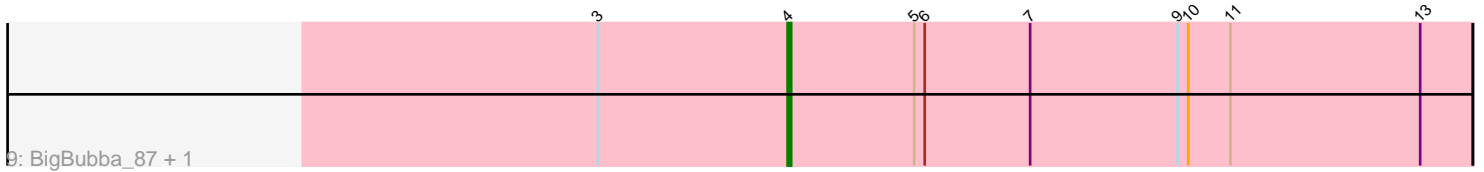
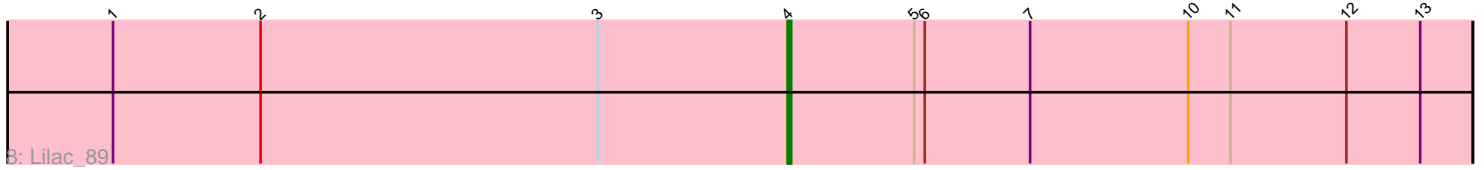
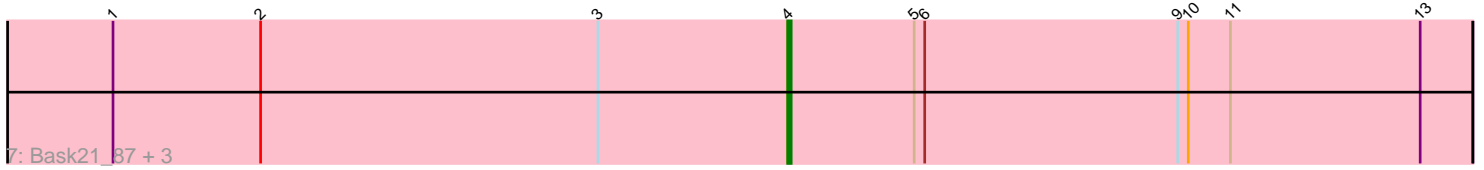
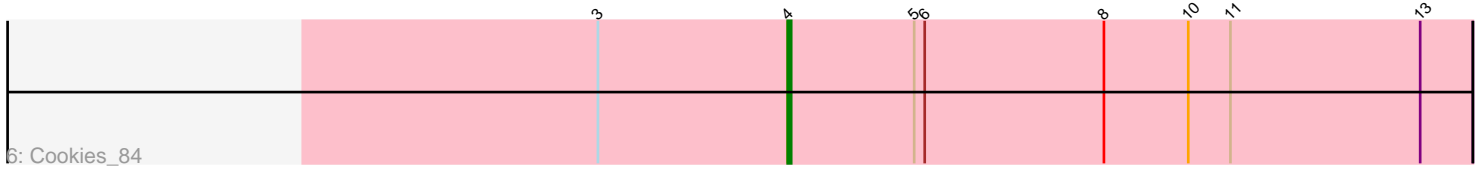
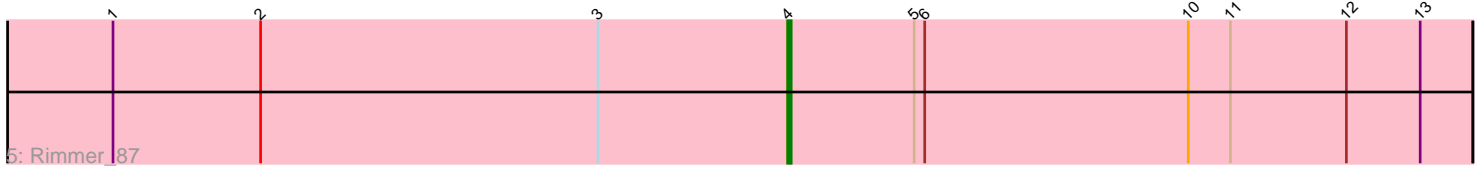
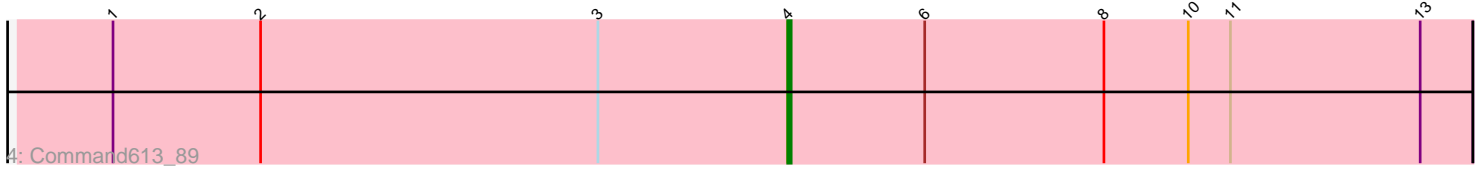
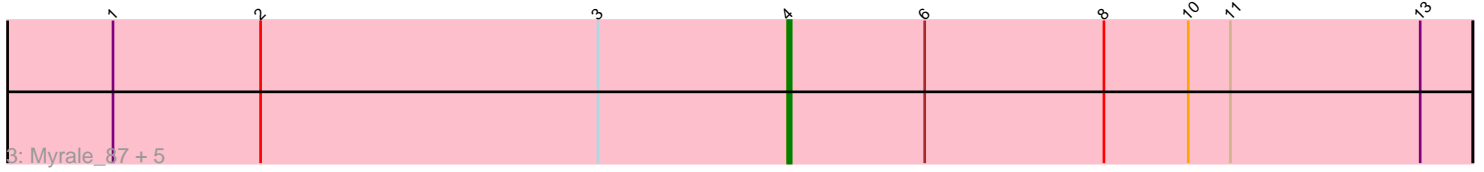
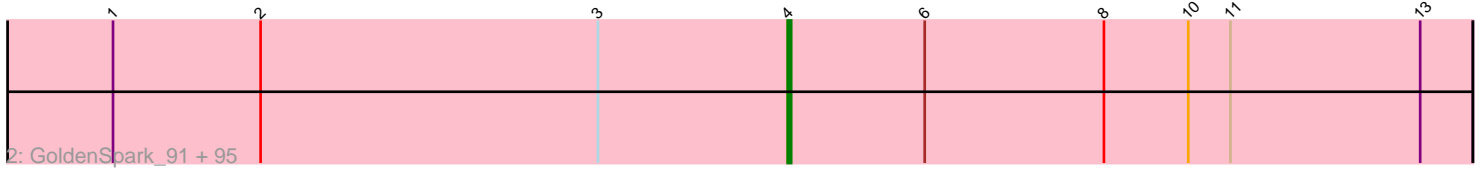
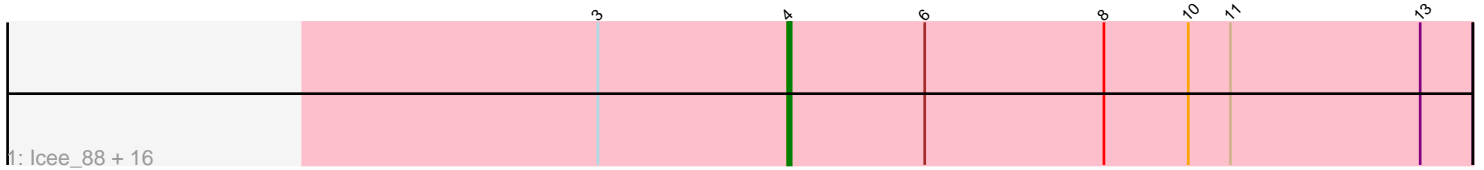


Pham 840



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 840 Report

This analysis was run 07/09/24 on database version 566.

Pham number 840 has 129 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Icee_88, Adnama_91, Traaww1_83, Glexan_86, Balomoji_87, Harella_87, Gator_85, Moldemort_90, Sotrice96_88, Cactus_90, SirDuracell_87, Wiggin_89, Daikon_89, Asriel_86, Barbarian_86, Flypotenuse_83, Hoonter_90
- Track 2 : GoldenSpark_91, MPhalcon_88, Lilizi_88, Willez_82, Filch_88, Petra64142_91, MISSy_88, Porky_86, Tarkin_86, Lilpickle_86, FireRed_91, Palpatine_89, Phrux_84, Bench_90, Highbury_86, TBrady12_90, 244_88, Maxxinista_89, Czyszczon1_88, Hopey_87, CrystalP_86, Terminus_90, Misfit_88, Thresher_89, StellaBean_85, NelitzaMV_85, Dusk_84, Ukulele_82, Pharsalus_84, Quallification_88, YassJohnny_84, BugsBunny_87, AmericanBeauty_94, ChosenOne_87, ShamWow_87, Mosby_83, Buck_88, Pumpkin_90, Marshmallow_85, Stark_88, Henry_85, Murica_90, Tomaszewski_82, BaboJay_85, Goku_86, Cjw1_87, Manda_89, Easy2Say_88, TeardropMSU_83, Nimrod_88, Saints25_86, Elite2014_86, Sassay_82, Teaspoon_88, Kostya_87, Youngblood_90, Policronamos_91, Stank_90, Eureka_86, Phaja_85, Kanye_84, Paperbeatsrock_86, SophKB_84, Argent26_91, GooberAzure_90, NoSleep_88, BadStone_84, Inca_84, Nala_89, Mindy_86, Emmina_87, Contagion_83, Elph10_87, Holt_92, DrDrey_87, Simpliphy_86, Toto_85, Xandras_86, MadamMonkfish_87, OrionPax_86, Murphy_87, Gemini_92, Phaux_89, BilboSwaggins_86, ABCat_84, PhatBacter_91, HufflyPuff_90, Bruin_84, Miniwave_82, HanKaySha_87, xkcd_90, JeTaime_87, Tuco_88, ShereKhan_85, Dumbo_87, IHOP_85
- Track 3 : Myrale_87, Rakim_88, Goldilocks_90, StolenFromERC_90, Gage_89, Kimchi_91
- Track 4 : Command613_89
- Track 5 : Rimmer_87
- Track 6 : Cookies_84
- Track 7 : Bask21_87, Amao_86, DoctorDiddles_86, ChotaBhai_87
- Track 8 : Lilac_89
- Track 9 : BigBubba_87, Pat3_85

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

The start number called the most often in the published annotations is 4, it was called in 121 of the 121 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244_88, ABCat_84, Adnama_91, Amao_86, AmericanBeauty_94, Argent26_91, Asriel_86, BaboJay_85, BadStone_84, Balomoji_87, Barbarian_86, Bask21_87, Bench_90, BigBubba_87, BilboSwaggins_86, Bruin_84, Buck_88, BugsBunny_87, Cactus_90, ChosenOne_87, ChotaBhai_87, Cjw1_87, Command613_89, Contagion_83, Cookies_84, CrystalP_86, Czyszczonek_88, Daikon_89, DoctorDiddles_86, DrDrey_87, Dumbo_87, Dusk_84, Easy2Say_88, Elite2014_86, Elph10_87, Emmina_87, Eureka_86, Filch_88, FireRed_91, Flypotenuse_83, Gage_89, Gator_85, Gemini_92, Glexan_86, Goku_86, GoldenSpark_91, Goldilocks_90, GooberAzure_90, HanKaySha_87, Harella_87, Henry_85, Highbury_86, Holt_92, Hoonter_90, Hopey_87, HufflyPuff_90, IHOP_85, Icee_88, Inca_84, JeTaime_87, Kanye_84, Kimchi_91, Kostya_87, Lilac_89, Lilizi_88, Lilipickle_86, MISSy_88, MPhalcon_88, MadamMonkfish_87, Manda_89, Marshmallow_85, Maxxinista_89, Mindy_86, Miniwave_82, Misfit_88, Moldemort_90, Mosby_83, Murica_90, Murphy_87, Myrale_87, Nala_89, NelitzaMV_85, Nimrod_88, NoSleep_88, OrionPax_86, Palpatine_89, Paperbeatsrock_86, Pat3_85, Petra64142_91, Phaja_85, Pharsalus_84, PhatBacter_91, Phaux_89, Phrux_84, Policronamos_91, Porky_86, Pumpkin_90, Qualification_88, Rakim_88, Rimmer_87, Saints25_86, Sassay_82, ShamWow_87, ShereKhan_85, Simpliphy_86, SirDuracell_87, SophKB_84, Sotrice96_88, Stank_90, Stark_88, StellaBean_85, StolenFromERC_90, TBrady12_90, Tarkin_86, TeardropMSU_83, Teaspoon_88, Terminus_90, Thresher_89, Tomaszewski_82, Toto_85, Traaww1_83, Tuco_88, Ukulele_82, Wiggin_89, Willez_82, Xandras_86, YassJohnny_84, Youngblood_90, xkcd_90,

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

-

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

-

Summary by start number:

Start 4:

- Found in 129 of 129 (100.0%) of genes in pham
- Manual Annotations of this start: 121 of 121
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 244_88 (E), ABCat_84 (E), Adnama_91 (E), Amao_86 (E), AmericanBeauty_94 (E), Argent26_91 (E), Asriel_86 (E), BaboJay_85 (E), BadStone_84 (E), Balomoji_87 (E), Barbarian_86 (E), Bask21_87 (E), Bench_90 (E), BigBubba_87 (E), BilboSwaggins_86 (E), Bruin_84 (E), Buck_88 (E), BugsBunny_87 (E), Cactus_90 (E), ChosenOne_87 (E), ChotaBhai_87 (E), Cjw1_87 (E), Command613_89 (E), Contagion_83 (E), Cookies_84 (E), CrystalP_86 (E), Czyszczonek_88 (E), Daikon_89 (E), DoctorDiddles_86 (E), DrDrey_87 (E), Dumbo_87 (E), Dusk_84 (E), Easy2Say_88 (E), Elite2014_86 (E), Elph10_87 (E), Emmina_87 (E), Eureka_86 (E), Filch_88 (E), FireRed_91 (E), Flypotenuse_83 (E), Gage_89 (E), Gator_85 (E), Gemini_92 (E), Glexan_86 (E), Goku_86 (E), GoldenSpark_91 (E), Goldilocks_90 (E), GooberAzure_90 (E), HanKaySha_87 (E), Harella_87 (E), Henry_85 (E), Highbury_86 (E), Holt_92 (E), Hoonter_90 (E), Hopey_87 (E), HufflyPuff_90 (E), IHOP_85 (E), Icee_88 (E), Inca_84 (E), JeTaime_87 (E), Kanye_84 (E), Kimchi_91 (E), Kostya_87 (E), Lilac_89 (E), Lilizi_88 (E), Lilipickle_86 (E), MISSy_88 (E), MPhalcon_88 (E), MadamMonkfish_87 (E), Manda_89 (E), Marshmallow_85 (E), Maxxinista_89 (E), Mindy_86 (E), Miniwave_82

(E), Misfit_88 (E), Moldemort_90 (E), Mosby_83 (E), Murica_90 (E), Murphy_87 (E), Myrale_87 (E), Nala_89 (E), NelitzaMV_85 (E), Nimrod_88 (E), NoSleep_88 (E), OrionPax_86 (E), Palpatine_89 (E), Paperbeatsrock_86 (E), Pat3_85 (E), Petra64142_91 (E), Phaja_85 (E), Pharsalus_84 (E), PhatBacter_91 (E), Phaux_89 (E), Phrux_84 (E), Policronamos_91 (E), Porky_86 (E), Pumpkin_90 (E), Quallification_88 (E), Rakim_88 (E), Rimmer_87 (E), Saints25_86 (E), Sassay_82 (E), ShamWow_87 (E), ShereKhan_85 (E), Simpliphy_86 (E), SirDuracell_87 (E), SophKB_84 (E), Sotrice96_88 (E), Stank_90 (E), Stark_88 (E), StellaBean_85 (E), StolenFromERC_90 (E), TBrady12_90 (E), Tarkin_86 (E), TeardropMSU_83 (E), Teaspoon_88 (E), Terminus_90 (E), Thresher_89 (E), Tomaszewski_82 (E), Toto_85 (E), Traaww1_83 (E), Tuco_88 (E), Ukulele_82 (E), Wiggin_89 (E), Willez_82 (E), Xandras_86 (E), YassJohnny_84 (E), Youngblood_90 (E), xkcd_90 (E),

Summary by clusters:

There is one cluster represented in this pham: E

Info for manual annotations of cluster E:

•Start number 4 was manually annotated 121 times for cluster E.

Gene Information:

Gene: 244_88 Start: 52699, Stop: 52893, Start Num: 4

Candidate Starts for 244_88:

(1, 52507), (2, 52549), (3, 52645), (Start: 4 @52699 has 121 MA's), (6, 52738), (8, 52789), (10, 52813), (11, 52825), (13, 52879),

Gene: ABCat_84 Start: 53091, Stop: 53285, Start Num: 4

Candidate Starts for ABCat_84:

(1, 52899), (2, 52941), (3, 53037), (Start: 4 @53091 has 121 MA's), (6, 53130), (8, 53181), (10, 53205), (11, 53217), (13, 53271),

Gene: Adnama_91 Start: 52977, Stop: 53171, Start Num: 4

Candidate Starts for Adnama_91:

(3, 52923), (Start: 4 @52977 has 121 MA's), (6, 53016), (8, 53067), (10, 53091), (11, 53103), (13, 53157),

Gene: Amao_86 Start: 52172, Stop: 52366, Start Num: 4

Candidate Starts for Amao_86:

(1, 51980), (2, 52022), (3, 52118), (Start: 4 @52172 has 121 MA's), (5, 52208), (6, 52211), (9, 52283), (10, 52286), (11, 52298), (13, 52352),

Gene: AmericanBeauty_94 Start: 53260, Stop: 53454, Start Num: 4

Candidate Starts for AmericanBeauty_94:

(1, 53068), (2, 53110), (3, 53206), (Start: 4 @53260 has 121 MA's), (6, 53299), (8, 53350), (10, 53374), (11, 53386), (13, 53440),

Gene: Argent26_91 Start: 52898, Stop: 53092, Start Num: 4

Candidate Starts for Argent26_91:

(1, 52706), (2, 52748), (3, 52844), (Start: 4 @52898 has 121 MA's), (6, 52937), (8, 52988), (10, 53012), (11, 53024), (13, 53078),

Gene: Asriel_86 Start: 51314, Stop: 51508, Start Num: 4

Candidate Starts for Asriel_86:

(3, 51260), (Start: 4 @51314 has 121 MA's), (6, 51353), (8, 51404), (10, 51428), (11, 51440), (13, 51494),

Gene: BaboJay_85 Start: 52700, Stop: 52894, Start Num: 4

Candidate Starts for BaboJay_85:

(1, 52508), (2, 52550), (3, 52646), (Start: 4 @52700 has 121 MA's), (6, 52739), (8, 52790), (10, 52814), (11, 52826), (13, 52880),

Gene: BadStone_84 Start: 52660, Stop: 52854, Start Num: 4

Candidate Starts for BadStone_84:

(1, 52468), (2, 52510), (3, 52606), (Start: 4 @52660 has 121 MA's), (6, 52699), (8, 52750), (10, 52774), (11, 52786), (13, 52840),

Gene: Balomoji_87 Start: 53084, Stop: 53278, Start Num: 4

Candidate Starts for Balomoji_87:

(3, 53030), (Start: 4 @53084 has 121 MA's), (6, 53123), (8, 53174), (10, 53198), (11, 53210), (13, 53264),

Gene: Barbarian_86 Start: 51314, Stop: 51508, Start Num: 4

Candidate Starts for Barbarian_86:

(3, 51260), (Start: 4 @51314 has 121 MA's), (6, 51353), (8, 51404), (10, 51428), (11, 51440), (13, 51494),

Gene: Bask21_87 Start: 51937, Stop: 52131, Start Num: 4

Candidate Starts for Bask21_87:

(1, 51745), (2, 51787), (3, 51883), (Start: 4 @51937 has 121 MA's), (5, 51973), (6, 51976), (9, 52048), (10, 52051), (11, 52063), (13, 52117),

Gene: Bench_90 Start: 52755, Stop: 52949, Start Num: 4

Candidate Starts for Bench_90:

(1, 52563), (2, 52605), (3, 52701), (Start: 4 @52755 has 121 MA's), (6, 52794), (8, 52845), (10, 52869), (11, 52881), (13, 52935),

Gene: BigBubba_87 Start: 52330, Stop: 52524, Start Num: 4

Candidate Starts for BigBubba_87:

(3, 52276), (Start: 4 @52330 has 121 MA's), (5, 52366), (6, 52369), (7, 52399), (9, 52441), (10, 52444), (11, 52456), (13, 52510),

Gene: BilboSwaggins_86 Start: 53057, Stop: 53251, Start Num: 4

Candidate Starts for BilboSwaggins_86:

(1, 52865), (2, 52907), (3, 53003), (Start: 4 @53057 has 121 MA's), (6, 53096), (8, 53147), (10, 53171), (11, 53183), (13, 53237),

Gene: Bruin_84 Start: 51634, Stop: 51828, Start Num: 4

Candidate Starts for Bruin_84:

(1, 51442), (2, 51484), (3, 51580), (Start: 4 @51634 has 121 MA's), (6, 51673), (8, 51724), (10, 51748), (11, 51760), (13, 51814),

Gene: Buck_88 Start: 53339, Stop: 53533, Start Num: 4

Candidate Starts for Buck_88:

(1, 53147), (2, 53189), (3, 53285), (Start: 4 @53339 has 121 MA's), (6, 53378), (8, 53429), (10, 53453), (11, 53465), (13, 53519),

Gene: BugsBunny_87 Start: 53163, Stop: 53357, Start Num: 4

Candidate Starts for BugsBunny_87:

(1, 52971), (2, 53013), (3, 53109), (Start: 4 @53163 has 121 MA's), (6, 53202), (8, 53253), (10, 53277), (11, 53289), (13, 53343),

Gene: Cactus_90 Start: 51978, Stop: 52172, Start Num: 4

Candidate Starts for Cactus_90:

(3, 51924), (Start: 4 @51978 has 121 MA's), (6, 52017), (8, 52068), (10, 52092), (11, 52104), (13, 52158),

Gene: ChosenOne_87 Start: 52115, Stop: 52309, Start Num: 4

Candidate Starts for ChosenOne_87:

(1, 51923), (2, 51965), (3, 52061), (Start: 4 @52115 has 121 MA's), (6, 52154), (8, 52205), (10, 52229), (11, 52241), (13, 52295),

Gene: ChotaBhai_87 Start: 52302, Stop: 52496, Start Num: 4

Candidate Starts for ChotaBhai_87:

(1, 52110), (2, 52152), (3, 52248), (Start: 4 @52302 has 121 MA's), (5, 52338), (6, 52341), (9, 52413), (10, 52416), (11, 52428), (13, 52482),

Gene: Cjw1_87 Start: 53809, Stop: 54003, Start Num: 4

Candidate Starts for Cjw1_87:

(1, 53617), (2, 53659), (3, 53755), (Start: 4 @53809 has 121 MA's), (6, 53848), (8, 53899), (10, 53923), (11, 53935), (13, 53989),

Gene: Command613_89 Start: 53154, Stop: 53348, Start Num: 4

Candidate Starts for Command613_89:

(1, 52962), (2, 53004), (3, 53100), (Start: 4 @53154 has 121 MA's), (6, 53193), (8, 53244), (10, 53268), (11, 53280), (13, 53334),

Gene: Contagion_83 Start: 51915, Stop: 52109, Start Num: 4

Candidate Starts for Contagion_83:

(1, 51723), (2, 51765), (3, 51861), (Start: 4 @51915 has 121 MA's), (6, 51954), (8, 52005), (10, 52029), (11, 52041), (13, 52095),

Gene: Cookies_84 Start: 52159, Stop: 52353, Start Num: 4

Candidate Starts for Cookies_84:

(3, 52105), (Start: 4 @52159 has 121 MA's), (5, 52195), (6, 52198), (8, 52249), (10, 52273), (11, 52285), (13, 52339),

Gene: CrystalP_86 Start: 53057, Stop: 53251, Start Num: 4

Candidate Starts for CrystalP_86:

(1, 52865), (2, 52907), (3, 53003), (Start: 4 @53057 has 121 MA's), (6, 53096), (8, 53147), (10, 53171), (11, 53183), (13, 53237),

Gene: Czyszczone1_88 Start: 52618, Stop: 52812, Start Num: 4

Candidate Starts for Czyszczone1_88:

(1, 52426), (2, 52468), (3, 52564), (Start: 4 @52618 has 121 MA's), (6, 52657), (8, 52708), (10, 52732), (11, 52744), (13, 52798),

Gene: Daikon_89 Start: 53105, Stop: 53299, Start Num: 4

Candidate Starts for Daikon_89:

(3, 53051), (Start: 4 @53105 has 121 MA's), (6, 53144), (8, 53195), (10, 53219), (11, 53231), (13, 53285),

Gene: DoctorDiddles_86 Start: 52346, Stop: 52540, Start Num: 4

Candidate Starts for DoctorDiddles_86:

(1, 52154), (2, 52196), (3, 52292), (Start: 4 @52346 has 121 MA's), (5, 52382), (6, 52385), (9, 52457), (10, 52460), (11, 52472), (13, 52526),

Gene: DrDrey_87 Start: 53537, Stop: 53731, Start Num: 4

Candidate Starts for DrDrey_87:

(1, 53345), (2, 53387), (3, 53483), (Start: 4 @53537 has 121 MA's), (6, 53576), (8, 53627), (10, 53651), (11, 53663), (13, 53717),

Gene: Dumbo_87 Start: 52020, Stop: 52214, Start Num: 4

Candidate Starts for Dumbo_87:

(1, 51828), (2, 51870), (3, 51966), (Start: 4 @52020 has 121 MA's), (6, 52059), (8, 52110), (10, 52134), (11, 52146), (13, 52200),

Gene: Dusk_84 Start: 52320, Stop: 52514, Start Num: 4

Candidate Starts for Dusk_84:

(1, 52128), (2, 52170), (3, 52266), (Start: 4 @52320 has 121 MA's), (6, 52359), (8, 52410), (10, 52434), (11, 52446), (13, 52500),

Gene: Easy2Say_88 Start: 53522, Stop: 53716, Start Num: 4

Candidate Starts for Easy2Say_88:

(1, 53330), (2, 53372), (3, 53468), (Start: 4 @53522 has 121 MA's), (6, 53561), (8, 53612), (10, 53636), (11, 53648), (13, 53702),

Gene: Elite2014_86 Start: 52114, Stop: 52308, Start Num: 4

Candidate Starts for Elite2014_86:

(1, 51922), (2, 51964), (3, 52060), (Start: 4 @52114 has 121 MA's), (6, 52153), (8, 52204), (10, 52228), (11, 52240), (13, 52294),

Gene: Elph10_87 Start: 52116, Stop: 52310, Start Num: 4

Candidate Starts for Elph10_87:

(1, 51924), (2, 51966), (3, 52062), (Start: 4 @52116 has 121 MA's), (6, 52155), (8, 52206), (10, 52230), (11, 52242), (13, 52296),

Gene: Emmina_87 Start: 52018, Stop: 52212, Start Num: 4

Candidate Starts for Emmina_87:

(1, 51826), (2, 51868), (3, 51964), (Start: 4 @52018 has 121 MA's), (6, 52057), (8, 52108), (10, 52132), (11, 52144), (13, 52198),

Gene: Eureka_86 Start: 53030, Stop: 53224, Start Num: 4

Candidate Starts for Eureka_86:

(1, 52838), (2, 52880), (3, 52976), (Start: 4 @53030 has 121 MA's), (6, 53069), (8, 53120), (10, 53144), (11, 53156), (13, 53210),

Gene: Filch_88 Start: 52043, Stop: 52237, Start Num: 4

Candidate Starts for Filch_88:

(1, 51851), (2, 51893), (3, 51989), (Start: 4 @52043 has 121 MA's), (6, 52082), (8, 52133), (10, 52157), (11, 52169), (13, 52223),

Gene: FireRed_91 Start: 53608, Stop: 53802, Start Num: 4

Candidate Starts for FireRed_91:

(1, 53416), (2, 53458), (3, 53554), (Start: 4 @53608 has 121 MA's), (6, 53647), (8, 53698), (10, 53722), (11, 53734), (13, 53788),

Gene: Flypotenuse_83 Start: 51968, Stop: 52162, Start Num: 4

Candidate Starts for Flypotenuse_83:

(3, 51914), (Start: 4 @51968 has 121 MA's), (6, 52007), (8, 52058), (10, 52082), (11, 52094), (13, 52148),

Gene: Gage_89 Start: 52761, Stop: 52955, Start Num: 4

Candidate Starts for Gage_89:

(1, 52569), (2, 52611), (3, 52707), (Start: 4 @52761 has 121 MA's), (6, 52800), (8, 52851), (10, 52875), (11, 52887), (13, 52941),

Gene: Gator_85 Start: 52811, Stop: 53005, Start Num: 4

Candidate Starts for Gator_85:

(3, 52757), (Start: 4 @52811 has 121 MA's), (6, 52850), (8, 52901), (10, 52925), (11, 52937), (13, 52991),

Gene: Gemini_92 Start: 53415, Stop: 53609, Start Num: 4

Candidate Starts for Gemini_92:

(1, 53223), (2, 53265), (3, 53361), (Start: 4 @53415 has 121 MA's), (6, 53454), (8, 53505), (10, 53529), (11, 53541), (13, 53595),

Gene: Glexan_86 Start: 53098, Stop: 53292, Start Num: 4

Candidate Starts for Glexan_86:

(3, 53044), (Start: 4 @53098 has 121 MA's), (6, 53137), (8, 53188), (10, 53212), (11, 53224), (13, 53278),

Gene: Goku_86 Start: 52759, Stop: 52953, Start Num: 4

Candidate Starts for Goku_86:

(1, 52567), (2, 52609), (3, 52705), (Start: 4 @52759 has 121 MA's), (6, 52798), (8, 52849), (10, 52873), (11, 52885), (13, 52939),

Gene: GoldenSpark_91 Start: 52898, Stop: 53092, Start Num: 4

Candidate Starts for GoldenSpark_91:

(1, 52706), (2, 52748), (3, 52844), (Start: 4 @52898 has 121 MA's), (6, 52937), (8, 52988), (10, 53012), (11, 53024), (13, 53078),

Gene: Goldilocks_90 Start: 52256, Stop: 52450, Start Num: 4

Candidate Starts for Goldilocks_90:

(1, 52064), (2, 52106), (3, 52202), (Start: 4 @52256 has 121 MA's), (6, 52295), (8, 52346), (10, 52370), (11, 52382), (13, 52436),

Gene: GooberAzure_90 Start: 52898, Stop: 53092, Start Num: 4

Candidate Starts for GooberAzure_90:

(1, 52706), (2, 52748), (3, 52844), (Start: 4 @52898 has 121 MA's), (6, 52937), (8, 52988), (10, 53012), (11, 53024), (13, 53078),

Gene: HanKaySha_87 Start: 52196, Stop: 52390, Start Num: 4

Candidate Starts for HanKaySha_87:

(1, 52004), (2, 52046), (3, 52142), (Start: 4 @52196 has 121 MA's), (6, 52235), (8, 52286), (10, 52310), (11, 52322), (13, 52376),

Gene: Harella_87 Start: 53614, Stop: 53808, Start Num: 4

Candidate Starts for Harella_87:

(3, 53560), (Start: 4 @53614 has 121 MA's), (6, 53653), (8, 53704), (10, 53728), (11, 53740), (13, 53794),

Gene: Henry_85 Start: 52497, Stop: 52691, Start Num: 4

Candidate Starts for Henry_85:

(1, 52305), (2, 52347), (3, 52443), (Start: 4 @52497 has 121 MA's), (6, 52536), (8, 52587), (10, 52611), (11, 52623), (13, 52677),

Gene: Highbury_86 Start: 52187, Stop: 52381, Start Num: 4

Candidate Starts for Highbury_86:

(1, 51995), (2, 52037), (3, 52133), (Start: 4 @52187 has 121 MA's), (6, 52226), (8, 52277), (10, 52301), (11, 52313), (13, 52367),

Gene: Holt_92 Start: 53312, Stop: 53506, Start Num: 4

Candidate Starts for Holt_92:

(1, 53120), (2, 53162), (3, 53258), (Start: 4 @53312 has 121 MA's), (6, 53351), (8, 53402), (10, 53426), (11, 53438), (13, 53492),

Gene: Hoonter_90 Start: 52758, Stop: 52952, Start Num: 4

Candidate Starts for Hoonter_90:

(3, 52704), (Start: 4 @52758 has 121 MA's), (6, 52797), (8, 52848), (10, 52872), (11, 52884), (13, 52938),

Gene: Hokey_87 Start: 52728, Stop: 52922, Start Num: 4

Candidate Starts for Hokey_87:

(1, 52536), (2, 52578), (3, 52674), (Start: 4 @52728 has 121 MA's), (6, 52767), (8, 52818), (10, 52842), (11, 52854), (13, 52908),

Gene: HufflyPuff_90 Start: 53561, Stop: 53755, Start Num: 4

Candidate Starts for HufflyPuff_90:

(1, 53369), (2, 53411), (3, 53507), (Start: 4 @53561 has 121 MA's), (6, 53600), (8, 53651), (10, 53675), (11, 53687), (13, 53741),

Gene: IHOP_85 Start: 52660, Stop: 52854, Start Num: 4

Candidate Starts for IHOP_85:

(1, 52468), (2, 52510), (3, 52606), (Start: 4 @52660 has 121 MA's), (6, 52699), (8, 52750), (10, 52774), (11, 52786), (13, 52840),

Gene: Icee_88 Start: 52425, Stop: 52619, Start Num: 4

Candidate Starts for Icee_88:

(3, 52371), (Start: 4 @52425 has 121 MA's), (6, 52464), (8, 52515), (10, 52539), (11, 52551), (13, 52605),

Gene: Inca_84 Start: 51149, Stop: 51343, Start Num: 4

Candidate Starts for Inca_84:

(1, 50957), (2, 50999), (3, 51095), (Start: 4 @51149 has 121 MA's), (6, 51188), (8, 51239), (10, 51263), (11, 51275), (13, 51329),

Gene: JeTaime_87 Start: 53377, Stop: 53571, Start Num: 4

Candidate Starts for JeTaime_87:

(1, 53185), (2, 53227), (3, 53323), (Start: 4 @53377 has 121 MA's), (6, 53416), (8, 53467), (10, 53491), (11, 53503), (13, 53557),

Gene: Kanye_84 Start: 52244, Stop: 52438, Start Num: 4

Candidate Starts for Kanye_84:

(1, 52052), (2, 52094), (3, 52190), (Start: 4 @52244 has 121 MA's), (6, 52283), (8, 52334), (10, 52358), (11, 52370), (13, 52424),

Gene: Kimchi_91 Start: 52764, Stop: 52958, Start Num: 4

Candidate Starts for Kimchi_91:

(1, 52572), (2, 52614), (3, 52710), (Start: 4 @52764 has 121 MA's), (6, 52803), (8, 52854), (10, 52878), (11, 52890), (13, 52944),

Gene: Kostya_87 Start: 52762, Stop: 52956, Start Num: 4

Candidate Starts for Kostya_87:

(1, 52570), (2, 52612), (3, 52708), (Start: 4 @52762 has 121 MA's), (6, 52801), (8, 52852), (10, 52876), (11, 52888), (13, 52942),

Gene: Lilac_89 Start: 52513, Stop: 52707, Start Num: 4

Candidate Starts for Lilac_89:

(1, 52321), (2, 52363), (3, 52459), (Start: 4 @52513 has 121 MA's), (5, 52549), (6, 52552), (7, 52582), (10, 52627), (11, 52639), (12, 52672), (13, 52693),

Gene: Lilizi_88 Start: 52226, Stop: 52420, Start Num: 4

Candidate Starts for Lilizi_88:

(1, 52034), (2, 52076), (3, 52172), (Start: 4 @52226 has 121 MA's), (6, 52265), (8, 52316), (10, 52340), (11, 52352), (13, 52406),

Gene: Lilpickle_86 Start: 52114, Stop: 52308, Start Num: 4

Candidate Starts for Lilpickle_86:

(1, 51922), (2, 51964), (3, 52060), (Start: 4 @52114 has 121 MA's), (6, 52153), (8, 52204), (10, 52228), (11, 52240), (13, 52294),

Gene: MISSy_88 Start: 52620, Stop: 52814, Start Num: 4

Candidate Starts for MISSy_88:

(1, 52428), (2, 52470), (3, 52566), (Start: 4 @52620 has 121 MA's), (6, 52659), (8, 52710), (10, 52734), (11, 52746), (13, 52800),

Gene: MPhalcon_88 Start: 52613, Stop: 52807, Start Num: 4

Candidate Starts for MPhalcon_88:

(1, 52421), (2, 52463), (3, 52559), (Start: 4 @52613 has 121 MA's), (6, 52652), (8, 52703), (10, 52727), (11, 52739), (13, 52793),

Gene: MadamMonkfish_87 Start: 51841, Stop: 52035, Start Num: 4

Candidate Starts for MadamMonkfish_87:

(1, 51649), (2, 51691), (3, 51787), (Start: 4 @51841 has 121 MA's), (6, 51880), (8, 51931), (10, 51955), (11, 51967), (13, 52021),

Gene: Manda_89 Start: 54109, Stop: 54303, Start Num: 4

Candidate Starts for Manda_89:

(1, 53917), (2, 53959), (3, 54055), (Start: 4 @54109 has 121 MA's), (6, 54148), (8, 54199), (10, 54223), (11, 54235), (13, 54289),

Gene: Marshmallow_85 Start: 53390, Stop: 53584, Start Num: 4

Candidate Starts for Marshmallow_85:

(1, 53198), (2, 53240), (3, 53336), (Start: 4 @53390 has 121 MA's), (6, 53429), (8, 53480), (10, 53504), (11, 53516), (13, 53570),

Gene: Maxxinista_89 Start: 52486, Stop: 52680, Start Num: 4

Candidate Starts for Maxxinista_89:

(1, 52294), (2, 52336), (3, 52432), (Start: 4 @52486 has 121 MA's), (6, 52525), (8, 52576), (10, 52600), (11, 52612), (13, 52666),

Gene: Mindy_86 Start: 51663, Stop: 51857, Start Num: 4

Candidate Starts for Mindy_86:

(1, 51471), (2, 51513), (3, 51609), (Start: 4 @51663 has 121 MA's), (6, 51702), (8, 51753), (10, 51777), (11, 51789), (13, 51843),

Gene: Miniwave_82 Start: 52158, Stop: 52352, Start Num: 4

Candidate Starts for Miniwave_82:

(1, 51966), (2, 52008), (3, 52104), (Start: 4 @52158 has 121 MA's), (6, 52197), (8, 52248), (10, 52272), (11, 52284), (13, 52338),

Gene: Misfit_88 Start: 53632, Stop: 53826, Start Num: 4

Candidate Starts for Misfit_88:

(1, 53440), (2, 53482), (3, 53578), (Start: 4 @53632 has 121 MA's), (6, 53671), (8, 53722), (10, 53746), (11, 53758), (13, 53812),

Gene: Moldemort_90 Start: 52577, Stop: 52771, Start Num: 4

Candidate Starts for Moldemort_90:

(3, 52523), (Start: 4 @52577 has 121 MA's), (6, 52616), (8, 52667), (10, 52691), (11, 52703), (13, 52757),

Gene: Mosby_83 Start: 51915, Stop: 52109, Start Num: 4

Candidate Starts for Mosby_83:

(1, 51723), (2, 51765), (3, 51861), (Start: 4 @51915 has 121 MA's), (6, 51954), (8, 52005), (10, 52029), (11, 52041), (13, 52095),

Gene: Murica_90 Start: 53561, Stop: 53755, Start Num: 4

Candidate Starts for Murica_90:

(1, 53369), (2, 53411), (3, 53507), (Start: 4 @53561 has 121 MA's), (6, 53600), (8, 53651), (10, 53675), (11, 53687), (13, 53741),

Gene: Murphy_87 Start: 52998, Stop: 53192, Start Num: 4

Candidate Starts for Murphy_87:

(1, 52806), (2, 52848), (3, 52944), (Start: 4 @52998 has 121 MA's), (6, 53037), (8, 53088), (10, 53112), (11, 53124), (13, 53178),

Gene: Myrale_87 Start: 53121, Stop: 53315, Start Num: 4

Candidate Starts for Myrale_87:

(1, 52929), (2, 52971), (3, 53067), (Start: 4 @53121 has 121 MA's), (6, 53160), (8, 53211), (10, 53235), (11, 53247), (13, 53301),

Gene: Nala_89 Start: 53122, Stop: 53316, Start Num: 4

Candidate Starts for Nala_89:

(1, 52930), (2, 52972), (3, 53068), (Start: 4 @53122 has 121 MA's), (6, 53161), (8, 53212), (10, 53236), (11, 53248), (13, 53302),

Gene: NelitzaMV_85 Start: 52204, Stop: 52398, Start Num: 4

Candidate Starts for NelitzaMV_85:

(1, 52012), (2, 52054), (3, 52150), (Start: 4 @52204 has 121 MA's), (6, 52243), (8, 52294), (10, 52318), (11, 52330), (13, 52384),

Gene: Nimrod_88 Start: 53825, Stop: 54019, Start Num: 4

Candidate Starts for Nimrod_88:

(1, 53633), (2, 53675), (3, 53771), (Start: 4 @53825 has 121 MA's), (6, 53864), (8, 53915), (10, 53939), (11, 53951), (13, 54005),

Gene: NoSleep_88 Start: 52459, Stop: 52653, Start Num: 4

Candidate Starts for NoSleep_88:

(1, 52267), (2, 52309), (3, 52405), (Start: 4 @52459 has 121 MA's), (6, 52498), (8, 52549), (10, 52573), (11, 52585), (13, 52639),

Gene: OrionPax_86 Start: 52210, Stop: 52404, Start Num: 4

Candidate Starts for OrionPax_86:

(1, 52018), (2, 52060), (3, 52156), (Start: 4 @52210 has 121 MA's), (6, 52249), (8, 52300), (10, 52324), (11, 52336), (13, 52390),

Gene: Palpatine_89 Start: 53588, Stop: 53782, Start Num: 4

Candidate Starts for Palpatine_89:

(1, 53396), (2, 53438), (3, 53534), (Start: 4 @53588 has 121 MA's), (6, 53627), (8, 53678), (10, 53702), (11, 53714), (13, 53768),

Gene: Paperbeatsrock_86 Start: 52836, Stop: 53030, Start Num: 4

Candidate Starts for Paperbeatsrock_86:

(1, 52644), (2, 52686), (3, 52782), (Start: 4 @52836 has 121 MA's), (6, 52875), (8, 52926), (10, 52950), (11, 52962), (13, 53016),

Gene: Pat3_85 Start: 51231, Stop: 51425, Start Num: 4

Candidate Starts for Pat3_85:

(3, 51177), (Start: 4 @51231 has 121 MA's), (5, 51267), (6, 51270), (7, 51300), (9, 51342), (10, 51345), (11, 51357), (13, 51411),

Gene: Petra64142_91 Start: 54055, Stop: 54249, Start Num: 4

Candidate Starts for Petra64142_91:

(1, 53863), (2, 53905), (3, 54001), (Start: 4 @54055 has 121 MA's), (6, 54094), (8, 54145), (10, 54169), (11, 54181), (13, 54235),

Gene: Phaja_85 Start: 52662, Stop: 52856, Start Num: 4

Candidate Starts for Phaja_85:

(1, 52470), (2, 52512), (3, 52608), (Start: 4 @52662 has 121 MA's), (6, 52701), (8, 52752), (10, 52776), (11, 52788), (13, 52842),

Gene: Pharsalus_84 Start: 52636, Stop: 52830, Start Num: 4
Candidate Starts for Pharsalus_84:
(1, 52444), (2, 52486), (3, 52582), (Start: 4 @52636 has 121 MA's), (6, 52675), (8, 52726), (10, 52750), (11, 52762), (13, 52816),

Gene: PhatBacter_91 Start: 53608, Stop: 53802, Start Num: 4
Candidate Starts for PhatBacter_91:
(1, 53416), (2, 53458), (3, 53554), (Start: 4 @53608 has 121 MA's), (6, 53647), (8, 53698), (10, 53722), (11, 53734), (13, 53788),

Gene: Phaux_89 Start: 53603, Stop: 53797, Start Num: 4
Candidate Starts for Phaux_89:
(1, 53411), (2, 53453), (3, 53549), (Start: 4 @53603 has 121 MA's), (6, 53642), (8, 53693), (10, 53717), (11, 53729), (13, 53783),

Gene: Phrux_84 Start: 52157, Stop: 52351, Start Num: 4
Candidate Starts for Phrux_84:
(1, 51965), (2, 52007), (3, 52103), (Start: 4 @52157 has 121 MA's), (6, 52196), (8, 52247), (10, 52271), (11, 52283), (13, 52337),

Gene: Policronamos_91 Start: 53603, Stop: 53797, Start Num: 4
Candidate Starts for Policronamos_91:
(1, 53411), (2, 53453), (3, 53549), (Start: 4 @53603 has 121 MA's), (6, 53642), (8, 53693), (10, 53717), (11, 53729), (13, 53783),

Gene: Porky_86 Start: 52026, Stop: 52220, Start Num: 4
Candidate Starts for Porky_86:
(1, 51834), (2, 51876), (3, 51972), (Start: 4 @52026 has 121 MA's), (6, 52065), (8, 52116), (10, 52140), (11, 52152), (13, 52206),

Gene: Pumpkin_90 Start: 53254, Stop: 53448, Start Num: 4
Candidate Starts for Pumpkin_90:
(1, 53062), (2, 53104), (3, 53200), (Start: 4 @53254 has 121 MA's), (6, 53293), (8, 53344), (10, 53368), (11, 53380), (13, 53434),

Gene: Quallification_88 Start: 53244, Stop: 53438, Start Num: 4
Candidate Starts for Quallification_88:
(1, 53052), (2, 53094), (3, 53190), (Start: 4 @53244 has 121 MA's), (6, 53283), (8, 53334), (10, 53358), (11, 53370), (13, 53424),

Gene: Rakim_88 Start: 52573, Stop: 52767, Start Num: 4
Candidate Starts for Rakim_88:
(1, 52381), (2, 52423), (3, 52519), (Start: 4 @52573 has 121 MA's), (6, 52612), (8, 52663), (10, 52687), (11, 52699), (13, 52753),

Gene: Rimmer_87 Start: 52613, Stop: 52807, Start Num: 4
Candidate Starts for Rimmer_87:
(1, 52421), (2, 52463), (3, 52559), (Start: 4 @52613 has 121 MA's), (5, 52649), (6, 52652), (10, 52727), (11, 52739), (12, 52772), (13, 52793),

Gene: Saints25_86 Start: 52187, Stop: 52381, Start Num: 4
Candidate Starts for Saints25_86:

(1, 51995), (2, 52037), (3, 52133), (Start: 4 @52187 has 121 MA's), (6, 52226), (8, 52277), (10, 52301), (11, 52313), (13, 52367),

Gene: Sassay_82 Start: 50877, Stop: 51071, Start Num: 4

Candidate Starts for Sassay_82:

(1, 50685), (2, 50727), (3, 50823), (Start: 4 @50877 has 121 MA's), (6, 50916), (8, 50967), (10, 50991), (11, 51003), (13, 51057),

Gene: ShamWow_87 Start: 53057, Stop: 53251, Start Num: 4

Candidate Starts for ShamWow_87:

(1, 52865), (2, 52907), (3, 53003), (Start: 4 @53057 has 121 MA's), (6, 53096), (8, 53147), (10, 53171), (11, 53183), (13, 53237),

Gene: ShereKhan_85 Start: 53169, Stop: 53363, Start Num: 4

Candidate Starts for ShereKhan_85:

(1, 52977), (2, 53019), (3, 53115), (Start: 4 @53169 has 121 MA's), (6, 53208), (8, 53259), (10, 53283), (11, 53295), (13, 53349),

Gene: Simpliphy_86 Start: 52177, Stop: 52371, Start Num: 4

Candidate Starts for Simpliphy_86:

(1, 51985), (2, 52027), (3, 52123), (Start: 4 @52177 has 121 MA's), (6, 52216), (8, 52267), (10, 52291), (11, 52303), (13, 52357),

Gene: SirDuracell_87 Start: 51828, Stop: 52022, Start Num: 4

Candidate Starts for SirDuracell_87:

(3, 51774), (Start: 4 @51828 has 121 MA's), (6, 51867), (8, 51918), (10, 51942), (11, 51954), (13, 52008),

Gene: SophKB_84 Start: 51855, Stop: 52049, Start Num: 4

Candidate Starts for SophKB_84:

(1, 51663), (2, 51705), (3, 51801), (Start: 4 @51855 has 121 MA's), (6, 51894), (8, 51945), (10, 51969), (11, 51981), (13, 52035),

Gene: Sotrice96_88 Start: 52721, Stop: 52915, Start Num: 4

Candidate Starts for Sotrice96_88:

(3, 52667), (Start: 4 @52721 has 121 MA's), (6, 52760), (8, 52811), (10, 52835), (11, 52847), (13, 52901),

Gene: Stank_90 Start: 53116, Stop: 53310, Start Num: 4

Candidate Starts for Stank_90:

(1, 52924), (2, 52966), (3, 53062), (Start: 4 @53116 has 121 MA's), (6, 53155), (8, 53206), (10, 53230), (11, 53242), (13, 53296),

Gene: Stark_88 Start: 52657, Stop: 52851, Start Num: 4

Candidate Starts for Stark_88:

(1, 52465), (2, 52507), (3, 52603), (Start: 4 @52657 has 121 MA's), (6, 52696), (8, 52747), (10, 52771), (11, 52783), (13, 52837),

Gene: StellaBean_85 Start: 52381, Stop: 52575, Start Num: 4

Candidate Starts for StellaBean_85:

(1, 52189), (2, 52231), (3, 52327), (Start: 4 @52381 has 121 MA's), (6, 52420), (8, 52471), (10, 52495), (11, 52507), (13, 52561),

Gene: StolenFromERC_90 Start: 52761, Stop: 52955, Start Num: 4
Candidate Starts for StolenFromERC_90:
(1, 52569), (2, 52611), (3, 52707), (Start: 4 @52761 has 121 MA's), (6, 52800), (8, 52851), (10, 52875), (11, 52887), (13, 52941),

Gene: TBrady12_90 Start: 52597, Stop: 52791, Start Num: 4
Candidate Starts for TBrady12_90:
(1, 52405), (2, 52447), (3, 52543), (Start: 4 @52597 has 121 MA's), (6, 52636), (8, 52687), (10, 52711), (11, 52723), (13, 52777),

Gene: Tarkin_86 Start: 52845, Stop: 53039, Start Num: 4
Candidate Starts for Tarkin_86:
(1, 52653), (2, 52695), (3, 52791), (Start: 4 @52845 has 121 MA's), (6, 52884), (8, 52935), (10, 52959), (11, 52971), (13, 53025),

Gene: TeardropMSU_83 Start: 51845, Stop: 52039, Start Num: 4
Candidate Starts for TeardropMSU_83:
(1, 51653), (2, 51695), (3, 51791), (Start: 4 @51845 has 121 MA's), (6, 51884), (8, 51935), (10, 51959), (11, 51971), (13, 52025),

Gene: Teaspoon_88 Start: 52700, Stop: 52894, Start Num: 4
Candidate Starts for Teaspoon_88:
(1, 52508), (2, 52550), (3, 52646), (Start: 4 @52700 has 121 MA's), (6, 52739), (8, 52790), (10, 52814), (11, 52826), (13, 52880),

Gene: Terminus_90 Start: 53632, Stop: 53826, Start Num: 4
Candidate Starts for Terminus_90:
(1, 53440), (2, 53482), (3, 53578), (Start: 4 @53632 has 121 MA's), (6, 53671), (8, 53722), (10, 53746), (11, 53758), (13, 53812),

Gene: Thresher_89 Start: 53716, Stop: 53910, Start Num: 4
Candidate Starts for Thresher_89:
(1, 53524), (2, 53566), (3, 53662), (Start: 4 @53716 has 121 MA's), (6, 53755), (8, 53806), (10, 53830), (11, 53842), (13, 53896),

Gene: Tomaszewski_82 Start: 52008, Stop: 52202, Start Num: 4
Candidate Starts for Tomaszewski_82:
(1, 51816), (2, 51858), (3, 51954), (Start: 4 @52008 has 121 MA's), (6, 52047), (8, 52098), (10, 52122), (11, 52134), (13, 52188),

Gene: Toto_85 Start: 53057, Stop: 53251, Start Num: 4
Candidate Starts for Toto_85:
(1, 52865), (2, 52907), (3, 53003), (Start: 4 @53057 has 121 MA's), (6, 53096), (8, 53147), (10, 53171), (11, 53183), (13, 53237),

Gene: Traaww1_83 Start: 52143, Stop: 52337, Start Num: 4
Candidate Starts for Traaww1_83:
(3, 52089), (Start: 4 @52143 has 121 MA's), (6, 52182), (8, 52233), (10, 52257), (11, 52269), (13, 52323),

Gene: Tuco_88 Start: 53604, Stop: 53798, Start Num: 4
Candidate Starts for Tuco_88:

(1, 53412), (2, 53454), (3, 53550), (Start: 4 @53604 has 121 MA's), (6, 53643), (8, 53694), (10, 53718), (11, 53730), (13, 53784),

Gene: Ukulele_82 Start: 51990, Stop: 52184, Start Num: 4

Candidate Starts for Ukulele_82:

(1, 51798), (2, 51840), (3, 51936), (Start: 4 @51990 has 121 MA's), (6, 52029), (8, 52080), (10, 52104), (11, 52116), (13, 52170),

Gene: Wiggin_89 Start: 52544, Stop: 52738, Start Num: 4

Candidate Starts for Wiggin_89:

(3, 52490), (Start: 4 @52544 has 121 MA's), (6, 52583), (8, 52634), (10, 52658), (11, 52670), (13, 52724),

Gene: Willez_82 Start: 50877, Stop: 51071, Start Num: 4

Candidate Starts for Willez_82:

(1, 50685), (2, 50727), (3, 50823), (Start: 4 @50877 has 121 MA's), (6, 50916), (8, 50967), (10, 50991), (11, 51003), (13, 51057),

Gene: Xandras_86 Start: 52089, Stop: 52283, Start Num: 4

Candidate Starts for Xandras_86:

(1, 51897), (2, 51939), (3, 52035), (Start: 4 @52089 has 121 MA's), (6, 52128), (8, 52179), (10, 52203), (11, 52215), (13, 52269),

Gene: YassJohnny_84 Start: 52008, Stop: 52202, Start Num: 4

Candidate Starts for YassJohnny_84:

(1, 51816), (2, 51858), (3, 51954), (Start: 4 @52008 has 121 MA's), (6, 52047), (8, 52098), (10, 52122), (11, 52134), (13, 52188),

Gene: Youngblood_90 Start: 53559, Stop: 53753, Start Num: 4

Candidate Starts for Youngblood_90:

(1, 53367), (2, 53409), (3, 53505), (Start: 4 @53559 has 121 MA's), (6, 53598), (8, 53649), (10, 53673), (11, 53685), (13, 53739),

Gene: xkcd_90 Start: 53746, Stop: 53940, Start Num: 4

Candidate Starts for xkcd_90:

(1, 53554), (2, 53596), (3, 53692), (Start: 4 @53746 has 121 MA's), (6, 53785), (8, 53836), (10, 53860), (11, 53872), (13, 53926),