

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 169985 Report

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

Pham number 169985 has 62 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Applejack_54
- Track 2 : Briton15_63, Molly_60
- Track 3 : Tasp14_62
- Track 4 : Violet_57
- Track 5 : Lamina13_61
- Track 6 : HanShotFirst_60
- Track 7 : Conboy_80, MoyaNatalis_81, Linus_82, RosiePosie_82, JayCookie_82
- Track 8 : DrYang_79
- Track 9 : KBurroustX_81
- Track 10 : Chocolat_82, Scavito_83, Kabreeze_82, Chipper1996_830, HumptyDumpty_82, Mordred_82, JaNo_81, Tophat_83, EdgarPoe_81
- Track 11 : ArV1_069
- Track 12 : Chubster_83
- Track 13 : Colucci_85
- Track 14 : PrincessTrina_83
- Track 15 : Lymara_79
- Track 16 : Belphegor_65
- Track 17 : Murica_102, MISSy_100
- Track 18 : Lilac_101
- Track 19 : Tarkin_98
- Track 20 : StellaBean_97
- Track 21 : ShroomBoi_67
- Track 22 : Pollywog_67
- Track 23 : Wee_78, Taj_79
- Track 24 : Totinger_69
- Track 25 : Bobi_73
- Track 26 : Mova_70
- Track 27 : Mantra_64
- Track 28 : OwlsT2W_66
- Track 29 : SG4_70
- Track 30 : Phalconet_70
- Track 31 : Royals2015_69
- Track 32 : Hegedechwinu_73
- Track 33 : EleanorGeorge_68
- Track 34 : Bipolar_76
- Track 35 : Filuzino_74
- Track 36 : PhesterPotato_67

- Track 37 : Kersh_68
- Track 38 : StAnnes_70
- Track 39 : Renaud18_76
- Track 40 : Hannaconda_142
- Track 41 : Optimus_142
- Track 42 : Gonephishing_142
- Track 43 : Boilgate_58
- Track 44 : Thespis_55
- Track 45 : Nazo_56
- Track 46 : BigNuz_55
- Track 47 : MooMoo_65

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

The start number called the most often in the published annotations is 37, it was called in 16 of the 55 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Chipper1996_830, Chocolat_82, Chubster_83, Conboy_80, DrYang_79, EdgarPoe_81, HumptyDumpty_82, JaNo_81, JayCookie_82, Kabreeze_82, Linus_82, Lymara_79, Mordred_82, MoyaNatalis_81, PrincessTrina_83, RosiePosie_82, Scavito_83, Tophat_83,

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

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

- Applejack_54, ArV1_069, Belphegor_65, BigNuz_55, Bipolar_76, Bobi_73, Boilgate_58, Briton15_63, Colucci_85, EleanorGeorge_68, Filuzino_74, Gonephishing_142, HanShotFirst_60, Hannaconda_142, Hegedechwinu_73, KBurrousTX_81, Kersh_68, Lamina13_61, Lilac_101, MISSy_100, Mantra_64, Molly_60, MooMoo_65, Mova_70, Murica_102, Nazo_56, Optimus_142, OwlsT2W_66, Phalconet_70, PhesterPhotato_67, Pollywog_67, Renaud18_76, Royals2015_69, SG4_70, ShroomBoi_67, StAnnes_70, StellaBean_97, Taj_79, Tarkin_98, Tasp14_62, Thespis_55, Totinger_69, Violet_57, Wee_78,

Summary by start number:

Start 7:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: OwlsT2W_66 (F1),

Start 22:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bipolar_76 (F1),

Start 35:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bobi_73 (F1),

Start 37:

- Found in 18 of 62 (29.0%) of genes in pham
- Manual Annotations of this start: 16 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chipper1996_830 (AR), Chocolat_82 (AR), Chubster_83 (AR), Conboy_80 (AR), DrYang_79 (AR), EdgarPoe_81 (AR), HumptyDumpty_82 (AR), JaNo_81 (AR), JayCookie_82 (AR), Kabreeze_82 (AR), Linus_82 (AR), Lymara_79 (AR), Mordred_82 (AR), MoyaNatalis_81 (AR), PrincessTrina_83 (AR), RosiePosie_82 (AR), Scavito_83 (AR), Tophat_83 (AR),

Start 38:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hegedechwinu_73 (F1),

Start 40:

- Found in 3 of 62 (4.8%) of genes in pham
- Manual Annotations of this start: 3 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phalconet_70 (F1), Taj_79 (F1), Wee_78 (F1),

Start 41:

- Found in 12 of 62 (19.4%) of genes in pham
- Manual Annotations of this start: 9 of 55
- Called 91.7% of time when present
- Phage (with cluster) where this start called: EleanorGeorge_68 (F1), Filuzino_74 (F1), Kersh_68 (F1), Mantra_64 (F1), Mova_70 (F1), PhesterPhotato_67 (F1), Pollywog_67 (F1), Renaud18_76 (F4), Royals2015_69 (F1), ShroomBoi_67 (F1), Totinger_69 (F1),

Start 42:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: StAnnes_70 (F1),

Start 43:

- Found in 2 of 62 (3.2%) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MISSy_100 (E), Murica_102 (E),

Start 44:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilac_101 (E),

Start 45:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hannaconda_142 (J),

Start 46:

- Found in 1 of 62 (1.6%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gonephishing_142 (J),

Start 58:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Thespis_55 (P1),

Start 62:

- Found in 2 of 62 (3.2%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Belphegor_65 (DE), MooMoo_65 (singleton),

Start 63:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boilgate_58 (K8),

Start 65:

- Found in 21 of 62 (33.9%) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 14.3% of time when present
- Phage (with cluster) where this start called: ArV1_069 (AR), Colucci_85 (AR), KBurrousTX_81 (AR),

Start 81:

- Found in 2 of 62 (3.2%) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BigNuz_55 (P4), Nazo_56 (P4),

Start 109:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SG4_70 (F1),

Start 113:

- Found in 2 of 62 (3.2%) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: StellaBean_97 (E), Tarkin_98 (E),

Start 114:

- Found in 9 of 62 (14.5%) of genes in pham
- Manual Annotations of this start: 8 of 55
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Applejack_54 (A1), Briton15_63 (A1), HanShotFirst_60 (A1), Lamina13_61 (A1), Molly_60 (A1), Optimus_142 (J), Tasp14_62 (A1), Violet_57 (A1),

Summary by clusters:

There are 11 clusters represented in this pham: F1, singleton, DE, E, P4, P1, J, A1, AR, F4, K8,

Info for manual annotations of cluster A1:

- Start number 114 was manually annotated 7 times for cluster A1.

Info for manual annotations of cluster AR:

- Start number 37 was manually annotated 16 times for cluster AR.
- Start number 65 was manually annotated 2 times for cluster AR.

Info for manual annotations of cluster E:

- Start number 43 was manually annotated 2 times for cluster E.
- Start number 44 was manually annotated 1 time for cluster E.
- Start number 113 was manually annotated 2 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 7 was manually annotated 1 time for cluster F1.
- Start number 22 was manually annotated 1 time for cluster F1.
- Start number 35 was manually annotated 1 time for cluster F1.
- Start number 38 was manually annotated 1 time for cluster F1.
- Start number 40 was manually annotated 3 times for cluster F1.
- Start number 41 was manually annotated 8 times for cluster F1.
- Start number 42 was manually annotated 1 time for cluster F1.
- Start number 109 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F4:

- Start number 41 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster J:

- Start number 45 was manually annotated 1 time for cluster J.
- Start number 114 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster K8:

- Start number 63 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster P1:

- Start number 58 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P4:

- Start number 81 was manually annotated 2 times for cluster P4.

Gene Information:

Gene: Applejack_54 Start: 38217, Stop: 36658, Start Num: 114

Candidate Starts for Applejack_54:

(Start: 114 @38217 has 8 MA's), (138, 38109), (148, 38064), (158, 37980), (173, 37839), (197, 37689), (206, 37611), (225, 37506), (227, 37503), (237, 37401), (238, 37392), (250, 37185), (257, 37119), (298, 36978), (300, 36975), (307, 36921), (316, 36867), (321, 36834), (328, 36792), (329, 36759),

Gene: ArV1_069 Start: 53043, Stop: 54641, Start Num: 65

Candidate Starts for ArV1_069:

(Start: 65 @53043 has 2 MA's), (78, 53115), (84, 53151), (85, 53157), (89, 53175), (93, 53193), (103, 53250), (111, 53286), (120, 53316), (124, 53328), (140, 53391), (159, 53520), (164, 53589), (167, 53616), (179, 53697), (182, 53712), (185, 53727), (190, 53769), (194, 53778), (196, 53796), (201, 53814), (207, 53829), (221, 53913), (234, 53979), (236, 53985), (248, 54039), (251, 54066), (252, 54081), (255, 54105), (257, 54129), (258, 54150), (273, 54213), (283, 54267), (286, 54291), (305, 54405), (318, 54429), (321, 54447), (326, 54468), (332, 54537), (333, 54546), (337, 54588), (342, 54621),

Gene: Belphegor_65 Start: 51910, Stop: 53616, Start Num: 62

Candidate Starts for Belphegor_65:

(61, 51907), (Start: 62 @51910 has 1 MA's), (69, 51937), (74, 51979), (82, 52006), (83, 52027), (85, 52036), (101, 52114), (110, 52165), (124, 52216), (141, 52267), (150, 52312), (164, 52456), (171, 52504), (187, 52600), (195, 52645), (209, 52702), (212, 52714), (250, 52918), (255, 52960), (268, 53080), (280, 53146), (315, 53383), (318, 53398), (321, 53416), (331, 53503), (333, 53515), (341, 53584),

Gene: BigNuz_55 Start: 38221, Stop: 39756, Start Num: 81

Candidate Starts for BigNuz_55:

(36, 37939), (66, 38140), (72, 38182), (Start: 81 @38221 has 2 MA's), (84, 38248), (85, 38254), (91, 38278), (98, 38314), (99, 38317), (103, 38347), (120, 38413), (154, 38563), (165, 38686), (187, 38824), (198, 38896), (250, 39142), (252, 39160), (275, 39250), (277, 39259), (284, 39301), (307, 39466), (312, 39511), (321, 39553), (324, 39565), (328, 39595), (340, 39709),

Gene: Bipolar_76 Start: 46390, Stop: 48396, Start Num: 22

Candidate Starts for Bipolar_76:

(Start: 22 @46390 has 1 MA's), (Start: 41 @46483 has 9 MA's), (47, 46513), (50, 46543), (53, 46579), (55, 46612), (60, 46657), (70, 46699), (71, 46702), (75, 46735), (77, 46741), (94, 46822), (110, 46864), (115, 46879), (144, 46972), (161, 47062), (162, 47074), (177, 47206), (196, 47326), (220, 47449), (234, 47536), (250, 47671), (253, 47692), (254, 47701), (255, 47713), (257, 47737), (280, 47905), (281, 47908), (307, 48088), (309, 48118), (321, 48190), (324, 48202), (326, 48211), (327, 48229), (340, 48346),

Gene: Bobi_73 Start: 44682, Stop: 46739, Start Num: 35

Candidate Starts for Bobi_73:

(Start: 35 @44682 has 1 MA's), (47, 44721), (50, 44751), (53, 44787), (55, 44820), (60, 44865), (88, 45009), (93, 45030), (116, 45162), (132, 45243), (149, 45324), (160, 45438), (166, 45495), (174, 45567), (188, 45651), (193, 45690), (203, 45759), (210, 45810), (216, 45843), (230, 45924), (231, 45930), (232, 45948), (236, 45969), (239, 46053), (243, 46095), (250, 46218), (253, 46239), (254, 46248), (255, 46260), (257, 46284), (258, 46305), (260, 46338), (274, 46383), (276, 46395), (280, 46434), (281, 46437), (299, 46539), (307, 46596), (314, 46656), (319, 46689), (322, 46698), (323, 46701),

Gene: Boilgate_58 Start: 41641, Stop: 43257, Start Num: 63

Candidate Starts for Boilgate_58:

(51, 41533), (54, 41566), (Start: 63 @41641 has 1 MA's), (69, 41668), (73, 41698), (85, 41767), (123, 41941), (137, 41992), (141, 41998), (155, 42073), (165, 42193), (199, 42400), (202, 42403), (215, 42451), (218, 42469), (250, 42622), (252, 42640), (254, 42655), (258, 42712), (304, 42904), (321, 43054), (328, 43096), (333, 43153), (341, 43222), (344, 43246),

Gene: Briton15_63 Start: 42021, Stop: 40291, Start Num: 114

Candidate Starts for Briton15_63:

(Start: 114 @42021 has 8 MA's), (138, 41913), (148, 41868), (158, 41784), (173, 41643), (197, 41493), (206, 41415), (225, 41310), (227, 41307), (237, 41205), (238, 41196), (254, 40959), (257, 40923), (261, 40860), (280, 40758), (281, 40755), (293, 40677), (307, 40569), (317, 40497), (318, 40485), (319, 40476), (321, 40467), (326, 40446), (327, 40428),

Gene: Chipper1996_830 Start: 54205, Stop: 56127, Start Num: 37

Candidate Starts for Chipper1996_830:

(Start: 37 @54205 has 16 MA's), (50, 54277), (Start: 65 @54409 has 2 MA's), (78, 54481), (84, 54517), (89, 54541), (93, 54559), (103, 54616), (111, 54652), (120, 54682), (124, 54694), (159, 54886), (164, 54955), (167, 54982), (179, 55063), (182, 55078), (185, 55093), (194, 55144), (196, 55162), (207, 55195), (221, 55279), (226, 55306), (234, 55345), (236, 55351), (248, 55405), (249, 55426), (250, 55429), (251, 55432), (252, 55447), (257, 55495), (258, 55516), (273, 55579), (278, 55603), (279, 55621), (282, 55630), (286, 55657), (306, 55792), (308, 55810), (311, 55879), (317, 55903), (318, 55915), (319, 55924), (321, 55933), (332, 56023), (333, 56032), (342, 56107), (343, 56113),

Gene: Chocolat_82 Start: 53912, Stop: 55834, Start Num: 37

Candidate Starts for Chocolat_82:

(Start: 37 @53912 has 16 MA's), (50, 53984), (Start: 65 @54116 has 2 MA's), (78, 54188), (84, 54224), (89, 54248), (93, 54266), (103, 54323), (111, 54359), (120, 54389), (124, 54401), (159, 54593), (164, 54662), (167, 54689), (179, 54770), (182, 54785), (185, 54800), (194, 54851), (196, 54869), (207, 54902), (221, 54986), (226, 55013), (234, 55052), (236, 55058), (248, 55112), (249, 55133), (250, 55136), (251, 55139), (252, 55154), (257, 55202), (258, 55223), (273, 55286), (278, 55310), (279, 55328), (282, 55337), (286, 55364), (306, 55499), (308, 55517), (311, 55586), (317, 55610), (318, 55622), (319, 55631), (321, 55640), (332, 55730), (333, 55739), (342, 55814), (343, 55820),

Gene: Chubster_83 Start: 54594, Stop: 56483, Start Num: 37

Candidate Starts for Chubster_83:

(Start: 37 @54594 has 16 MA's), (50, 54666), (Start: 65 @54798 has 2 MA's), (78, 54837), (84, 54873), (89, 54897), (93, 54915), (103, 54972), (111, 55008), (120, 55038), (124, 55050), (159, 55242), (167, 55338), (179, 55419), (182, 55434), (185, 55449), (194, 55500), (196, 55518), (207, 55551), (221, 55635), (234, 55701), (236, 55707), (248, 55761), (249, 55782), (250, 55785), (251, 55788), (252, 55803), (257, 55851), (258, 55872), (273, 55935), (278, 55959), (279, 55977), (282, 55986), (286, 56013), (306, 56148), (308, 56166), (311, 56235), (317, 56259), (318, 56271), (319, 56280), (321, 56289), (331, 56376), (332, 56379), (333, 56388), (342, 56463), (343, 56469),

Gene: Colucci_85 Start: 54914, Stop: 56491, Start Num: 65

Candidate Starts for Colucci_85:

(Start: 65 @54914 has 2 MA's), (84, 55001), (85, 55007), (89, 55025), (103, 55100), (111, 55136), (120, 55166), (164, 55439), (167, 55466), (179, 55547), (182, 55562), (185, 55577), (190, 55619), (194, 55628), (196, 55646), (207, 55679), (234, 55829), (236, 55835), (248, 55889), (251, 55916), (252, 55931), (257, 55979), (258, 56000), (264, 56036), (273, 56063), (283, 56117), (286, 56141), (305, 56255), (317, 56267), (321, 56297), (332, 56387), (333, 56396), (342, 56471),

Gene: Conboy_80 Start: 53694, Stop: 55583, Start Num: 37

Candidate Starts for Conboy_80:

(Start: 37 @53694 has 16 MA's), (50, 53766), (Start: 65 @53898 has 2 MA's), (78, 53937), (84, 53973), (89, 53997), (93, 54015), (103, 54072), (111, 54108), (120, 54138), (124, 54150), (159, 54342), (164, 54411), (167, 54438), (179, 54519), (182, 54534), (185, 54549), (194, 54600), (196, 54618), (207, 54651), (221, 54735), (234, 54801), (236, 54807), (248, 54861), (249, 54882), (250, 54885), (251, 54888), (252, 54903), (257, 54951), (258, 54972), (273, 55035), (278, 55059), (279, 55077), (282, 55086), (286, 55113), (306, 55248), (308, 55266), (311, 55335), (317, 55359), (318, 55371), (319, 55380), (321, 55389), (332, 55479), (333, 55488), (342, 55563), (343, 55569),

Gene: DrYang_79 Start: 54332, Stop: 56248, Start Num: 37

Candidate Starts for DrYang_79:

(Start: 37 @54332 has 16 MA's), (50, 54404), (56, 54491), (Start: 65 @54536 has 2 MA's), (78, 54602), (84, 54638), (89, 54662), (91, 54668), (98, 54704), (103, 54737), (111, 54773), (120, 54803), (159, 55007), (164, 55076), (167, 55103), (179, 55184), (182, 55199), (185, 55214), (190, 55256), (194, 55265), (201, 55301), (207, 55316), (234, 55466), (236, 55472), (248, 55526), (249, 55547), (250, 55550), (251, 55553), (252, 55568), (256, 55595), (257, 55616), (258, 55637), (273, 55700), (278, 55724), (286, 55778), (294, 55847), (308, 55931), (311, 56000), (316, 56021), (318, 56036), (319, 56045), (321, 56054), (326, 56075), (328, 56096), (332, 56144), (333, 56153), (342, 56228),

Gene: EdgarPoe_81 Start: 54069, Stop: 55991, Start Num: 37

Candidate Starts for EdgarPoe_81:

(Start: 37 @54069 has 16 MA's), (50, 54141), (Start: 65 @54273 has 2 MA's), (78, 54345), (84, 54381), (89, 54405), (93, 54423), (103, 54480), (111, 54516), (120, 54546), (124, 54558), (159, 54750), (164, 54819), (167, 54846), (179, 54927), (182, 54942), (185, 54957), (194, 55008), (196, 55026), (207, 55059), (221, 55143), (226, 55170), (234, 55209), (236, 55215), (248, 55269), (249, 55290), (250, 55293), (251, 55296), (252, 55311), (257, 55359), (258, 55380), (273, 55443), (278, 55467), (279, 55485), (282, 55494), (286, 55521), (306, 55656), (308, 55674), (311, 55743), (317, 55767), (318, 55779), (319, 55788), (321, 55797), (332, 55887), (333, 55896), (342, 55971), (343, 55977),

Gene: EleanorGeorge_68 Start: 43670, Stop: 44953, Start Num: 41

Candidate Starts for EleanorGeorge_68:

(Start: 41 @43670 has 9 MA's), (49, 43703), (50, 43727), (55, 43796), (135, 43979), (136, 43982), (142, 44000), (143, 44003), (178, 44222), (200, 44339), (233, 44441), (250, 44528), (254, 44558), (297, 44753), (307, 44810), (313, 44867), (319, 44903),

Gene: Filuzino_74 Start: 46234, Stop: 48309, Start Num: 41

Candidate Starts for Filuzino_74:

(11, 46084), (13, 46099), (19, 46135), (Start: 41 @46234 has 9 MA's), (47, 46264), (50, 46294), (53, 46330), (55, 46363), (60, 46408), (70, 46450), (71, 46453), (90, 46555), (100, 46603), (107, 46657), (Start: 114 @46696 has 8 MA's), (129, 46771), (132, 46783), (144, 46828), (151, 46873), (161, 46978), (162, 46990), (177, 47122), (220, 47365), (234, 47452), (250, 47587), (253, 47608), (254, 47617), (257, 47653), (271, 47755), (280, 47818), (281, 47821), (291, 47884), (307, 48001), (321,

48103), (324, 48115), (327, 48142), (340, 48259),

Gene: Gonephishing_142 Start: 76140, Stop: 77969, Start Num: 46

Candidate Starts for Gonephishing_142:

(46, 76140), (55, 76248), (60, 76293), (75, 76371), (77, 76377), (110, 76500), (161, 76662), (162, 76674), (177, 76806), (220, 77049), (234, 77136), (250, 77271), (253, 77292), (254, 77301), (257, 77337), (271, 77439), (280, 77502), (281, 77505), (318, 77775), (319, 77784), (321, 77793), (326, 77814), (327, 77832), (329, 77868),

Gene: HanShotFirst_60 Start: 41970, Stop: 40321, Start Num: 114

Candidate Starts for HanShotFirst_60:

(Start: 114 @41970 has 8 MA's), (138, 41862), (148, 41817), (158, 41733), (173, 41592), (197, 41442), (206, 41364), (225, 41259), (227, 41256), (237, 41154), (238, 41145), (250, 40938), (254, 40908), (257, 40872), (281, 40785), (318, 40515), (319, 40506), (321, 40497), (326, 40476), (327, 40458), (329, 40422),

Gene: Hannaconda_142 Start: 76662, Stop: 78896, Start Num: 45

Candidate Starts for Hannaconda_142:

(Start: 45 @76662 has 1 MA's), (55, 76770), (60, 76815), (75, 76893), (77, 76899), (92, 76977), (101, 77019), (108, 77076), (157, 77346), (178, 77550), (188, 77613), (205, 77745), (208, 77766), (214, 77802), (216, 77808), (223, 77847), (229, 77883), (232, 77916), (236, 77937), (239, 78021), (241, 78030), (250, 78231), (254, 78261), (257, 78297), (280, 78438), (281, 78441), (298, 78558), (317, 78690), (318, 78702), (319, 78711), (321, 78720), (326, 78741), (327, 78759), (329, 78795),

Gene: Hegedechwinu_73 Start: 43329, Stop: 44918, Start Num: 38

Candidate Starts for Hegedechwinu_73:

(Start: 38 @43329 has 1 MA's), (47, 43368), (50, 43398), (53, 43434), (55, 43467), (91, 43668), (96, 43701), (128, 43878), (133, 43902), (147, 43965), (152, 43989), (153, 43992), (186, 44226), (250, 44328), (253, 44349), (254, 44358), (257, 44394), (301, 44553), (307, 44610), (321, 44712), (324, 44724), (326, 44733), (328, 44754), (340, 44868),

Gene: HumptyDumpty_82 Start: 53872, Stop: 55794, Start Num: 37

Candidate Starts for HumptyDumpty_82:

(Start: 37 @53872 has 16 MA's), (50, 53944), (Start: 65 @54076 has 2 MA's), (78, 54148), (84, 54184), (89, 54208), (93, 54226), (103, 54283), (111, 54319), (120, 54349), (124, 54361), (159, 54553), (164, 54622), (167, 54649), (179, 54730), (182, 54745), (185, 54760), (194, 54811), (196, 54829), (207, 54862), (221, 54946), (226, 54973), (234, 55012), (236, 55018), (248, 55072), (249, 55093), (250, 55096), (251, 55099), (252, 55114), (257, 55162), (258, 55183), (273, 55246), (278, 55270), (279, 55288), (282, 55297), (286, 55324), (306, 55459), (308, 55477), (311, 55546), (317, 55570), (318, 55582), (319, 55591), (321, 55600), (332, 55690), (333, 55699), (342, 55774), (343, 55780),

Gene: JaNo_81 Start: 53843, Stop: 55765, Start Num: 37

Candidate Starts for JaNo_81:

(Start: 37 @53843 has 16 MA's), (50, 53915), (Start: 65 @54047 has 2 MA's), (78, 54119), (84, 54155), (89, 54179), (93, 54197), (103, 54254), (111, 54290), (120, 54320), (124, 54332), (159, 54524), (164, 54593), (167, 54620), (179, 54701), (182, 54716), (185, 54731), (194, 54782), (196, 54800), (207, 54833), (221, 54917), (226, 54944), (234, 54983), (236, 54989), (248, 55043), (249, 55064), (250, 55067), (251, 55070), (252, 55085), (257, 55133), (258, 55154), (273, 55217), (278, 55241), (279, 55259), (282, 55268), (286, 55295), (306, 55430), (308, 55448), (311, 55517), (317, 55541), (318, 55553), (319, 55562), (321, 55571), (332, 55661), (333, 55670), (342, 55745), (343, 55751),

Gene: JayCookie_82 Start: 54405, Stop: 56327, Start Num: 37

Candidate Starts for JayCookie_82:

(Start: 37 @54405 has 16 MA's), (50, 54477), (Start: 65 @54609 has 2 MA's), (78, 54681), (84, 54717), (89, 54741), (93, 54759), (103, 54816), (111, 54852), (120, 54882), (124, 54894), (159, 55086), (164, 55155), (167, 55182), (179, 55263), (182, 55278), (185, 55293), (194, 55344), (196, 55362), (207, 55395), (221, 55479), (234, 55545), (236, 55551), (248, 55605), (249, 55626), (250, 55629), (251, 55632), (252, 55647), (257, 55695), (258, 55716), (273, 55779), (278, 55803), (279, 55821), (282, 55830), (286, 55857), (306, 55992), (308, 56010), (311, 56079), (317, 56103), (318, 56115), (319, 56124), (321, 56133), (332, 56223), (333, 56232), (342, 56307), (343, 56313),

Gene: KBurrousTX_81 Start: 56110, Stop: 57699, Start Num: 65

Candidate Starts for KBurrousTX_81:

(57, 56071), (Start: 65 @56110 has 2 MA's), (78, 56176), (84, 56212), (85, 56218), (89, 56236), (103, 56311), (111, 56347), (120, 56377), (159, 56581), (164, 56650), (167, 56677), (179, 56758), (182, 56773), (185, 56788), (190, 56830), (194, 56839), (196, 56857), (201, 56875), (207, 56890), (234, 57040), (236, 57046), (248, 57100), (250, 57124), (252, 57142), (256, 57169), (257, 57190), (258, 57211), (266, 57256), (273, 57274), (283, 57331), (286, 57355), (288, 57361), (289, 57382), (318, 57493), (321, 57511), (326, 57532), (332, 57601), (333, 57610), (334, 57625), (342, 57685), (343, 57691),

Gene: Kabreeze_82 Start: 53929, Stop: 55851, Start Num: 37

Candidate Starts for Kabreeze_82:

(Start: 37 @53929 has 16 MA's), (50, 54001), (Start: 65 @54133 has 2 MA's), (78, 54205), (84, 54241), (89, 54265), (93, 54283), (103, 54340), (111, 54376), (120, 54406), (124, 54418), (159, 54610), (164, 54679), (167, 54706), (179, 54787), (182, 54802), (185, 54817), (194, 54868), (196, 54886), (207, 54919), (221, 55003), (226, 55030), (234, 55069), (236, 55075), (248, 55129), (249, 55150), (250, 55153), (251, 55156), (252, 55171), (257, 55219), (258, 55240), (273, 55303), (278, 55327), (279, 55345), (282, 55354), (286, 55381), (306, 55516), (308, 55534), (311, 55603), (317, 55627), (318, 55639), (319, 55648), (321, 55657), (332, 55747), (333, 55756), (342, 55831), (343, 55837),

Gene: Kersh_68 Start: 45094, Stop: 47070, Start Num: 41

Candidate Starts for Kersh_68:

(18, 44980), (Start: 41 @45094 has 9 MA's), (50, 45151), (52, 45163), (55, 45220), (80, 45361), (84, 45391), (86, 45406), (96, 45454), (105, 45505), (117, 45568), (126, 45616), (128, 45631), (131, 45640), (133, 45655), (139, 45679), (150, 45736), (152, 45742), (153, 45745), (154, 45763), (155, 45766), (184, 46036), (192, 46084), (198, 46120), (217, 46210), (219, 46228), (250, 46351), (252, 46369), (254, 46381), (255, 46393), (271, 46519), (280, 46582), (281, 46585), (307, 46765), (309, 46795), (321, 46867), (324, 46879), (328, 46909),

Gene: Lamina13_61 Start: 41357, Stop: 39765, Start Num: 114

Candidate Starts for Lamina13_61:

(Start: 114 @41357 has 8 MA's), (138, 41249), (148, 41204), (158, 41120), (173, 40979), (197, 40829), (206, 40751), (225, 40646), (227, 40643), (237, 40541), (238, 40532), (250, 40325), (254, 40295), (258, 40238), (299, 40100), (303, 40097), (307, 40043), (318, 39959), (319, 39950), (321, 39941), (326, 39920), (327, 39902), (329, 39866),

Gene: Lilac_101 Start: 58401, Stop: 60605, Start Num: 44

Candidate Starts for Lilac_101:

(16, 58254), (21, 58284), (28, 58332), (30, 58347), (33, 58359), (Start: 44 @58401 has 1 MA's), (48, 58419), (55, 58515), (60, 58560), (77, 58644), (88, 58704), (93, 58725), (116, 58857), (132, 58938), (149, 59019), (160, 59133), (166, 59190), (174, 59262), (188, 59346), (193, 59385), (203, 59454), (210, 59505), (216, 59538), (230, 59619), (231, 59625), (232, 59643), (236, 59664), (239, 59748),

(243, 59793), (244, 59805), (250, 59910), (251, 59913), (255, 59952), (261, 60039), (280, 60141), (281, 60144), (290, 60207), (321, 60426), (328, 60468), (329, 60501), (332, 60516),

Gene: Linus_82 Start: 54377, Stop: 56299, Start Num: 37

Candidate Starts for Linus_82:

(Start: 37 @54377 has 16 MA's), (50, 54449), (Start: 65 @54581 has 2 MA's), (78, 54653), (84, 54689), (89, 54713), (93, 54731), (103, 54788), (111, 54824), (120, 54854), (124, 54866), (159, 55058), (164, 55127), (167, 55154), (179, 55235), (182, 55250), (185, 55265), (194, 55316), (196, 55334), (207, 55367), (221, 55451), (234, 55517), (236, 55523), (248, 55577), (249, 55598), (250, 55601), (251, 55604), (252, 55619), (257, 55667), (258, 55688), (273, 55751), (278, 55775), (279, 55793), (282, 55802), (286, 55829), (306, 55964), (308, 55982), (311, 56051), (317, 56075), (318, 56087), (319, 56096), (321, 56105), (332, 56195), (333, 56204), (342, 56279), (343, 56285),

Gene: Lymara_79 Start: 53015, Stop: 54817, Start Num: 37

Candidate Starts for Lymara_79:

(Start: 37 @53015 has 16 MA's), (56, 53174), (Start: 65 @53219 has 2 MA's), (76, 53285), (78, 53291), (84, 53327), (89, 53351), (93, 53369), (103, 53426), (111, 53462), (120, 53492), (124, 53504), (140, 53567), (159, 53696), (164, 53765), (167, 53792), (179, 53873), (182, 53888), (185, 53903), (194, 53954), (196, 53972), (207, 54005), (221, 54089), (226, 54116), (234, 54155), (236, 54161), (248, 54215), (249, 54236), (251, 54242), (252, 54257), (255, 54281), (257, 54305), (258, 54326), (273, 54389), (278, 54413), (286, 54467), (318, 54605), (321, 54623), (332, 54713), (333, 54722), (337, 54764), (342, 54797),

Gene: MISSy_100 Start: 58583, Stop: 60391, Start Num: 43

Candidate Starts for MISSy_100:

(15, 58436), (20, 58466), (27, 58514), (29, 58529), (31, 58541), (Start: 43 @58583 has 2 MA's), (48, 58601), (55, 58697), (60, 58742), (77, 58826), (110, 58949), (142, 59036), (145, 59042), (161, 59129), (162, 59141), (177, 59273), (220, 59516), (234, 59603), (254, 59768), (255, 59780), (297, 60053), (321, 60212), (328, 60254), (329, 60287), (332, 60302),

Gene: Mantra_64 Start: 42536, Stop: 44860, Start Num: 41

Candidate Starts for Mantra_64:

(28, 42488), (Start: 41 @42536 has 9 MA's), (50, 42593), (55, 42662), (91, 42863), (96, 42896), (128, 43073), (133, 43097), (147, 43160), (150, 43178), (152, 43184), (154, 43205), (165, 43328), (189, 43532), (235, 43826), (240, 43922), (245, 44003), (246, 44009), (247, 44042), (250, 44141), (253, 44162), (254, 44171), (257, 44207), (271, 44309), (280, 44372), (281, 44375), (307, 44555), (320, 44654), (321, 44657), (324, 44669), (326, 44678), (328, 44699), (345, 44852),

Gene: Molly_60 Start: 40691, Stop: 38961, Start Num: 114

Candidate Starts for Molly_60:

(Start: 114 @40691 has 8 MA's), (138, 40583), (148, 40538), (158, 40454), (173, 40313), (197, 40163), (206, 40085), (225, 39980), (227, 39977), (237, 39875), (238, 39866), (254, 39629), (257, 39593), (261, 39530), (280, 39428), (281, 39425), (293, 39347), (307, 39239), (317, 39167), (318, 39155), (319, 39146), (321, 39137), (326, 39116), (327, 39098),

Gene: MooMoo_65 Start: 41964, Stop: 43592, Start Num: 62

Candidate Starts for MooMoo_65:

(Start: 62 @41964 has 1 MA's), (69, 41991), (73, 42021), (85, 42090), (97, 42144), (146, 42321), (154, 42378), (165, 42501), (168, 42534), (172, 42555), (176, 42588), (181, 42603), (201, 42708), (250, 42912), (251, 42915), (255, 42954), (302, 43245), (307, 43302), (321, 43389), (324, 43401), (327, 43428), (328, 43431), (333, 43488), (338, 43536), (341, 43557),

Gene: Mordred_82 Start: 53968, Stop: 55890, Start Num: 37

Candidate Starts for Mordred_82:

(Start: 37 @53968 has 16 MA's), (50, 54040), (Start: 65 @54172 has 2 MA's), (78, 54244), (84, 54280), (89, 54304), (93, 54322), (103, 54379), (111, 54415), (120, 54445), (124, 54457), (159, 54649), (164, 54718), (167, 54745), (179, 54826), (182, 54841), (185, 54856), (194, 54907), (196, 54925), (207, 54958), (221, 55042), (226, 55069), (234, 55108), (236, 55114), (248, 55168), (249, 55189), (250, 55192), (251, 55195), (252, 55210), (257, 55258), (258, 55279), (273, 55342), (278, 55366), (279, 55384), (282, 55393), (286, 55420), (306, 55555), (308, 55573), (311, 55642), (317, 55666), (318, 55678), (319, 55687), (321, 55696), (332, 55786), (333, 55795), (342, 55870), (343, 55876),

Gene: Mova_70 Start: 42582, Stop: 44489, Start Num: 41

Candidate Starts for Mova_70:

(8, 42405), (10, 42420), (12, 42429), (26, 42525), (Start: 41 @42582 has 9 MA's), (50, 42639), (55, 42708), (91, 42909), (96, 42942), (128, 43119), (133, 43143), (147, 43206), (154, 43251), (169, 43410), (175, 43464), (180, 43491), (213, 43611), (222, 43668), (250, 43776), (254, 43806), (257, 43842), (265, 43920), (267, 43926), (307, 44184), (320, 44283), (321, 44286), (324, 44298), (326, 44307), (328, 44328), (345, 44481),

Gene: MoyaNatalis_81 Start: 53851, Stop: 55773, Start Num: 37

Candidate Starts for MoyaNatalis_81:

(Start: 37 @53851 has 16 MA's), (50, 53923), (Start: 65 @54055 has 2 MA's), (78, 54127), (84, 54163), (89, 54187), (93, 54205), (103, 54262), (111, 54298), (120, 54328), (124, 54340), (159, 54532), (164, 54601), (167, 54628), (179, 54709), (182, 54724), (185, 54739), (194, 54790), (196, 54808), (207, 54841), (221, 54925), (234, 54991), (236, 54997), (248, 55051), (249, 55072), (250, 55075), (251, 55078), (252, 55093), (257, 55141), (258, 55162), (273, 55225), (278, 55249), (279, 55267), (282, 55276), (286, 55303), (306, 55438), (308, 55456), (311, 55525), (317, 55549), (318, 55561), (319, 55570), (321, 55579), (332, 55669), (333, 55678), (342, 55753), (343, 55759),

Gene: Murica_102 Start: 59799, Stop: 61607, Start Num: 43

Candidate Starts for Murica_102:

(15, 59652), (20, 59682), (27, 59730), (29, 59745), (31, 59757), (Start: 43 @59799 has 2 MA's), (48, 59817), (55, 59913), (60, 59958), (77, 60042), (110, 60165), (142, 60252), (145, 60258), (161, 60345), (162, 60357), (177, 60489), (220, 60732), (234, 60819), (254, 60984), (255, 60996), (297, 61269), (321, 61428), (328, 61470), (329, 61503), (332, 61518),

Gene: Nazo_56 Start: 38421, Stop: 39956, Start Num: 81

Candidate Starts for Nazo_56:

(36, 38139), (66, 38340), (72, 38382), (Start: 81 @38421 has 2 MA's), (84, 38448), (85, 38454), (91, 38478), (98, 38514), (99, 38517), (103, 38547), (120, 38613), (154, 38763), (165, 38886), (187, 39024), (198, 39096), (250, 39342), (252, 39360), (275, 39450), (277, 39459), (284, 39501), (307, 39666), (312, 39711), (324, 39765), (328, 39795), (338, 39900),

Gene: Optimus_142 Start: 77338, Stop: 79065, Start Num: 114

Candidate Starts for Optimus_142:

(Start: 114 @77338 has 8 MA's), (138, 77446), (148, 77491), (158, 77575), (173, 77716), (197, 77866), (206, 77944), (225, 78049), (227, 78052), (237, 78154), (238, 78163), (250, 78370), (253, 78391), (254, 78400), (257, 78436), (270, 78538), (280, 78601), (281, 78604), (307, 78787), (318, 78871), (319, 78880), (321, 78889), (326, 78910), (327, 78928), (329, 78964),

Gene: OwlsT2W_66 Start: 42373, Stop: 44289, Start Num: 7

Candidate Starts for OwlsT2W_66:

(1, 42196), (2, 42202), (3, 42211), (4, 42220), (5, 42259), (6, 42316), (Start: 7 @42373 has 1 MA's), (14, 42430), (17, 42442), (25, 42499), (34, 42553), (67, 42766), (68, 42769), (71, 42790), (94, 42910),

(110, 42952), (127, 42988), (161, 43132), (162, 43144), (177, 43276), (196, 43396), (220, 43519), (234, 43606), (250, 43741), (254, 43771), (257, 43807), (271, 43909), (285, 43990), (307, 44146), (314, 44206), (319, 44239), (322, 44248), (323, 44251),

Gene: Phalconet_70 Start: 43833, Stop: 45551, Start Num: 40

Candidate Starts for Phalconet_70:

(23, 43743), (24, 43752), (27, 43779), (Start: 40 @43833 has 3 MA's), (47, 43863), (50, 43893), (53, 43929), (55, 43962), (91, 44163), (96, 44196), (128, 44373), (133, 44397), (147, 44460), (152, 44484), (153, 44487), (186, 44721), (250, 44823), (253, 44844), (254, 44853), (257, 44889), (271, 44991), (307, 45243), (321, 45345), (324, 45357), (328, 45387), (340, 45501),

Gene: PhesterPhotato_67 Start: 41796, Stop: 43328, Start Num: 41

Candidate Starts for PhesterPhotato_67:

(Start: 41 @41796 has 9 MA's), (50, 41853), (52, 41865), (55, 41922), (64, 41976), (135, 42189), (136, 42192), (143, 42213), (191, 42483), (204, 42531), (211, 42567), (228, 42657), (233, 42675), (250, 42798), (252, 42816), (254, 42828), (255, 42840), (258, 42885), (263, 42933), (295, 43128), (307, 43185), (314, 43245), (319, 43278), (322, 43287), (323, 43290),

Gene: Pollywog_67 Start: 43356, Stop: 45239, Start Num: 41

Candidate Starts for Pollywog_67:

(18, 43242), (Start: 41 @43356 has 9 MA's), (50, 43413), (53, 43449), (55, 43482), (60, 43527), (70, 43569), (71, 43572), (77, 43611), (125, 43734), (161, 43899), (162, 43911), (177, 44043), (196, 44163), (220, 44286), (234, 44373), (250, 44508), (254, 44538), (257, 44574), (262, 44652), (269, 44679), (272, 44685), (280, 44745), (281, 44748), (293, 44826), (307, 44934), (318, 45018), (321, 45036), (324, 45048), (327, 45075),

Gene: PrincessTrina_83 Start: 54273, Stop: 56075, Start Num: 37

Candidate Starts for PrincessTrina_83:

(Start: 37 @54273 has 16 MA's), (50, 54345), (Start: 65 @54477 has 2 MA's), (78, 54549), (84, 54585), (89, 54609), (93, 54627), (103, 54684), (111, 54720), (120, 54750), (124, 54762), (159, 54954), (164, 55023), (167, 55050), (179, 55131), (182, 55146), (185, 55161), (194, 55212), (196, 55230), (207, 55263), (221, 55347), (226, 55374), (234, 55413), (236, 55419), (248, 55473), (249, 55494), (250, 55497), (251, 55500), (252, 55515), (257, 55563), (258, 55584), (273, 55647), (278, 55671), (279, 55689), (282, 55698), (286, 55725), (318, 55863), (321, 55881), (332, 55971), (333, 55980), (342, 56055), (343, 56061),

Gene: Renaud18_76 Start: 44560, Stop: 46092, Start Num: 41

Candidate Starts for Renaud18_76:

(8, 44383), (9, 44389), (10, 44398), (12, 44407), (18, 44446), (26, 44503), (Start: 41 @44560 has 9 MA's), (50, 44617), (52, 44629), (55, 44686), (64, 44740), (135, 44953), (136, 44956), (143, 44977), (191, 45247), (204, 45295), (211, 45331), (228, 45421), (233, 45439), (250, 45562), (252, 45580), (254, 45592), (255, 45604), (258, 45649), (263, 45697), (295, 45892), (307, 45949), (314, 46009), (319, 46042), (322, 46051), (323, 46054),

Gene: RosiePosie_82 Start: 54057, Stop: 55946, Start Num: 37

Candidate Starts for RosiePosie_82:

(Start: 37 @54057 has 16 MA's), (50, 54129), (Start: 65 @54261 has 2 MA's), (78, 54300), (84, 54336), (89, 54360), (93, 54378), (103, 54435), (111, 54471), (120, 54501), (124, 54513), (159, 54705), (164, 54774), (167, 54801), (179, 54882), (182, 54897), (185, 54912), (194, 54963), (196, 54981), (207, 55014), (221, 55098), (234, 55164), (236, 55170), (248, 55224), (249, 55245), (250, 55248), (251, 55251), (252, 55266), (257, 55314), (258, 55335), (273, 55398), (278, 55422), (279, 55440), (282, 55449), (286, 55476), (306, 55611), (308, 55629), (311, 55698), (317, 55722), (318, 55734), (319, 55743), (321, 55752), (332, 55842), (333, 55851), (342, 55926), (343, 55932),

Gene: Royals2015_69 Start: 42774, Stop: 44306, Start Num: 41

Candidate Starts for Royals2015_69:

(8, 42597), (9, 42603), (10, 42612), (18, 42660), (26, 42717), (Start: 41 @42774 has 9 MA's), (50, 42831), (52, 42843), (55, 42900), (64, 42954), (135, 43167), (136, 43170), (143, 43191), (191, 43461), (204, 43509), (211, 43545), (228, 43635), (233, 43653), (250, 43776), (252, 43794), (254, 43806), (255, 43818), (258, 43863), (263, 43911), (295, 44106), (307, 44163), (314, 44223), (319, 44256), (322, 44265), (323, 44268),

Gene: SG4_70 Start: 43702, Stop: 45480, Start Num: 109

Candidate Starts for SG4_70:

(Start: 109 @43702 has 1 MA's), (118, 43741), (121, 43771), (130, 43807), (138, 43840), (148, 43885), (173, 44110), (197, 44260), (206, 44338), (225, 44443), (227, 44446), (237, 44548), (238, 44557), (250, 44764), (253, 44785), (254, 44794), (257, 44830), (270, 44932), (280, 44995), (281, 44998), (285, 45013), (307, 45172), (321, 45274), (324, 45286), (326, 45295), (327, 45313), (339, 45430),

Gene: Scavito_83 Start: 54017, Stop: 55939, Start Num: 37

Candidate Starts for Scavito_83:

(Start: 37 @54017 has 16 MA's), (50, 54089), (Start: 65 @54221 has 2 MA's), (78, 54293), (84, 54329), (89, 54353), (93, 54371), (103, 54428), (111, 54464), (120, 54494), (124, 54506), (159, 54698), (164, 54767), (167, 54794), (179, 54875), (182, 54890), (185, 54905), (194, 54956), (196, 54974), (207, 55007), (221, 55091), (226, 55118), (234, 55157), (236, 55163), (248, 55217), (249, 55238), (250, 55241), (251, 55244), (252, 55259), (257, 55307), (258, 55328), (273, 55391), (278, 55415), (279, 55433), (282, 55442), (286, 55469), (306, 55604), (308, 55622), (311, 55691), (317, 55715), (318, 55727), (319, 55736), (321, 55745), (332, 55835), (333, 55844), (342, 55919), (343, 55925),

Gene: ShroomBoi_67 Start: 43105, Stop: 44667, Start Num: 41

Candidate Starts for ShroomBoi_67:

(8, 42928), (9, 42934), (10, 42943), (12, 42952), (18, 42991), (Start: 41 @43105 has 9 MA's), (50, 43162), (53, 43198), (55, 43231), (122, 43453), (135, 43495), (191, 43789), (204, 43837), (211, 43873), (224, 43942), (228, 43963), (233, 43981), (250, 44104), (253, 44125), (254, 44134), (255, 44146), (271, 44272), (280, 44335), (292, 44404), (307, 44524), (314, 44584), (319, 44617), (322, 44626), (323, 44629),

Gene: StAnnes_70 Start: 44611, Stop: 46869, Start Num: 42

Candidate Starts for StAnnes_70:

(32, 44581), (39, 44605), (Start: 42 @44611 has 1 MA's), (50, 44665), (53, 44701), (55, 44734), (60, 44779), (92, 44941), (101, 44983), (108, 45040), (157, 45310), (178, 45514), (188, 45577), (205, 45709), (208, 45730), (214, 45766), (216, 45772), (223, 45811), (229, 45847), (232, 45880), (236, 45901), (239, 45985), (242, 45997), (243, 46042), (250, 46162), (254, 46192), (257, 46228), (280, 46387), (281, 46390), (293, 46468), (307, 46576), (321, 46663), (324, 46675), (326, 46684), (328, 46705),

Gene: StellaBean_97 Start: 58301, Stop: 60040, Start Num: 113

Candidate Starts for StellaBean_97:

(87, 58154), (95, 58184), (102, 58232), (104, 58247), (106, 58259), (Start: 113 @58301 has 2 MA's), (119, 58319), (138, 58415), (148, 58460), (158, 58544), (173, 58685), (197, 58835), (206, 58913), (225, 59018), (227, 59021), (237, 59123), (238, 59132), (250, 59339), (254, 59369), (261, 59468), (280, 59570), (281, 59573), (293, 59651), (307, 59759), (317, 59831), (321, 59861), (328, 59903), (329, 59936), (332, 59951),

Gene: Taj_79 Start: 46662, Stop: 48335, Start Num: 40

Candidate Starts for Taj_79:

(23, 46572), (24, 46581), (Start: 40 @46662 has 3 MA's), (47, 46692), (50, 46722), (52, 46734), (55, 46791), (91, 46992), (96, 47025), (128, 47202), (133, 47226), (147, 47289), (152, 47313), (153, 47316), (165, 47457), (170, 47499), (183, 47544), (186, 47556), (250, 47661), (253, 47682), (254, 47691), (255, 47703), (259, 47769), (280, 47865), (281, 47868), (301, 47970), (307, 48027), (321, 48129), (324, 48141), (326, 48150), (328, 48171), (340, 48285),

Gene: Tarkin_98 Start: 58765, Stop: 60504, Start Num: 113

Candidate Starts for Tarkin_98:

(87, 58618), (95, 58648), (102, 58696), (104, 58711), (106, 58723), (Start: 113 @58765 has 2 MA's), (119, 58783), (138, 58879), (148, 58924), (158, 59008), (163, 59071), (173, 59149), (197, 59299), (206, 59377), (225, 59482), (227, 59485), (237, 59587), (238, 59596), (250, 59803), (253, 59824), (254, 59833), (255, 59845), (261, 59932), (280, 60034), (281, 60037), (293, 60115), (307, 60223), (321, 60325), (328, 60367), (329, 60400), (332, 60415),

Gene: Tasp14_62 Start: 41981, Stop: 40389, Start Num: 114

Candidate Starts for Tasp14_62:

(Start: 114 @41981 has 8 MA's), (138, 41873), (148, 41828), (158, 41744), (173, 41603), (197, 41453), (206, 41375), (225, 41270), (227, 41267), (237, 41165), (238, 41156), (250, 40949), (254, 40919), (258, 40862), (299, 40724), (303, 40721), (307, 40667), (318, 40583), (319, 40574), (321, 40565), (326, 40544), (327, 40526), (329, 40490),

Gene: Thespis_55 Start: 36748, Stop: 38346, Start Num: 58

Candidate Starts for Thespis_55:

(Start: 58 @36748 has 1 MA's), (59, 36757), (68, 36784), (79, 36850), (91, 36910), (99, 36949), (103, 36979), (112, 37036), (134, 37123), (152, 37201), (156, 37246), (173, 37408), (187, 37483), (198, 37555), (250, 37801), (252, 37819), (255, 37843), (287, 37978), (292, 38008), (296, 38044), (310, 38146), (325, 38203), (330, 38263), (334, 38296), (335, 38305), (336, 38308),

Gene: Tophat_83 Start: 54206, Stop: 56128, Start Num: 37

Candidate Starts for Tophat_83:

(Start: 37 @54206 has 16 MA's), (50, 54278), (Start: 65 @54410 has 2 MA's), (78, 54482), (84, 54518), (89, 54542), (93, 54560), (103, 54617), (111, 54653), (120, 54683), (124, 54695), (159, 54887), (164, 54956), (167, 54983), (179, 55064), (182, 55079), (185, 55094), (194, 55145), (196, 55163), (207, 55196), (221, 55280), (226, 55307), (234, 55346), (236, 55352), (248, 55406), (249, 55427), (250, 55430), (251, 55433), (252, 55448), (257, 55496), (258, 55517), (273, 55580), (278, 55604), (279, 55622), (282, 55631), (286, 55658), (306, 55793), (308, 55811), (311, 55880), (317, 55904), (318, 55916), (319, 55925), (321, 55934), (332, 56024), (333, 56033), (342, 56108), (343, 56114),

Gene: Totinger_69 Start: 41872, Stop: 44196, Start Num: 41

Candidate Starts for Totinger_69:

(8, 41695), (10, 41710), (12, 41719), (26, 41815), (Start: 41 @41872 has 9 MA's), (50, 41929), (55, 41998), (91, 42199), (96, 42232), (128, 42409), (133, 42433), (147, 42496), (150, 42514), (152, 42520), (154, 42541), (165, 42664), (189, 42868), (235, 43162), (240, 43258), (245, 43339), (246, 43345), (247, 43378), (250, 43477), (252, 43495), (255, 43519), (271, 43645), (280, 43708), (281, 43711), (307, 43891), (320, 43990), (321, 43993), (324, 44005), (326, 44014), (328, 44035), (345, 44188),

Gene: Violet_57 Start: 42062, Stop: 40485, Start Num: 114

Candidate Starts for Violet_57:

(Start: 114 @42062 has 8 MA's), (138, 41954), (148, 41909), (158, 41825), (173, 41684), (197, 41534), (206, 41456), (225, 41351), (227, 41348), (237, 41246), (238, 41237), (250, 41030), (253, 41009), (254, 41000), (257, 40964), (302, 40805), (307, 40748), (321, 40661), (328, 40619), (329, 40586),

Gene: Wee_78 Start: 46738, Stop: 48411, Start Num: 40

Candidate Starts for Wee_78:

(23, 46648), (24, 46657), (Start: 40 @46738 has 3 MA's), (47, 46768), (50, 46798), (52, 46810), (55, 46867), (91, 47068), (96, 47101), (128, 47278), (133, 47302), (147, 47365), (152, 47389), (153, 47392), (165, 47533), (170, 47575), (183, 47620), (186, 47632), (250, 47737), (253, 47758), (254, 47767), (255, 47779), (259, 47845), (280, 47941), (281, 47944), (301, 48046), (307, 48103), (321, 48205), (324, 48217), (326, 48226), (328, 48247), (340, 48361),