812 has 2 MA's), (47, 35749), (52, 35734), (66, 35707), (69, 35701), (72, 35656), (74, 35644), (79, 35602), (97, 35500), (114, 35356),

Gene: Argie_65 Start: 48661, Stop: 49026, Start Num: 36

Candidate Starts for Argie_65:

(16, 48544), (19, 48574), (25, 48601), (33, 48637), (Start: 36 @48661 has 12 MA's), (50, 48766), (59, 48814), (64, 48832), (65, 48838), (73, 48895), (74, 48904), (84, 48976), (90, 49000), (92, 49015),

Gene: Astraea_9 Start: 2499, Stop: 2930, Start Num: 38

Candidate Starts for Astraea_9:

(18, 2394), (20, 2415), (22, 2421), (Start: 38 @2499 has 63 MA's), (47, 2574), (52, 2589), (65, 2616), (67, 2622), (72, 2667), (74, 2679), (82, 2730), (83, 2733), (88, 2763), (94, 2805),

Gene: Atcoo_54 Start: 36879, Stop: 37241, Start Num: 38

Candidate Starts for Atcoo_54:

(8, 36651), (23, 36798), (27, 36822), (Start: 38 @36879 has 63 MA's), (47, 36954), (52, 36969), (65, 36996), (67, 37002), (72, 37047), (74, 37059), (103, 37218),

Gene: Beelzebub_13 Start: 3753, Stop: 4160, Start Num: 38

Candidate Starts for Beelzebub_13:

(Start: 38 @3753 has 63 MA's), (Start: 43 @3765 has 2 MA's), (57, 3891), (69, 3915), (70, 3939), (73, 3972), (101, 4137),

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), (13, 1906), (21, 1969), (Start: 38 @2050 has 63 MA's), (47, 2125), (52, 2140), (65, 2167), (67, 2173), (72, 2218), (74, 2230), (82, 2281), (83, 2284), (88, 2314), (94, 2356),

Gene: BilboSwaggins_42 Start: 35832, Stop: 35344, Start Num: 38

Candidate Starts for BilboSwaggins_42:

(Start: 38 @35832 has 63 MA's), (Start: 43 @35820 has 2 MA's), (47, 35757), (52, 35742), (66, 35715), (69, 35709), (72, 35664), (74, 35652), (79, 35610), (97, 35508), (114, 35364),

Gene: Brusacoram_54 Start: 36385, Stop: 36747, Start Num: 38

Candidate Starts for Brusacoram_54:

(8, 36157), (23, 36304), (27, 36328), (Start: 38 @36385 has 63 MA's), (47, 36460), (52, 36475), (65, 36502), (67, 36508), (72, 36553), (74, 36565), (103, 36724),

Gene: Bubbles123_77 Start: 48885, Stop: 49397, Start Num: 38

Candidate Starts for Bubbles123_77:

(Start: 38 @48885 has 63 MA's), (72, 49077), (74, 49089), (79, 49131), (97, 49233), (114, 49377),

Gene: Bxz1_7 Start: 2148, Stop: 2579, Start Num: 38

Candidate Starts for Bxz1_7:

(24, 2091), (Start: 38 @2148 has 63 MA's), (47, 2223), (52, 2238), (65, 2265), (67, 2271), (72, 2316), (74, 2328), (82, 2379), (83, 2382), (88, 2412), (94, 2454),

Gene: Clarkson_11 Start: 3529, Stop: 3936, Start Num: 38

Candidate Starts for Clarkson_11:

(Start: 38 @3529 has 63 MA's), (Start: 43 @3541 has 2 MA's), (57, 3667), (69, 3691), (70, 3715), (73, 3748), (101, 3913),

Gene: Concombre_8 Start: 2242, Stop: 2598, Start Num: 47

Candidate Starts for Concombre_8:

(16, 2038), (19, 2068), (25, 2095), (33, 2131), (Start: 36 @2155 has 12 MA's), (47, 2242), (52, 2257), (65, 2284), (67, 2290), (72, 2335), (74, 2347), (82, 2398), (83, 2401), (88, 2431), (94, 2473),

Gene: Corazon_10 Start: 3482, Stop: 3889, Start Num: 38

Candidate Starts for Corazon_10:

(Start: 38 @3482 has 63 MA's), (Start: 43 @3494 has 2 MA's), (57, 3620), (69, 3644), (70, 3668), (73, 3701), (101, 3866),

Gene: CrystalP_43 Start: 35832, Stop: 35344, Start Num: 38

Candidate Starts for CrystalP_43:

(Start: 38 @35832 has 63 MA's), (Start: 43 @35820 has 2 MA's), (47, 35757), (52, 35742), (66, 35715), (69, 35709), (72, 35664), (74, 35652), (79, 35610), (97, 35508), (114, 35364),

Gene: DTDevon_9 Start: 2817, Stop: 3251, Start Num: 38

Candidate Starts for DTDevon_9:

(24, 2760), (Start: 38 @2817 has 63 MA's), (47, 2892), (52, 2907), (65, 2934), (67, 2940), (72, 2985), (74, 2997), (82, 3048), (83, 3051), (88, 3081), (94, 3123),

Gene: Dandelion_10 Start: 3168, Stop: 3599, Start Num: 38

Candidate Starts for Dandelion_10:

(18, 3063), (20, 3084), (22, 3090), (Start: 38 @3168 has 63 MA's), (47, 3243), (52, 3258), (65, 3285), (67, 3291), (72, 3336), (74, 3348), (82, 3399), (83, 3402), (88, 3432), (94, 3474),

Gene: Demodog_7 Start: 2242, Stop: 2598, Start Num: 47

Candidate Starts for Demodog_7:

(16, 2038), (19, 2068), (25, 2095), (33, 2131), (Start: 36 @2155 has 12 MA's), (47, 2242), (52, 2257), (65, 2284), (67, 2290), (72, 2335), (74, 2347), (82, 2398), (83, 2401), (88, 2431), (94, 2473),

Gene: Drazdys_9 Start: 2817, Stop: 3251, Start Num: 38

Candidate Starts for Drazdys_9:

(24, 2760), (Start: 38 @2817 has 63 MA's), (47, 2892), (52, 2907), (65, 2934), (67, 2940), (72, 2985), (74, 2997), (82, 3048), (83, 3051), (88, 3081), (94, 3123),

Gene: Fancypants_93 Start: 52418, Stop: 52996, Start Num: 36

Candidate Starts for Fancypants_93:

(Start: 36 @52418 has 12 MA's), (45, 52508), (56, 52571), (60, 52595), (72, 52679), (74, 52691), (82, 52742), (83, 52745), (88, 52775), (94, 52817), (111, 52943),

Gene: FeliMaine_11 Start: 3530, Stop: 3937, Start Num: 38

Candidate Starts for FeliMaine_11:

(Start: 38 @3530 has 63 MA's), (Start: 43 @3542 has 2 MA's), (57, 3668), (69, 3692), (70, 3716), (73, 3749), (101, 3914),

Gene: FrayBell_10 Start: 2978, Stop: 3421, Start Num: 36

Candidate Starts for FrayBell_10:

(16, 2861), (19, 2891), (25, 2918), (33, 2954), (Start: 36 @2978 has 12 MA's), (47, 3065), (52, 3080), (65, 3107), (67, 3113), (72, 3158), (74, 3170), (82, 3221), (83, 3224), (88, 3254), (94, 3296),

Gene: GoldenSnow_10 Start: 2977, Stop: 3420, Start Num: 36

Candidate Starts for GoldenSnow_10:

(16, 2860), (19, 2890), (25, 2917), (33, 2953), (Start: 36 @2977 has 12 MA's), (47, 3064), (52, 3079), (65, 3106), (67, 3112), (72, 3157), (74, 3169), (82, 3220), (83, 3223), (88, 3253), (94, 3295),

Gene: GreaseLightnin_58 Start: 38269, Stop: 38631, Start Num: 38

Candidate Starts for GreaseLightnin_58:

(7, 38008), (9, 38041), (10, 38065), (11, 38071), (27, 38212), (Start: 38 @38269 has 63 MA's), (47, 38344), (52, 38359), (65, 38386), (67, 38392), (72, 38437), (74, 38449), (103, 38608),

Gene: Harley_91 Start: 51213, Stop: 51740, Start Num: 38

Candidate Starts for Harley_91:

(31, 51174), (Start: 38 @51213 has 63 MA's), (61, 51351), (68, 51375), (70, 51399), (72, 51429), (74, 51441), (80, 51474), (91, 51537), (102, 51615), (104, 51630),

Gene: Huphlepuuff_11 Start: 3259, Stop: 3666, Start Num: 38

Candidate Starts for Huphlepuuff_11:

(Start: 38 @3259 has 63 MA's), (Start: 43 @3271 has 2 MA's), (57, 3397), (69, 3421), (70, 3445), (73, 3478), (101, 3643),

Gene: I3_8 Start: 2847, Stop: 3332, Start Num: 38

Candidate Starts for I3_8:

(25, 2790), (32, 2823), (Start: 38 @2847 has 63 MA's), (50, 2940), (59, 2988), (64, 3006), (65, 3012), (74, 3078), (82, 3129), (83, 3132), (88, 3162), (94, 3204),

Gene: IHOP_41 Start: 35396, Stop: 34908, Start Num: 38

Candidate Starts for IHOP_41:

(Start: 38 @35396 has 63 MA's), (Start: 43 @35384 has 2 MA's), (47, 35321), (52, 35306), (66, 35279), (69, 35273), (72, 35228), (74, 35216), (79, 35174), (97, 35072), (114, 34928),

Gene: Ibhubesi_81 Start: 47329, Stop: 47838, Start Num: 38

Candidate Starts for Ibhubesi_81:

(Start: 38 @47329 has 63 MA's), (49, 47413), (51, 47422), (63, 47458), (74, 47539), (80, 47572), (91, 47635), (102, 47713), (104, 47728),

Gene: Inca_40 Start: 33921, Stop: 33433, Start Num: 38

Candidate Starts for Inca_40:

(Start: 38 @33921 has 63 MA's), (Start: 43 @33909 has 2 MA's), (47, 33846), (52, 33831), (66, 33804), (69, 33798), (72, 33753), (74, 33741), (79, 33699), (97, 33597), (114, 33453),

Gene: InterFolia_10 Start: 2977, Stop: 3420, Start Num: 36

Candidate Starts for InterFolia_10:

(16, 2860), (19, 2890), (25, 2917), (33, 2953), (Start: 36 @2977 has 12 MA's), (47, 3064), (52, 3079), (65, 3106), (67, 3112), (72, 3157), (74, 3169), (82, 3220), (83, 3223), (88, 3253), (94, 3295),

Gene: JayJay_9 Start: 2506, Stop: 2949, Start Num: 36

Candidate Starts for JayJay_9:

(16, 2389), (19, 2419), (25, 2446), (33, 2482), (Start: 36 @2506 has 12 MA's), (47, 2593), (52, 2608), (65, 2635), (67, 2641), (72, 2686), (74, 2698), (82, 2749), (83, 2752), (88, 2782), (94, 2824),

Gene: Jezreel_7 Start: 2148, Stop: 2579, Start Num: 38

Candidate Starts for Jezreel_7:

(24, 2091), (Start: 38 @2148 has 63 MA's), (47, 2223), (52, 2238), (65, 2265), (67, 2271), (72, 2316), (74, 2328), (82, 2379), (83, 2382), (88, 2412), (94, 2454),

Gene: JigglyPuff_8 Start: 2522, Stop: 2965, Start Num: 36

Candidate Starts for JigglyPuff_8:

(16, 2405), (19, 2435), (25, 2462), (33, 2498), (Start: 36 @2522 has 12 MA's), (47, 2609), (52, 2624), (65, 2651), (67, 2657), (72, 2702), (74, 2714), (82, 2765), (83, 2768), (88, 2798), (94, 2840),

Gene: Job42_82 Start: 51811, Stop: 52257, Start Num: 38

Candidate Starts for Job42_82:

(Start: 38 @51811 has 63 MA's), (74, 52015), (75, 52036), (76, 52042), (77, 52045), (78, 52048), (86, 52087), (87, 52093), (93, 52129), (107, 52228), (108, 52243),

Gene: JoieB_11 Start: 3478, Stop: 3885, Start Num: 38

Candidate Starts for JoieB_11:

(Start: 38 @3478 has 63 MA's), (Start: 43 @3490 has 2 MA's), (57, 3616), (69, 3640), (70, 3664), (73, 3697), (101, 3862),

Gene: Juniormint_57 Start: 37791, Stop: 38165, Start Num: 36

Candidate Starts for Juniormint_57:

(Start: 36 @37791 has 12 MA's), (47, 37878), (52, 37893), (65, 37920), (67, 37926), (72, 37971), (74, 37983), (103, 38142),

Gene: Kamryn_7 Start: 2148, Stop: 2579, Start Num: 38

Candidate Starts for Kamryn_7:

(24, 2091), (Start: 38 @2148 has 63 MA's), (47, 2223), (52, 2238), (65, 2265), (67, 2271), (72, 2316), (74, 2328), (82, 2379), (83, 2382), (88, 2412), (94, 2454),

Gene: Kersh_90 Start: 52725, Stop: 53210, Start Num: 38

Candidate Starts for Kersh_90:

(17, 52599), (34, 52695), (Start: 38 @52725 has 63 MA's), (Start: 43 @52737 has 2 MA's), (48, 52800), (52, 52815), (58, 52842), (67, 52848), (72, 52893), (74, 52905), (82, 52956), (83, 52959), (88, 52989), (94, 53031), (111, 53157),

Gene: Koella_77 Start: 46451, Stop: 46915, Start Num: 38

Candidate Starts for Koella_77:

(Start: 38 @46451 has 63 MA's), (41, 46460), (53, 46562), (55, 46571), (72, 46643), (74, 46655), (79, 46697), (97, 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), (13, 1906), (21, 1969), (Start: 38 @2050 has 63 MA's), (47, 2125), (52, 2140), (65, 2167), (67, 2173), (72, 2218), (74, 2230), (82, 2281), (83, 2284), (88, 2314), (94, 2356),

Gene: Lilbit_11 Start: 3530, Stop: 3937, Start Num: 38

Candidate Starts for Lilbit_11:

(Start: 38 @3530 has 63 MA's), (Start: 43 @3542 has 2 MA's), (57, 3668), (69, 3692), (70, 3716), (73, 3749), (101, 3914),

Gene: LinStu_9 Start: 3505, Stop: 3948, Start Num: 36

Candidate Starts for LinStu_9:

(16, 3388), (19, 3418), (25, 3445), (33, 3481), (Start: 36 @3505 has 12 MA's), (47, 3592), (52, 3607), (65, 3634), (67, 3640), (72, 3685), (74, 3697), (82, 3748), (83, 3751), (88, 3781), (94, 3823),

Gene: LittleLaf_10 Start: 3259, Stop: 3666, Start Num: 38

Candidate Starts for LittleLaf_10:

(Start: 38 @3259 has 63 MA's), (Start: 43 @3271 has 2 MA's), (57, 3397), (69, 3421), (70, 3445), (73, 3478), (101, 3643),

Gene: LolaVinca_10 Start: 2977, Stop: 3399, Start Num: 36

Candidate Starts for LolaVinca_10:

(16, 2860), (19, 2890), (25, 2917), (33, 2953), (Start: 36 @2977 has 12 MA's), (47, 3064), (52, 3079), (65, 3106), (67, 3112), (72, 3157), (74, 3169), (82, 3220), (83, 3223), (88, 3253), (94, 3295), (100, 3334),

Gene: LookingGlass_7 Start: 2223, Stop: 2579, Start Num: 47

Candidate Starts for LookingGlass_7:

(24, 2091), (Start: 38 @2148 has 63 MA's), (47, 2223), (52, 2238), (65, 2265), (67, 2271), (72, 2316), (74, 2328), (82, 2379), (83, 2382), (88, 2412), (94, 2454),

Gene: LordLeafolot_10 Start: 2977, Stop: 3420, Start Num: 36

Candidate Starts for LordLeafolot_10:

(16, 2860), (19, 2890), (25, 2917), (33, 2953), (Start: 36 @2977 has 12 MA's), (47, 3064), (52, 3079), (65, 3106), (67, 3112), (72, 3157), (74, 3169), (82, 3220), (83, 3223), (88, 3253), (94, 3295),

Gene: Lunareta_7 Start: 2252, Stop: 2608, Start Num: 47

Candidate Starts for Lunareta_7:

(Start: 38 @2177 has 63 MA's), (47, 2252), (52, 2267), (65, 2294), (67, 2300), (72, 2345), (74, 2357), (82, 2408), (83, 2411), (88, 2441), (94, 2483),

Gene: Maguvora_11 Start: 2979, Stop: 3422, Start Num: 36

Candidate Starts for Maguvora_11:

(16, 2862), (19, 2892), (25, 2919), (33, 2955), (Start: 36 @2979 has 12 MA's), (47, 3066), (52, 3081), (65, 3108), (67, 3114), (72, 3159), (74, 3171), (82, 3222), (83, 3225), (88, 3255), (94, 3297),

Gene: Marshmallow_42 Start: 35818, Stop: 35342, Start Num: 43

Candidate Starts for Marshmallow_42:

(Start: 38 @35830 has 63 MA's), (Start: 43 @35818 has 2 MA's), (47, 35755), (52, 35740), (66, 35713), (69, 35707), (72, 35662), (74, 35650), (79, 35608), (97, 35506), (114, 35362),

Gene: Maturis_8 Start: 2252, Stop: 2608, Start Num: 47

Candidate Starts for Maturis_8:

(Start: 38 @2177 has 63 MA's), (47, 2252), (52, 2267), (65, 2294), (67, 2300), (72, 2345), (74, 2357), (82, 2408), (83, 2411), (88, 2441), (94, 2483),

Gene: Mikro_7 Start: 3147, Stop: 3578, Start Num: 38

Candidate Starts for Mikro_7:

(24, 3090), (Start: 38 @3147 has 63 MA's), (47, 3222), (52, 3237), (65, 3264), (67, 3270), (72, 3315), (74, 3327), (82, 3378), (83, 3381), (88, 3411), (94, 3453),

Gene: MoMoMixon_7 Start: 2383, Stop: 2814, Start Num: 38

Candidate Starts for MoMoMixon_7:

(29, 2347), (Start: 38 @2383 has 63 MA's), (47, 2458), (52, 2473), (65, 2500), (67, 2506), (72, 2551), (74, 2563), (82, 2614), (83, 2617), (88, 2647), (94, 2689),

Gene: Montpel_7 Start: 2252, Stop: 2608, Start Num: 47

Candidate Starts for Montpel_7:

(Start: 38 @2177 has 63 MA's), (47, 2252), (52, 2267), (65, 2294), (67, 2300), (72, 2345), (74, 2357), (82, 2408), (83, 2411), (88, 2441), (94, 2483),

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), (49, 51222), (52, 51234), (58, 51261), (67, 51267), (72, 51312), (74, 51324), (82, 51375), (83, 51378), (88, 51408), (94, 51450), (111, 51576),

Gene: Myrale_43 Start: 35695, Stop: 35207, Start Num: 38

Candidate Starts for Myrale_43:

(Start: 38 @35695 has 63 MA's), (Start: 43 @35683 has 2 MA's), (47, 35620), (52, 35605), (66, 35578), (69, 35572), (72, 35527), (74, 35515), (79, 35473), (97, 35371), (114, 35227),

Gene: Naval22_8 Start: 2383, Stop: 2814, Start Num: 38

Candidate Starts for Naval22_8:

(29, 2347), (Start: 38 @2383 has 63 MA's), (47, 2458), (52, 2473), (65, 2500), (67, 2506), (72, 2551), (74, 2563), (82, 2614), (83, 2617), (88, 2647), (94, 2689),

Gene: Nidhogg_7 Start: 2383, Stop: 2814, Start Num: 38

Candidate Starts for Nidhogg_7:

(29, 2347), (Start: 38 @2383 has 63 MA's), (47, 2458), (52, 2473), (65, 2500), (67, 2506), (72, 2551), (74, 2563), (82, 2614), (83, 2617), (88, 2647), (94, 2689),

Gene: NoodleTree_7 Start: 2148, Stop: 2579, Start Num: 38

Candidate Starts for NoodleTree_7:

(24, 2091), (Start: 38 @2148 has 63 MA's), (47, 2223), (52, 2238), (65, 2265), (67, 2271), (72, 2316), (74, 2328), (82, 2379), (83, 2382), (88, 2412), (94, 2454),

Gene: NormanBulbieJr_83 Start: 50465, Stop: 50929, Start Num: 38

Candidate Starts for NormanBulbieJr_83:

(Start: 38 @50465 has 63 MA's), (41, 50474), (53, 50576), (55, 50585), (72, 50657), (74, 50669), (79, 50711), (97, 50813),

Gene: NuevoMundo_9 Start: 2841, Stop: 3272, Start Num: 38

Candidate Starts for NuevoMundo_9:

(18, 2736), (20, 2757), (22, 2763), (Start: 38 @2841 has 63 MA's), (47, 2916), (52, 2931), (65, 2958), (67, 2964), (72, 3009), (74, 3021), (82, 3072), (83, 3075), (88, 3105), (94, 3147),

Gene: Phaja_41 Start: 35395, Stop: 34907, Start Num: 38

Candidate Starts for Phaja_41:

(Start: 38 @35395 has 63 MA's), (Start: 43 @35383 has 2 MA's), (47, 35320), (52, 35305), (66, 35278), (69, 35272), (72, 35227), (74, 35215), (79, 35173), (97, 35071), (114, 34927),

Gene: PharkleMinkus_10 Start: 2978, Stop: 3421, Start Num: 36

Candidate Starts for PharkleMinkus_10:

(16, 2861), (19, 2891), (25, 2918), (33, 2954), (Start: 36 @2978 has 12 MA's), (47, 3065), (52, 3080), (65, 3107), (67, 3113), (72, 3158), (74, 3170), (82, 3221), (83, 3224), (88, 3254), (94, 3296),

Gene: Phatniss_83 Start: 49365, Stop: 49781, Start Num: 38

Candidate Starts for Phatniss_83:

(Start: 38 @49365 has 63 MA's), (49, 49449), (51, 49458), (63, 49494), (72, 49563), (74, 49575), (80, 49608), (99, 49707),

Gene: Pier_10 Start: 2844, Stop: 3275, Start Num: 38

Candidate Starts for Pier_10:

(18, 2739), (20, 2760), (22, 2766), (Start: 38 @2844 has 63 MA's), (47, 2919), (52, 2934), (65, 2961), (67, 2967), (72, 3012), (74, 3024), (82, 3075), (83, 3078), (88, 3108), (94, 3150),

Gene: Pio_8 Start: 2537, Stop: 2968, Start Num: 38

Candidate Starts for Pio_8:

(29, 2501), (Start: 38 @2537 has 63 MA's), (47, 2612), (52, 2627), (65, 2654), (67, 2660), (72, 2705), (74, 2717), (82, 2768), (83, 2771), (88, 2801), (94, 2843),

Gene: Pollywog_88 Start: 51599, Stop: 52084, Start Num: 38

Candidate Starts for Pollywog_88:

(31, 51560), (Start: 38 @51599 has 63 MA's), (Start: 43 @51611 has 2 MA's), (48, 51674), (52, 51689), (58, 51716), (67, 51722), (72, 51767), (74, 51779), (82, 51830), (83, 51833), (88, 51863), (94, 51905), (111, 52031),

Gene: Pringar_10 Start: 3084, Stop: 3491, Start Num: 38

Candidate Starts for Pringar_10:

(Start: 38 @3084 has 63 MA's), (Start: 43 @3096 has 2 MA's), (57, 3222), (69, 3246), (70, 3270), (73, 3303), (101, 3468),

Gene: Priscilla_85 Start: 50563, Stop: 51027, Start Num: 38

Candidate Starts for Priscilla_85:

(Start: 38 @50563 has 63 MA's), (41, 50572), (53, 50674), (55, 50683), (72, 50755), (74, 50767), (79, 50809), (97, 50911),

Gene: Puhon_10 Start: 2977, Stop: 3420, Start Num: 36

Candidate Starts for Puhon_10:

(16, 2860), (19, 2890), (25, 2917), (33, 2953), (Start: 36 @2977 has 12 MA's), (47, 3064), (52, 3079), (65, 3106), (67, 3112), (72, 3157), (74, 3169), (82, 3220), (83, 3223), (88, 3253), (94, 3295),

Gene: Pupusa_10 Start: 2977, Stop: 3420, Start Num: 36

Candidate Starts for Pupusa_10:

(16, 2860), (19, 2890), (25, 2917), (33, 2953), (Start: 36 @2977 has 12 MA's), (47, 3064), (52, 3079), (65, 3106), (67, 3112), (72, 3157), (74, 3169), (82, 3220), (83, 3223), (88, 3253), (94, 3295),

Gene: Rearden_72 Start: 47623, Stop: 47135, Start Num: 38

Candidate Starts for Rearden_72:

(31, 47662), (Start: 38 @47623 has 63 MA's), (Start: 43 @47611 has 2 MA's), (48, 47548), (52, 47533), (58, 47506), (67, 47500), (72, 47455), (74, 47443), (82, 47392), (83, 47389), (88, 47359), (94, 47317), (111, 47191),

Gene: RedRaider77_11 Start: 3531, Stop: 3950, Start Num: 37

Candidate Starts for RedRaider77_11:

(Start: 37 @3531 has 1 MA's), (57, 3681), (69, 3705), (70, 3729), (71, 3756), (72, 3759),

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), (49, 51318), (52, 51330), (58, 51357), (67, 51363), (72, 51408), (74, 51420), (82, 51471), (83, 51474), (88, 51504), (94, 51546), (111, 51672),

Gene: Rocha_7 Start: 2220, Stop: 2576, Start Num: 47

Candidate Starts for Rocha_7:

(24, 2088), (Start: 38 @2145 has 63 MA's), (47, 2220), (52, 2235), (65, 2262), (67, 2268), (72, 2313), (74, 2325), (82, 2376), (83, 2379), (88, 2409), (94, 2451),

Gene: Ryadel_104 Start: 63381, Stop: 62932, Start Num: 38

Candidate Starts for Ryadel_104:

(28, 63432), (Start: 38 @63381 has 63 MA's), (Start: 43 @63369 has 2 MA's), (45, 63303), (56, 63240), (62, 63216), (72, 63132), (74, 63120), (80, 63087), (110, 62937),

Gene: Sabbb_90 Start: 48794, Stop: 49228, Start Num: 38

Candidate Starts for Sabbb_90:

(31, 48755), (Start: 38 @48794 has 63 MA's), (Start: 43 @48806 has 2 MA's), (48, 48869), (52, 48884), (58, 48911), (67, 48917), (72, 48962), (74, 48974), (82, 49025), (83, 49028), (88, 49058), (94, 49100),

Gene: Sauce_7 Start: 2387, Stop: 2818, Start Num: 38

Candidate Starts for Sauce_7:

(29, 2351), (Start: 38 @2387 has 63 MA's), (47, 2462), (52, 2477), (65, 2504), (67, 2510), (72, 2555), (74, 2567), (82, 2618), (83, 2621), (88, 2651), (94, 2693),

Gene: Sebata_9 Start: 3505, Stop: 3948, Start Num: 36

Candidate Starts for Sebata_9:

(16, 3388), (19, 3418), (25, 3445), (33, 3481), (Start: 36 @3505 has 12 MA's), (47, 3592), (52, 3607), (65, 3634), (67, 3640), (72, 3685), (74, 3697), (82, 3748), (83, 3751), (88, 3781), (94, 3823),

Gene: ShamWow_43 Start: 35832, Stop: 35344, Start Num: 38

Candidate Starts for ShamWow_43:

(Start: 38 @35832 has 63 MA's), (Start: 43 @35820 has 2 MA's), (47, 35757), (52, 35742), (66, 35715), (69, 35709), (72, 35664), (74, 35652), (79, 35610), (97, 35508), (114, 35364),

Gene: Shauna1_82 Start: 49932, Stop: 50444, Start Num: 38

Candidate Starts for Shauna1_82:

(Start: 38 @49932 has 63 MA's), (72, 50124), (74, 50136), (79, 50178), (97, 50280), (114, 50424),

Gene: SimranZ1_81 Start: 48125, Stop: 48592, Start Num: 38

Candidate Starts for SimranZ1_81:

(31, 48086), (Start: 38 @48125 has 63 MA's), (48, 48200), (52, 48215), (58, 48242), (67, 48248), (72, 48293), (74, 48305), (82, 48356), (83, 48359), (88, 48389), (106, 48503), (112, 48545),

Gene: SiwenD96_8 Start: 2641, Stop: 3123, Start Num: 47

Candidate Starts for SiwenD96_8:

(Start: 38 @2566 has 63 MA's), (47, 2641), (52, 2656), (65, 2683), (67, 2689), (72, 2734), (74, 2746), (80, 2779), (91, 2842), (102, 2920), (104, 2935),

Gene: Sparkdehlily_95 Start: 49514, Stop: 49996, Start Num: 39

Candidate Starts for Sparkdehlily_95:

(Start: 39 @49514 has 2 MA's), (Start: 40 @49517 has 1 MA's), (Start: 42 @49520 has 1 MA's), (49, 49589), (52, 49601), (58, 49628), (67, 49634), (72, 49679), (74, 49691), (82, 49742), (83, 49745), (88, 49775), (94, 49817), (111, 49943),

Gene: Specks_10 Start: 2977, Stop: 3420, Start Num: 36

Candidate Starts for Specks_10:

(16, 2860), (19, 2890), (25, 2917), (33, 2953), (Start: 36 @2977 has 12 MA's), (47, 3064), (52, 3079), (65, 3106), (67, 3112), (72, 3157), (74, 3169), (82, 3220), (83, 3223), (88, 3253), (94, 3295),

Gene: Spud_8 Start: 2537, Stop: 2968, Start Num: 38

Candidate Starts for Spud_8:

(29, 2501), (Start: 38 @2537 has 63 MA's), (47, 2612), (52, 2627), (65, 2654), (67, 2660), (72, 2705), (74, 2717), (82, 2768), (83, 2771), (88, 2801), (94, 2843),

Gene: StellaBean_41 Start: 35156, Stop: 34668, Start Num: 38

Candidate Starts for StellaBean_41:

(Start: 38 @35156 has 63 MA's), (Start: 43 @35144 has 2 MA's), (47, 35081), (52, 35066), (66, 35039), (69, 35033), (72, 34988), (74, 34976), (79, 34934), (97, 34832), (114, 34688),

Gene: StephanieG_9 Start: 2844, Stop: 3275, Start Num: 38

Candidate Starts for StephanieG_9:

(18, 2739), (20, 2760), (22, 2766), (Start: 38 @2844 has 63 MA's), (47, 2919), (52, 2934), (65, 2961), (67, 2967), (72, 3012), (74, 3024), (82, 3075), (83, 3078), (88, 3108), (94, 3150),

Gene: StevieRay_57 Start: 37992, Stop: 38351, Start Num: 38

Candidate Starts for StevieRay_57:

(7, 37731), (9, 37764), (10, 37788), (11, 37794), (27, 37935), (Start: 38 @37992 has 63 MA's), (47, 38067), (52, 38082), (65, 38109), (67, 38115), (72, 38160), (74, 38172), (103, 38328),

Gene: Suerte_55 Start: 39354, Stop: 39890, Start Num: 38

Candidate Starts for Suerte_55:

(12, 39168), (14, 39201), (26, 39300), (Start: 38 @39354 has 63 MA's), (Start: 43 @39366 has 2 MA's), (46, 39429), (73, 39597), (81, 39660), (89, 39711), (98, 39783), (104, 39825),

Gene: Sunshine924_64 Start: 40630, Stop: 40100, Start Num: 35

Candidate Starts for Sunshine924_64:

(Start: 35 @40630 has 1 MA's), (57, 40477), (69, 40453), (70, 40429), (73, 40396), (82, 40336), (83, 40333), (88, 40303), (105, 40189), (109, 40147), (113, 40120),

Gene: TDanisky_96 Start: 49514, Stop: 49996, Start Num: 39

Candidate Starts for TDanisky_96:

(Start: 39 @49514 has 2 MA's), (Start: 40 @49517 has 1 MA's), (Start: 42 @49520 has 1 MA's), (49, 49589), (52, 49601), (58, 49628), (67, 49634), (72, 49679), (74, 49691), (82, 49742), (83, 49745), (88, 49775), (94, 49817), (111, 49943),

Gene: Tainan_10 Start: 2977, Stop: 3420, Start Num: 36

Candidate Starts for Tainan_10:

(16, 2860), (19, 2890), (25, 2917), (33, 2953), (Start: 36 @2977 has 12 MA's), (47, 3064), (52, 3079), (65, 3106), (67, 3112), (72, 3157), (74, 3169), (82, 3220), (83, 3223), (88, 3253), (94, 3295),

Gene: Thespis_54 Start: 36385, Stop: 36747, Start Num: 38

Candidate Starts for Thespis_54:

(8, 36157), (23, 36304), (27, 36328), (Start: 38 @36385 has 63 MA's), (47, 36460), (52, 36475), (65, 36502), (67, 36508), (72, 36553), (74, 36565), (103, 36724),

Gene: Tonenili_21 Start: 6415, Stop: 6846, Start Num: 38

Candidate Starts for Tonenili_21:

(6, 6136), (15, 6280), (16, 6283), (Start: 38 @6415 has 63 MA's), (Start: 43 @6427 has 2 MA's), (54, 6535), (57, 6553), (69, 6577), (70, 6601), (72, 6631), (74, 6643), (85, 6715), (95, 6769),

Gene: Tortellini_64 Start: 43747, Stop: 44214, Start Num: 38

Candidate Starts for Tortellini_64:

(30, 43702), (Start: 38 @43747 has 63 MA's), (44, 43822), (49, 43846), (55, 43888), (96, 44155), (102, 44200),

Gene: Toto_42 Start: 35820, Stop: 35344, Start Num: 43

Candidate Starts for Toto_42:

(Start: 38 @35832 has 63 MA's), (Start: 43 @35820 has 2 MA's), (47, 35757), (52, 35742), (66, 35715), (69, 35709), (72, 35664), (74, 35652), (79, 35610), (97, 35508), (114, 35364),

Gene: Tuco_44 Start: 36340, Stop: 35852, Start Num: 38

Candidate Starts for Tuco_44:

(Start: 38 @36340 has 63 MA's), (Start: 43 @36328 has 2 MA's), (47, 36265), (52, 36250), (66, 36223), (69, 36217), (72, 36172), (74, 36160), (79, 36118), (97, 36016), (114, 35872),

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

Candidate Starts for Tyke_9:

(24, 2760), (Start: 38 @2817 has 63 MA's), (47, 2892), (52, 2907), (65, 2934), (67, 2940), (72, 2985), (74, 2997), (82, 3048), (83, 3051), (88, 3081), (94, 3123),