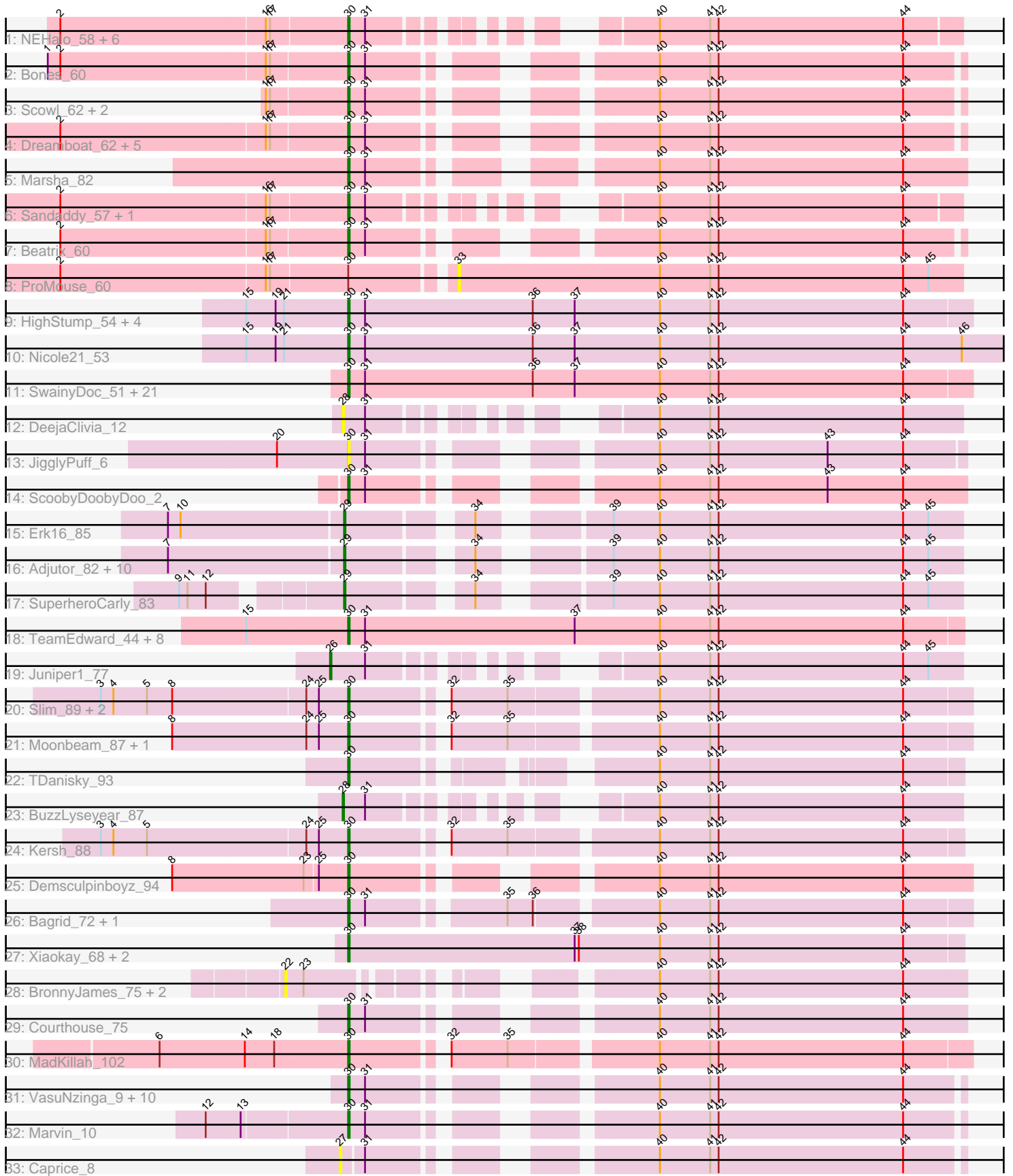


Pham 296411



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 296411 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296411 has 108 members, 20 are drafts.

Phages represented in each track:

- Track 1 : NEHalo_58, AFIS_57, Blackflame_57, SpikeBT_59, GageAP_62, Pollywog_86, Makemake_63
- Track 2 : Bones_60
- Track 3 : Scowl_62, StrongArm_59, Bexan_58
- Track 4 : Dreamboat_62, Cueyllyss_61, Ohno789_61, Graduation_65, PherrisBueller_60, Jasper_61
- Track 5 : Marsha_82
- Track 6 : Sandaddy_57, Sorpresa_58
- Track 7 : Beatrix_60
- Track 8 : ProMouse_60
- Track 9 : HighStump_54, Iridessa_53, Longacauda_53, Legolas_54, Orwigg_52
- Track 10 : Nicole21_53
- Track 11 : SwainyDoc_51, DaddyDaniels_54, Chentzyk_51, Rita1961_51, Kronus_50, Childish_52, MmasiCarm_51, Obutu_51, Soile_53, Phayeta_52, Mortcellus_50, Brilliant_54, Kahve_52, Casbah_50, Ben11_50, Gervas_51, HenryJackson_52, Marlia_51, Craff_55, Mulaychimus_51, TinyTerror_51, SlippinJimmy_52
- Track 12 : DeejaClivia_12
- Track 13 : JigglyPuff_6
- Track 14 : ScoobyDoobyDoo_2
- Track 15 : Erk16_85
- Track 16 : Adjutor_82, PLOT_85, Visconti_85, Thoth_84, WaldoWhy_85, Butterscotch_82, Mopey_86, Giuseppe_86, Chill_85, Prager_84, Penelope2018_84
- Track 17 : SuperheroCarly_83
- Track 18 : TeamEdward_44, StormChicken_44, Nala_43, MPhalcon_42, MISSy_42, Rimmer_43, Becksu_43, Buck_43, Youngblood_44
- Track 19 : Juniper1_77
- Track 20 : Slim_89, Emmaloid_89, Sabbb_88
- Track 21 : Moonbeam_87, Rialto_90
- Track 22 : TDanisky_93
- Track 23 : BuzzLyseyear_87
- Track 24 : Kersh_88
- Track 25 : Demsculpinboyz_94
- Track 26 : Bagrid_72, EricMillard_72
- Track 27 : Xiaokay_68, Thibault_65, Constella_64
- Track 28 : BronnyJames_75, Nibley_68, Shaboozey_74
- Track 29 : Courthouse_75

- Track 30 : MadKillah_102
- Track 31 : VasuNzinga_9, Latretium_78, MrPhizzler_54, BoogieWoogie_53, RedRaider77_10, DolOn_56, Rimu_53, Fringe_56, Lumine_53, Khan1_53, Gwilliam_53
- Track 32 : Marvin_10
- Track 33 : Caprice_8

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

The start number called the most often in the published annotations is 30, it was called in 73 of the 88 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AFIS_57, Bagrid_72, Beatrix_60, Becksu_43, Ben11_50, Bexan_58, Blackflame_57, Bones_60, BoogieWoogie_53, Brilliant_54, Buck_43, Casbah_50, Chentzyk_51, Childish_52, Constella_64, Courthouse_75, Craff_55, Cueylyss_61, DaddyDaniels_54, Demsculpinboyz_94, DolOn_56, Dreamboat_62, Emmaloid_89, EricMillard_72, Fringe_56, GageAP_62, Gervas_51, Graduation_65, Gwilliam_53, HenryJackson_52, HighStump_54, Iridessa_53, Jasper_61, JigglyPuff_6, Kahve_52, Kersh_88, Khan1_53, Kronus_50, Latretium_78, Legolas_54, Longacauda_53, Lumine_53, MISSy_42, MPhalcon_42, MadKillah_102, Makemake_63, Marlia_51, Marsha_82, Marvin_10, MmasiCarm_51, Moonbeam_87, Mortcellus_50, MrPhizzler_54, Mulaychimus_51, NEHalo_58, Nala_43, Nicole21_53, Obutu_51, Ohno789_61, Orwigg_52, Phayeta_52, PherrisBueller_60, Pollywog_86, RedRaider77_10, Rialto_90, Rimmer_43, Rimu_53, Rita1961_51, Sabbb_88, Sandaddy_57, ScoobyDoobyDoo_2, Scowl_62, Slim_89, SlippinJimmy_52, Soile_53, Sorpresa_58, SpikeBT_59, StormChicken_44, StrongArm_59, SwainyDoc_51, TDanisky_93, TeamEdward_44, Thibault_65, TinyTerror_51, VasuNzinga_9, Xiaokay_68, Youngblood_44,

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

- ProMouse_60,

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

- Adjutor_82, BronnyJames_75, Butterscotch_82, BuzzLyseyear_87, Caprice_8, Chill_85, DeejaClivia_12, Erk16_85, Giuseppe_86, Juniper1_77, Mopey_86, Nibley_68, PLOT_85, Penelope2018_84, Prager_84, Shaboozey_74, SuperheroCarly_83, Thoth_84, Visconti_85, WaldoWhy_85,

Summary by start number:

Start 22:

- Found in 3 of 108 (2.8%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BronnyJames_75 (J), Nibley_68 (J), Shaboozey_74 (J),

Start 26:

- Found in 1 of 108 (0.9%) of genes in pham

- Manual Annotations of this start: 1 of 88
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Juniper1_77 (F1),

Start 27:

- Found in 1 of 108 (0.9%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Caprice_8 (S),

Start 28:

- Found in 2 of 108 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 88
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BuzzLyseyear_87 (F1), DeejaClivia_12 (C1),

Start 29:

- Found in 13 of 108 (12.0%) of genes in pham
- Manual Annotations of this start: 13 of 88
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adjutor_82 (D1), Butterscotch_82 (D1), Chill_85 (D1), Erk16_85 (D1), Giuseppe_86 (D1), Mopey_86 (D1), PLOT_85 (D1), Penelope2018_84 (D1), Prager_84 (D1), SuperheroCarly_83 (D1), Thoth_84 (D1), Visconti_85 (D1), WaldoWhy_85 (D1),

Start 30:

- Found in 88 of 108 (81.5%) of genes in pham
- Manual Annotations of this start: 73 of 88
- Called 98.9% of time when present
- Phage (with cluster) where this start called: AFIS_57 (A1), Bagrid_72 (J), Beatrix_60 (A1), Becksu_43 (E), Ben11_50 (B3), Bexan_58 (A1), Blackflame_57 (A1), Bones_60 (A1), BoogieWoogie_53 (B1), Brilliant_54 (B1), Buck_43 (E), Casbah_50 (B3), Chentzyk_51 (B3), Childish_52 (B1), Constella_64 (J), Courthouse_75 (J), Craff_55 (B1), Cueylyss_61 (A1), DaddyDaniels_54 (B1), Demsculpinboyz_94 (F2), DolOn_56 (B1), Dreamboat_62 (A1), Emmaloid_89 (F1), EricMillard_72 (J), Fringe_56 (B1), GageAP_62 (A1), Gervas_51 (B3), Graduation_65 (A1), Gwilliam_53 (B1), HenryJackson_52 (B1), HighStump_54 (B1), Iridessa_53 (B1), Jasper_61 (A1), JigglyPuff_6 (C1), Kahve_52 (B1), Kersh_88 (F1), Khan1_53 (B1), Kronus_50 (B3), Latretium_78 (F1), Legolas_54 (B1), Longacauda_53 (B1), Lumine_53 (B1), MISSy_42 (E), MPhalcon_42 (E), MadKillah_102 (O), Makemake_63 (A1), Marlia_51 (B3), Marsha_82 (A1), Marvin_10 (S), MmasiCarm_51 (B3), Moonbeam_87 (F1), Mortcellus_50 (B3), MrPhizzler_54 (B1), Mulaychimus_51 (B3), NEHalo_58 (A1), Nala_43 (E), Nicole21_53 (B1), Obutu_51 (B3), Ohno789_61 (A1), Orwigg_52 (B1), Phayeta_52 (B3), PherrisBueller_60 (A1), Pollywog_86 (F1), RedRaider77_10 (S), Rialto_90 (F1), Rimmer_43 (E), Rimu_53 (B1), Rita1961_51 (B3), Sabbb_88 (F1), Sandaddy_57 (A1), ScoobyDoobyDoo_2 (C2), Scowl_62 (A1), Slim_89 (F1), SlippinJimmy_52 (B3), Soile_53 (B1), Sorpresa_58 (A1), SpikeBT_59 (A1), StormChicken_44 (E), StrongArm_59 (A1), SwainyDoc_51 (B3), TDanisky_93 (F1), TeamEdward_44 (E), Thibault_65 (J), TinyTerror_51 (B3), VasuNzinga_9 (S), Xiaokay_68 (J), Youngblood_44 (E),

Start 33:

- Found in 1 of 108 (0.9%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ProMouse_60 (A1),

Summary by clusters:

There are 12 clusters represented in this pham: F1, F2, E, J, O, A1, S, B1, B3, C2, C1, D1,

Info for manual annotations of cluster A1:

- Start number 30 was manually annotated 18 times for cluster A1.

Info for manual annotations of cluster B1:

- Start number 30 was manually annotated 18 times for cluster B1.

Info for manual annotations of cluster B3:

- Start number 30 was manually annotated 12 times for cluster B3.

Info for manual annotations of cluster C2:

- Start number 30 was manually annotated 1 time for cluster C2.

Info for manual annotations of cluster D1:

- Start number 29 was manually annotated 13 times for cluster D1.

Info for manual annotations of cluster E:

- Start number 30 was manually annotated 6 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 26 was manually annotated 1 time for cluster F1.
- Start number 28 was manually annotated 1 time for cluster F1.
- Start number 30 was manually annotated 9 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 30 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster J:

- Start number 30 was manually annotated 4 times for cluster J.

Info for manual annotations of cluster O:

- Start number 30 was manually annotated 1 time for cluster O.

Info for manual annotations of cluster S:

- Start number 30 was manually annotated 3 times for cluster S.

Gene Information:

Gene: AFIS_57 Start: 39716, Stop: 39357, Start Num: 30

Candidate Starts for AFIS_57:

(2, 39917), (16, 39773), (17, 39770), (Start: 30 @39716 has 73 MA's), (31, 39704), (40, 39569), (41, 39533), (42, 39527), (44, 39395),

Gene: Adjutor_82 Start: 59655, Stop: 60050, Start Num: 29

Candidate Starts for Adjutor_82:

(7, 59532), (Start: 29 @59655 has 13 MA's), (34, 59730), (39, 59802), (40, 59835), (41, 59871), (42, 59877), (44, 60009), (45, 60027),

Gene: Bagrid_72 Start: 50124, Stop: 49711, Start Num: 30

Candidate Starts for Bagrid_72:

(Start: 30 @50124 has 73 MA's), (31, 50112), (35, 50028), (36, 50010), (40, 49932), (41, 49896), (42, 49890), (44, 49758),

Gene: Beatrix_60 Start: 41870, Stop: 41490, Start Num: 30

Candidate Starts for Beatrix_60:

(2, 42071), (16, 41927), (17, 41924), (Start: 30 @41870 has 73 MA's), (31, 41858), (40, 41702), (41, 41666), (42, 41660), (44, 41528),

Gene: Becksu_43 Start: 35704, Stop: 35261, Start Num: 30

Candidate Starts for Becksu_43:

(15, 35776), (Start: 30 @35704 has 73 MA's), (31, 35692), (37, 35542), (40, 35482), (41, 35446), (42, 35440), (44, 35308),

Gene: Ben11_50 Start: 45429, Stop: 44986, Start Num: 30

Candidate Starts for Ben11_50:

(Start: 30 @45429 has 73 MA's), (31, 45417), (36, 45297), (37, 45267), (40, 45207), (41, 45171), (42, 45165), (44, 45033),

Gene: Bexan_58 Start: 41649, Stop: 41269, Start Num: 30

Candidate Starts for Bexan_58:

(16, 41706), (17, 41703), (Start: 30 @41649 has 73 MA's), (31, 41637), (40, 41481), (41, 41445), (42, 41439), (44, 41307),

Gene: Blackflame_57 Start: 40484, Stop: 40125, Start Num: 30

Candidate Starts for Blackflame_57:

(2, 40685), (16, 40541), (17, 40538), (Start: 30 @40484 has 73 MA's), (31, 40472), (40, 40337), (41, 40301), (42, 40295), (44, 40163),

Gene: Bones_60 Start: 41965, Stop: 41585, Start Num: 30

Candidate Starts for Bones_60:

(1, 42175), (2, 42166), (16, 42022), (17, 42019), (Start: 30 @41965 has 73 MA's), (31, 41953), (40, 41797), (41, 41761), (42, 41755), (44, 41623),

Gene: BoogieWoogie_53 Start: 47371, Stop: 46982, Start Num: 30

Candidate Starts for BoogieWoogie_53:

(Start: 30 @47371 has 73 MA's), (31, 47359), (40, 47203), (41, 47167), (42, 47161), (44, 47029),

Gene: Brilliant_54 Start: 47338, Stop: 46895, Start Num: 30

Candidate Starts for Brilliant_54:

(Start: 30 @47338 has 73 MA's), (31, 47326), (36, 47206), (37, 47176), (40, 47116), (41, 47080), (42, 47074), (44, 46942),

Gene: BronnyJames_75 Start: 47278, Stop: 46868, Start Num: 22

Candidate Starts for BronnyJames_75:
(22, 47278), (23, 47266), (40, 47086), (41, 47050), (42, 47044), (44, 46912),

Gene: Buck_43 Start: 35755, Stop: 35318, Start Num: 30
Candidate Starts for Buck_43:
(15, 35827), (Start: 30 @35755 has 73 MA's), (31, 35743), (37, 35593), (40, 35533), (41, 35497), (42, 35491), (44, 35359),

Gene: Butterscotch_82 Start: 59706, Stop: 60101, Start Num: 29
Candidate Starts for Butterscotch_82:
(7, 59583), (Start: 29 @59706 has 13 MA's), (34, 59781), (39, 59853), (40, 59886), (41, 59922), (42, 59928), (44, 60060), (45, 60078),

Gene: BuzzLyseyear_87 Start: 51492, Stop: 51857, Start Num: 28
Candidate Starts for BuzzLyseyear_87:
(Start: 28 @51492 has 1 MA's), (31, 51507), (40, 51642), (41, 51678), (42, 51684), (44, 51816),

Gene: Caprice_8 Start: 2539, Stop: 2922, Start Num: 27
Candidate Starts for Caprice_8:
(27, 2539), (31, 2554), (40, 2710), (41, 2746), (42, 2752), (44, 2884),

Gene: Casbah_50 Start: 45459, Stop: 45016, Start Num: 30
Candidate Starts for Casbah_50:
(Start: 30 @45459 has 73 MA's), (31, 45447), (36, 45327), (37, 45297), (40, 45237), (41, 45201), (42, 45195), (44, 45063),

Gene: Chentzyk_51 Start: 45971, Stop: 45528, Start Num: 30
Candidate Starts for Chentzyk_51:
(Start: 30 @45971 has 73 MA's), (31, 45959), (36, 45839), (37, 45809), (40, 45749), (41, 45713), (42, 45707), (44, 45575),

Gene: Childish_52 Start: 47365, Stop: 46922, Start Num: 30
Candidate Starts for Childish_52:
(Start: 30 @47365 has 73 MA's), (31, 47353), (36, 47233), (37, 47203), (40, 47143), (41, 47107), (42, 47101), (44, 46969),

Gene: Chill_85 Start: 59683, Stop: 60078, Start Num: 29
Candidate Starts for Chill_85:
(7, 59560), (Start: 29 @59683 has 13 MA's), (34, 59758), (39, 59830), (40, 59863), (41, 59899), (42, 59905), (44, 60037), (45, 60055),

Gene: Constella_64 Start: 46367, Stop: 45930, Start Num: 30
Candidate Starts for Constella_64:
(Start: 30 @46367 has 73 MA's), (37, 46205), (38, 46202), (40, 46145), (41, 46109), (42, 46103), (44, 45971),

Gene: Courthouse_75 Start: 48166, Stop: 47780, Start Num: 30
Candidate Starts for Courthouse_75:
(Start: 30 @48166 has 73 MA's), (31, 48154), (40, 47998), (41, 47962), (42, 47956), (44, 47824),

Gene: Craff_55 Start: 47790, Stop: 47347, Start Num: 30
Candidate Starts for Craff_55:

(Start: 30 @47790 has 73 MA's), (31, 47778), (36, 47658), (37, 47628), (40, 47568), (41, 47532), (42, 47526), (44, 47394),

Gene: Cueyllyss_61 Start: 42165, Stop: 41785, Start Num: 30

Candidate Starts for Cueyllyss_61:

(2, 42366), (16, 42222), (17, 42219), (Start: 30 @42165 has 73 MA's), (31, 42153), (40, 41997), (41, 41961), (42, 41955), (44, 41823),

Gene: DaddyDaniels_54 Start: 47322, Stop: 46879, Start Num: 30

Candidate Starts for DaddyDaniels_54:

(Start: 30 @47322 has 73 MA's), (31, 47310), (36, 47190), (37, 47160), (40, 47100), (41, 47064), (42, 47058), (44, 46926),

Gene: DeejaClivia_12 Start: 3961, Stop: 4326, Start Num: 28

Candidate Starts for DeejaClivia_12:

(Start: 28 @3961 has 1 MA's), (31, 3976), (40, 4111), (41, 4147), (42, 4153), (44, 4285),

Gene: Demsculpinboyz_94 Start: 48157, Stop: 48546, Start Num: 30

Candidate Starts for Demsculpinboyz_94:

(8, 48034), (23, 48127), (25, 48136), (Start: 30 @48157 has 73 MA's), (40, 48325), (41, 48361), (42, 48367), (44, 48499),

Gene: DolOn_56 Start: 48048, Stop: 47668, Start Num: 30

Candidate Starts for DolOn_56:

(Start: 30 @48048 has 73 MA's), (31, 48036), (40, 47880), (41, 47844), (42, 47838), (44, 47706),

Gene: Dreamboat_62 Start: 40065, Stop: 39685, Start Num: 30

Candidate Starts for Dreamboat_62:

(2, 40266), (16, 40122), (17, 40119), (Start: 30 @40065 has 73 MA's), (31, 40053), (40, 39897), (41, 39861), (42, 39855), (44, 39723),

Gene: Emmaloid_89 Start: 50002, Stop: 50415, Start Num: 30

Candidate Starts for Emmaloid_89:

(3, 49828), (4, 49837), (5, 49861), (8, 49879), (24, 49972), (25, 49981), (Start: 30 @50002 has 73 MA's), (32, 50059), (35, 50098), (40, 50194), (41, 50230), (42, 50236), (44, 50368),

Gene: EricMillard_72 Start: 50977, Stop: 50564, Start Num: 30

Candidate Starts for EricMillard_72:

(Start: 30 @50977 has 73 MA's), (31, 50965), (35, 50881), (36, 50863), (40, 50785), (41, 50749), (42, 50743), (44, 50611),

Gene: Erk16_85 Start: 60039, Stop: 60434, Start Num: 29

Candidate Starts for Erk16_85:

(7, 59916), (10, 59925), (Start: 29 @60039 has 13 MA's), (34, 60114), (39, 60186), (40, 60219), (41, 60255), (42, 60261), (44, 60393), (45, 60411),

Gene: Fringe_56 Start: 48267, Stop: 47878, Start Num: 30

Candidate Starts for Fringe_56:

(Start: 30 @48267 has 73 MA's), (31, 48255), (40, 48099), (41, 48063), (42, 48057), (44, 47925),

Gene: GageAP_62 Start: 41383, Stop: 41024, Start Num: 30

Candidate Starts for GageAP_62:

(2, 41584), (16, 41440), (17, 41437), (Start: 30 @41383 has 73 MA's), (31, 41371), (40, 41236), (41, 41200), (42, 41194), (44, 41062),

Gene: Gervas_51 Start: 45588, Stop: 45145, Start Num: 30

Candidate Starts for Gervas_51:

(Start: 30 @45588 has 73 MA's), (31, 45576), (36, 45456), (37, 45426), (40, 45366), (41, 45330), (42, 45324), (44, 45192),

Gene: Giuseppe_86 Start: 59752, Stop: 60147, Start Num: 29

Candidate Starts for Giuseppe_86:

(7, 59629), (Start: 29 @59752 has 13 MA's), (34, 59827), (39, 59899), (40, 59932), (41, 59968), (42, 59974), (44, 60106), (45, 60124),

Gene: Graduation_65 Start: 42237, Stop: 41857, Start Num: 30

Candidate Starts for Graduation_65:

(2, 42438), (16, 42294), (17, 42291), (Start: 30 @42237 has 73 MA's), (31, 42225), (40, 42069), (41, 42033), (42, 42027), (44, 41895),

Gene: Gwilliam_53 Start: 47683, Stop: 47303, Start Num: 30

Candidate Starts for Gwilliam_53:

(Start: 30 @47683 has 73 MA's), (31, 47671), (40, 47515), (41, 47479), (42, 47473), (44, 47341),

Gene: HenryJackson_52 Start: 47354, Stop: 46911, Start Num: 30

Candidate Starts for HenryJackson_52:

(Start: 30 @47354 has 73 MA's), (31, 47342), (36, 47222), (37, 47192), (40, 47132), (41, 47096), (42, 47090), (44, 46958),

Gene: HighStump_54 Start: 47890, Stop: 47447, Start Num: 30

Candidate Starts for HighStump_54:

(15, 47962), (19, 47941), (21, 47935), (Start: 30 @47890 has 73 MA's), (31, 47878), (36, 47758), (37, 47728), (40, 47668), (41, 47632), (42, 47626), (44, 47494),

Gene: Iridessa_53 Start: 47334, Stop: 46891, Start Num: 30

Candidate Starts for Iridessa_53:

(15, 47406), (19, 47385), (21, 47379), (Start: 30 @47334 has 73 MA's), (31, 47322), (36, 47202), (37, 47172), (40, 47112), (41, 47076), (42, 47070), (44, 46938),

Gene: Jasper_61 Start: 39951, Stop: 39571, Start Num: 30

Candidate Starts for Jasper_61:

(2, 40152), (16, 40008), (17, 40005), (Start: 30 @39951 has 73 MA's), (31, 39939), (40, 39783), (41, 39747), (42, 39741), (44, 39609),

Gene: JigglyPuff_6 Start: 1982, Stop: 2365, Start Num: 30

Candidate Starts for JigglyPuff_6:

(20, 1931), (Start: 30 @1982 has 73 MA's), (31, 1994), (40, 2150), (41, 2186), (42, 2192), (43, 2270), (44, 2324),

Gene: Juniper1_77 Start: 47775, Stop: 48149, Start Num: 26

Candidate Starts for Juniper1_77:

(Start: 26 @47775 has 1 MA's), (31, 47799), (40, 47934), (41, 47970), (42, 47976), (44, 48108), (45, 48126),

Gene: Kahve_52 Start: 47351, Stop: 46908, Start Num: 30

Candidate Starts for Kahve_52:

(Start: 30 @47351 has 73 MA's), (31, 47339), (36, 47219), (37, 47189), (40, 47129), (41, 47093), (42, 47087), (44, 46955),

Gene: Kersh_88 Start: 52115, Stop: 52522, Start Num: 30

Candidate Starts for Kersh_88:

(3, 51941), (4, 51950), (5, 51974), (24, 52085), (25, 52094), (Start: 30 @52115 has 73 MA's), (32, 52172), (35, 52211), (40, 52307), (41, 52343), (42, 52349), (44, 52481),

Gene: Khan1_53 Start: 47307, Stop: 46918, Start Num: 30

Candidate Starts for Khan1_53:

(Start: 30 @47307 has 73 MA's), (31, 47295), (40, 47139), (41, 47103), (42, 47097), (44, 46965),

Gene: Kronus_50 Start: 46191, Stop: 45748, Start Num: 30

Candidate Starts for Kronus_50:

(Start: 30 @46191 has 73 MA's), (31, 46179), (36, 46059), (37, 46029), (40, 45969), (41, 45933), (42, 45927), (44, 45795),

Gene: Latretium_78 Start: 47174, Stop: 47560, Start Num: 30

Candidate Starts for Latretium_78:

(Start: 30 @47174 has 73 MA's), (31, 47186), (40, 47342), (41, 47378), (42, 47384), (44, 47516),

Gene: Legolas_54 Start: 47787, Stop: 47344, Start Num: 30

Candidate Starts for Legolas_54:

(15, 47859), (19, 47838), (21, 47832), (Start: 30 @47787 has 73 MA's), (31, 47775), (36, 47655), (37, 47625), (40, 47565), (41, 47529), (42, 47523), (44, 47391),

Gene: Longacauda_53 Start: 47750, Stop: 47307, Start Num: 30

Candidate Starts for Longacauda_53:

(15, 47822), (19, 47801), (21, 47795), (Start: 30 @47750 has 73 MA's), (31, 47738), (36, 47618), (37, 47588), (40, 47528), (41, 47492), (42, 47486), (44, 47354),

Gene: Lumine_53 Start: 47538, Stop: 47155, Start Num: 30

Candidate Starts for Lumine_53:

(Start: 30 @47538 has 73 MA's), (31, 47526), (40, 47370), (41, 47334), (42, 47328), (44, 47196),

Gene: MISSy_42 Start: 35034, Stop: 34591, Start Num: 30

Candidate Starts for MISSy_42:

(15, 35106), (Start: 30 @35034 has 73 MA's), (31, 35022), (37, 34872), (40, 34812), (41, 34776), (42, 34770), (44, 34638),

Gene: MPhalcon_42 Start: 35027, Stop: 34584, Start Num: 30

Candidate Starts for MPhalcon_42:

(15, 35099), (Start: 30 @35027 has 73 MA's), (31, 35015), (37, 34865), (40, 34805), (41, 34769), (42, 34763), (44, 34631),

Gene: MadKillah_102 Start: 61818, Stop: 61405, Start Num: 30

Candidate Starts for MadKillah_102:

(6, 61950), (14, 61890), (18, 61869), (Start: 30 @61818 has 73 MA's), (32, 61761), (35, 61722), (40, 61626), (41, 61590), (42, 61584), (44, 61452),

Gene: Makemake_63 Start: 42339, Stop: 41959, Start Num: 30

Candidate Starts for Makemake_63:

(2, 42540), (16, 42396), (17, 42393), (Start: 30 @42339 has 73 MA's), (31, 42327), (40, 42171), (41, 42135), (42, 42129), (44, 41997),

Gene: Marlia_51 Start: 45592, Stop: 45149, Start Num: 30

Candidate Starts for Marlia_51:

(Start: 30 @45592 has 73 MA's), (31, 45580), (36, 45460), (37, 45430), (40, 45370), (41, 45334), (42, 45328), (44, 45196),

Gene: Marsha_82 Start: 50494, Stop: 50108, Start Num: 30

Candidate Starts for Marsha_82:

(Start: 30 @50494 has 73 MA's), (31, 50482), (40, 50326), (41, 50290), (42, 50284), (44, 50152),

Gene: Marvin_10 Start: 3597, Stop: 3977, Start Num: 30

Candidate Starts for Marvin_10:

(12, 3501), (13, 3525), (Start: 30 @3597 has 73 MA's), (31, 3609), (40, 3765), (41, 3801), (42, 3807), (44, 3939),

Gene: MmasiCarm_51 Start: 45638, Stop: 45195, Start Num: 30

Candidate Starts for MmasiCarm_51:

(Start: 30 @45638 has 73 MA's), (31, 45626), (36, 45506), (37, 45476), (40, 45416), (41, 45380), (42, 45374), (44, 45242),

Gene: Moonbeam_87 Start: 50558, Stop: 50971, Start Num: 30

Candidate Starts for Moonbeam_87:

(8, 50435), (24, 50528), (25, 50537), (Start: 30 @50558 has 73 MA's), (32, 50615), (35, 50654), (40, 50750), (41, 50786), (42, 50792), (44, 50924),

Gene: Mopey_86 Start: 59779, Stop: 60174, Start Num: 29

Candidate Starts for Mopey_86:

(7, 59656), (Start: 29 @59779 has 13 MA's), (34, 59854), (39, 59926), (40, 59959), (41, 59995), (42, 60001), (44, 60133), (45, 60151),

Gene: Mortcellus_50 Start: 46245, Stop: 45802, Start Num: 30

Candidate Starts for Mortcellus_50:

(Start: 30 @46245 has 73 MA's), (31, 46233), (36, 46113), (37, 46083), (40, 46023), (41, 45987), (42, 45981), (44, 45849),

Gene: MrPhizzler_54 Start: 47284, Stop: 46895, Start Num: 30

Candidate Starts for MrPhizzler_54:

(Start: 30 @47284 has 73 MA's), (31, 47272), (40, 47116), (41, 47080), (42, 47074), (44, 46942),

Gene: Mulaychimus_51 Start: 45574, Stop: 45131, Start Num: 30

Candidate Starts for Mulaychimus_51:

(Start: 30 @45574 has 73 MA's), (31, 45562), (36, 45442), (37, 45412), (40, 45352), (41, 45316), (42, 45310), (44, 45178),

Gene: NEHalo_58 Start: 40784, Stop: 40425, Start Num: 30

Candidate Starts for NEHalo_58:

(2, 40985), (16, 40841), (17, 40838), (Start: 30 @40784 has 73 MA's), (31, 40772), (40, 40637), (41, 40601), (42, 40595), (44, 40463),

Gene: Nala_43 Start: 35539, Stop: 35096, Start Num: 30

Candidate Starts for Nala_43:

(15, 35611), (Start: 30 @35539 has 73 MA's), (31, 35527), (37, 35377), (40, 35317), (41, 35281), (42, 35275), (44, 35143),

Gene: Nibley_68 Start: 46367, Stop: 45957, Start Num: 22

Candidate Starts for Nibley_68:

(22, 46367), (23, 46355), (40, 46175), (41, 46139), (42, 46133), (44, 46001),

Gene: Nicole21_53 Start: 47623, Stop: 47051, Start Num: 30

Candidate Starts for Nicole21_53:

(15, 47695), (19, 47674), (21, 47668), (Start: 30 @47623 has 73 MA's), (31, 47611), (36, 47491), (37, 47461), (40, 47401), (41, 47365), (42, 47359), (44, 47227), (46, 47185),

Gene: Obutu_51 Start: 45593, Stop: 45150, Start Num: 30

Candidate Starts for Obutu_51:

(Start: 30 @45593 has 73 MA's), (31, 45581), (36, 45461), (37, 45431), (40, 45371), (41, 45335), (42, 45329), (44, 45197),

Gene: Ohno789_61 Start: 41528, Stop: 41148, Start Num: 30

Candidate Starts for Ohno789_61:

(2, 41729), (16, 41585), (17, 41582), (Start: 30 @41528 has 73 MA's), (31, 41516), (40, 41360), (41, 41324), (42, 41318), (44, 41186),

Gene: Orwigg_52 Start: 47308, Stop: 46766, Start Num: 30

Candidate Starts for Orwigg_52:

(15, 47380), (19, 47359), (21, 47353), (Start: 30 @47308 has 73 MA's), (31, 47296), (36, 47176), (37, 47146), (40, 47086), (41, 47050), (42, 47044), (44, 46912),

Gene: PLOT_85 Start: 59930, Stop: 60325, Start Num: 29

Candidate Starts for PLOT_85:

(7, 59807), (Start: 29 @59930 has 13 MA's), (34, 60005), (39, 60077), (40, 60110), (41, 60146), (42, 60152), (44, 60284), (45, 60302),

Gene: Penelope2018_84 Start: 59705, Stop: 60100, Start Num: 29

Candidate Starts for Penelope2018_84:

(7, 59582), (Start: 29 @59705 has 13 MA's), (34, 59780), (39, 59852), (40, 59885), (41, 59921), (42, 59927), (44, 60059), (45, 60077),

Gene: Phayeta_52 Start: 45475, Stop: 45032, Start Num: 30

Candidate Starts for Phayeta_52:

(Start: 30 @45475 has 73 MA's), (31, 45463), (36, 45343), (37, 45313), (40, 45253), (41, 45217), (42, 45211), (44, 45079),

Gene: PherrisBueller_60 Start: 39602, Stop: 39222, Start Num: 30

Candidate Starts for PherrisBueller_60:

(2, 39803), (16, 39659), (17, 39656), (Start: 30 @39602 has 73 MA's), (31, 39590), (40, 39434), (41, 39398), (42, 39392), (44, 39260),

Gene: Pollywog_86 Start: 51074, Stop: 51427, Start Num: 30

Candidate Starts for Pollywog_86:

(2, 50873), (16, 51017), (17, 51020), (Start: 30 @51074 has 73 MA's), (31, 51086), (40, 51206), (41, 51242), (42, 51248), (44, 51380),

Gene: Prager_84 Start: 59610, Stop: 60005, Start Num: 29

Candidate Starts for Prager_84:

(7, 59487), (Start: 29 @59610 has 13 MA's), (34, 59685), (39, 59757), (40, 59790), (41, 59826), (42, 59832), (44, 59964), (45, 59982),

Gene: ProMouse_60 Start: 41014, Stop: 40655, Start Num: 33

Candidate Starts for ProMouse_60:

(2, 41281), (16, 41137), (17, 41134), (Start: 30 @41080 has 73 MA's), (33, 41014), (40, 40870), (41, 40834), (42, 40828), (44, 40696), (45, 40678),

Gene: RedRaider77_10 Start: 3149, Stop: 3538, Start Num: 30

Candidate Starts for RedRaider77_10:

(Start: 30 @3149 has 73 MA's), (31, 3161), (40, 3317), (41, 3353), (42, 3359), (44, 3491),

Gene: Rialto_90 Start: 50654, Stop: 51067, Start Num: 30

Candidate Starts for Rialto_90:

(8, 50531), (24, 50624), (25, 50633), (Start: 30 @50654 has 73 MA's), (32, 50711), (35, 50750), (40, 50846), (41, 50882), (42, 50888), (44, 51020),

Gene: Rimmer_43 Start: 35365, Stop: 34928, Start Num: 30

Candidate Starts for Rimmer_43:

(15, 35437), (Start: 30 @35365 has 73 MA's), (31, 35353), (37, 35203), (40, 35143), (41, 35107), (42, 35101), (44, 34969),

Gene: Rimu_53 Start: 47304, Stop: 46915, Start Num: 30

Candidate Starts for Rimu_53:

(Start: 30 @47304 has 73 MA's), (31, 47292), (40, 47136), (41, 47100), (42, 47094), (44, 46962),

Gene: Rita1961_51 Start: 45594, Stop: 45151, Start Num: 30

Candidate Starts for Rita1961_51:

(Start: 30 @45594 has 73 MA's), (31, 45582), (36, 45462), (37, 45432), (40, 45372), (41, 45336), (42, 45330), (44, 45198),

Gene: Sabbb_88 Start: 48209, Stop: 48622, Start Num: 30

Candidate Starts for Sabbb_88:

(3, 48035), (4, 48044), (5, 48068), (8, 48086), (24, 48179), (25, 48188), (Start: 30 @48209 has 73 MA's), (32, 48266), (35, 48305), (40, 48401), (41, 48437), (42, 48443), (44, 48575),

Gene: Sandaddy_57 Start: 40445, Stop: 40086, Start Num: 30

Candidate Starts for Sandaddy_57:

(2, 40646), (16, 40502), (17, 40499), (Start: 30 @40445 has 73 MA's), (31, 40433), (40, 40298), (41, 40262), (42, 40256), (44, 40124),

Gene: ScoobyDoobyDoo_2 Start: 227, Stop: 613, Start Num: 30

Candidate Starts for ScoobyDoobyDoo_2:

(Start: 30 @227 has 73 MA's), (31, 239), (40, 395), (41, 431), (42, 437), (43, 515), (44, 569),

Gene: Scowl_62 Start: 40833, Stop: 40453, Start Num: 30

Candidate Starts for Scowl_62:

(16, 40890), (17, 40887), (Start: 30 @40833 has 73 MA's), (31, 40821), (40, 40665), (41, 40629), (42, 40623), (44, 40491),

Gene: Shaboozey_74 Start: 47299, Stop: 46889, Start Num: 22

Candidate Starts for Shaboozey_74:

(22, 47299), (23, 47287), (40, 47107), (41, 47071), (42, 47065), (44, 46933),

Gene: Slim_89 Start: 49993, Stop: 50406, Start Num: 30

Candidate Starts for Slim_89:

(3, 49819), (4, 49828), (5, 49852), (8, 49870), (24, 49963), (25, 49972), (Start: 30 @49993 has 73 MA's), (32, 50050), (35, 50089), (40, 50185), (41, 50221), (42, 50227), (44, 50359),

Gene: SlippinJimmy_52 Start: 46376, Stop: 45933, Start Num: 30

Candidate Starts for SlippinJimmy_52:

(Start: 30 @46376 has 73 MA's), (31, 46364), (36, 46244), (37, 46214), (40, 46154), (41, 46118), (42, 46112), (44, 45980),

Gene: Soile_53 Start: 47351, Stop: 46908, Start Num: 30

Candidate Starts for Soile_53:

(Start: 30 @47351 has 73 MA's), (31, 47339), (36, 47219), (37, 47189), (40, 47129), (41, 47093), (42, 47087), (44, 46955),

Gene: Sorpresa_58 Start: 40447, Stop: 40088, Start Num: 30

Candidate Starts for Sorpresa_58:

(2, 40648), (16, 40504), (17, 40501), (Start: 30 @40447 has 73 MA's), (31, 40435), (40, 40300), (41, 40264), (42, 40258), (44, 40126),

Gene: SpikeBT_59 Start: 40641, Stop: 40282, Start Num: 30

Candidate Starts for SpikeBT_59:

(2, 40842), (16, 40698), (17, 40695), (Start: 30 @40641 has 73 MA's), (31, 40629), (40, 40494), (41, 40458), (42, 40452), (44, 40320),

Gene: StormChicken_44 Start: 35973, Stop: 35536, Start Num: 30

Candidate Starts for StormChicken_44:

(15, 36045), (Start: 30 @35973 has 73 MA's), (31, 35961), (37, 35811), (40, 35751), (41, 35715), (42, 35709), (44, 35577),

Gene: StrongArm_59 Start: 41777, Stop: 41397, Start Num: 30

Candidate Starts for StrongArm_59:

(16, 41834), (17, 41831), (Start: 30 @41777 has 73 MA's), (31, 41765), (40, 41609), (41, 41573), (42, 41567), (44, 41435),

Gene: SuperheroCarly_83 Start: 59679, Stop: 60074, Start Num: 29

Candidate Starts for SuperheroCarly_83:

(9, 59580), (11, 59586), (12, 59598), (Start: 29 @59679 has 13 MA's), (34, 59754), (39, 59826), (40, 59859), (41, 59895), (42, 59901), (44, 60033), (45, 60051),

Gene: SwainyDoc_51 Start: 45606, Stop: 45163, Start Num: 30

Candidate Starts for SwainyDoc_51:

(Start: 30 @45606 has 73 MA's), (31, 45594), (36, 45474), (37, 45444), (40, 45384), (41, 45348), (42, 45342), (44, 45210),

Gene: TDanisky_93 Start: 48927, Stop: 49307, Start Num: 30

Candidate Starts for TDanisky_93:

(Start: 30 @48927 has 73 MA's), (40, 49092), (41, 49128), (42, 49134), (44, 49266),

Gene: TeamEdward_44 Start: 35970, Stop: 35533, Start Num: 30

Candidate Starts for TeamEdward_44:

(15, 36042), (Start: 30 @35970 has 73 MA's), (31, 35958), (37, 35808), (40, 35748), (41, 35712), (42, 35706), (44, 35574),

Gene: Thibault_65 Start: 47312, Stop: 46869, Start Num: 30

Candidate Starts for Thibault_65:

(Start: 30 @47312 has 73 MA's), (37, 47150), (38, 47147), (40, 47090), (41, 47054), (42, 47048), (44, 46916),

Gene: Thoth_84 Start: 59759, Stop: 60154, Start Num: 29

Candidate Starts for Thoth_84:

(7, 59636), (Start: 29 @59759 has 13 MA's), (34, 59834), (39, 59906), (40, 59939), (41, 59975), (42, 59981), (44, 60113), (45, 60131),

Gene: TinyTerror_51 Start: 45641, Stop: 45198, Start Num: 30

Candidate Starts for TinyTerror_51:

(Start: 30 @45641 has 73 MA's), (31, 45629), (36, 45509), (37, 45479), (40, 45419), (41, 45383), (42, 45377), (44, 45245),

Gene: VasuNzinga_9 Start: 2804, Stop: 3184, Start Num: 30

Candidate Starts for VasuNzinga_9:

(Start: 30 @2804 has 73 MA's), (31, 2816), (40, 2972), (41, 3008), (42, 3014), (44, 3146),

Gene: Visconti_85 Start: 59720, Stop: 60115, Start Num: 29

Candidate Starts for Visconti_85:

(7, 59597), (Start: 29 @59720 has 13 MA's), (34, 59795), (39, 59867), (40, 59900), (41, 59936), (42, 59942), (44, 60074), (45, 60092),

Gene: WaldoWhy_85 Start: 59683, Stop: 60078, Start Num: 29

Candidate Starts for WaldoWhy_85:

(7, 59560), (Start: 29 @59683 has 13 MA's), (34, 59758), (39, 59830), (40, 59863), (41, 59899), (42, 59905), (44, 60037), (45, 60055),

Gene: Xiaokay_68 Start: 48228, Stop: 47791, Start Num: 30

Candidate Starts for Xiaokay_68:

(Start: 30 @48228 has 73 MA's), (37, 48066), (38, 48063), (40, 48006), (41, 47970), (42, 47964), (44, 47832),

Gene: Youngblood_44 Start: 35976, Stop: 35539, Start Num: 30

Candidate Starts for Youngblood_44:

(15, 36048), (Start: 30 @35976 has 73 MA's), (31, 35964), (37, 35814), (40, 35754), (41, 35718), (42, 35712), (44, 35580),