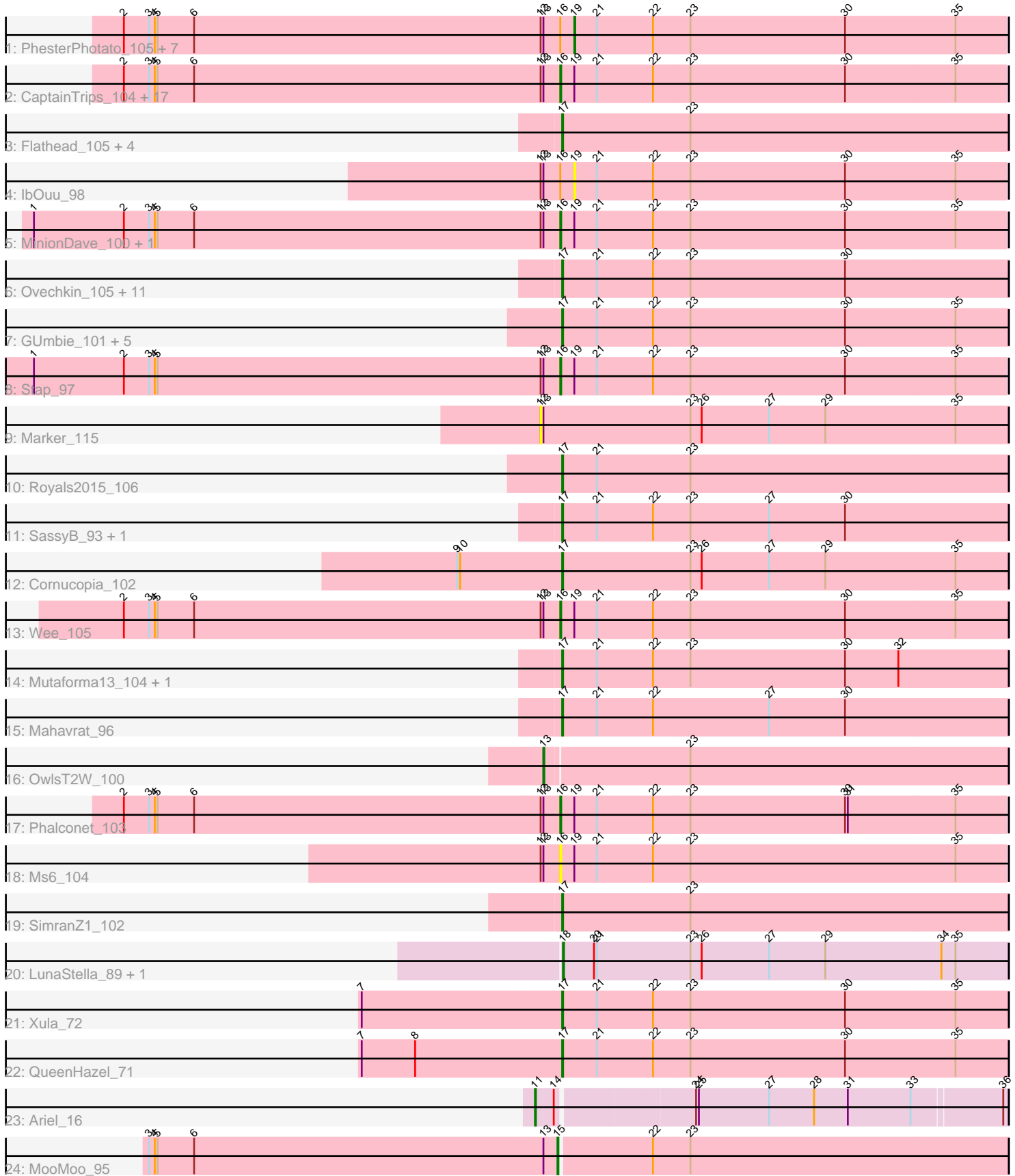


Pham 162981



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 162981 Report

This analysis was run 04/28/24 on database version 559.

Pham number 162981 has 72 members, 11 are drafts.

Phages represented in each track:

- Track 1 : PhesterPhotato_105, MilanaBonita_95, Fastidio_102, Fruitloop_100, Melissaueren88_92, Ardmore_86, LittleShirley_109, DosHalletts_102
- Track 2 : CaptainTrips_104, Batiatus_102, Hamulus_102, Filuzino_102, StAnnes_107, SG4_103, Mova_104, ArcusAngelus_102, Chevrolet_110, Whatsapiecost_96, DLane_102, Seagreen_103, Chuckly_99, Beakin_95, ShroomBoi_100, QuickMath_103, XFactor_93, Akhila_96
- Track 3 : Flathead_105, Rockne_106, Hegedechwinu_111, PMC_102, Ogopogo_107
- Track 4 : IbOuu_98
- Track 5 : MinionDave_100, DillTech15_108
- Track 6 : Ovechkin_105, GigiOuiOui_97, Wachhund_99, Juniper1_97, LunaBlu_109, Galactic_107, lbhubesi_99, Harley_104, Byougenkin_99, Kersh_105, Mozy_107, Nitzel_97
- Track 7 : GUmbie_101, DotProduct_96, Hades_99, Kimberlium_103, Boomer_103, Juice456_101
- Track 8 : Stap_97
- Track 9 : Marker_115
- Track 10 : Royals2015_106
- Track 11 : SassyB_93, PopTart_93
- Track 12 : Cornucopia_102
- Track 13 : Wee_105
- Track 14 : Mutaforma13_104, Firehouse51_97
- Track 15 : Mahavrat_96
- Track 16 : OwlsT2W_100
- Track 17 : Phalconet_103
- Track 18 : Ms6_104
- Track 19 : SimranZ1_102
- Track 20 : LunaStella_89, TChen_99
- Track 21 : Xula_72
- Track 22 : QueenHazel_71
- Track 23 : Ariel_16
- Track 24 : MooMoo_95

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

The start number called the most often in the published annotations is 17, it was called in 32 of the 61 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Boomer_103, Byougenkin_99, Cornucopia_102, DotProduct_96, Firehouse51_97, Flathead_105, GUmbe_101, Galactic_107, GigiOuiOui_97, Hades_99, Harley_104, Hegedechwinu_111, Ibhubesi_99, Juice456_101, Juniper1_97, Kersh_105, Kimberlium_103, LunaBlu_109, Mahavrat_96, Mozy_107, Mutaforma13_104, Nitzel_97, Ogopogo_107, Ovechkin_105, PMC_102, PopTart_93, QueenHazel_71, Rockne_106, Royals2015_106, SassyB_93, SimranZ1_102, Wachhund_99, Xula_72,

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

-

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

- Akhila_96, ArcusAngelus_102, Ardmore_86, Ariel_16, Batiatus_102, Beakin_95, CaptainTrips_104, Chevrolet_110, Chuckly_99, DLane_102, DillTech15_108, DosHalletts_102, Fastidio_102, Filuzino_102, Fruitloop_100, Hamulus_102, IbOuu_98, LittleShirley_109, LunaStella_89, Marker_115, Melissauren88_92, MilanaBonita_95, MinionDave_100, MooMoo_95, Mova_104, Ms6_104, OwlsT2W_100, Phalconet_103, PhesterPhotato_105, QuickMath_103, SG4_103, Seagreen_103, ShroomBoi_100, StAnnes_107, Stap_97, TChen_99, Wee_105, Whatsapiecost_96, XFactor_93,

Summary by start number:

Start 11:

- Found in 1 of 72 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ariel_16 (J),

Start 12:

- Found in 34 of 72 (47.2%) of genes in pham
- No Manual Annotations of this start.
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Marker_115 (F1),

Start 13:

- Found in 36 of 72 (50.0%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 2.8% of time when present
- Phage (with cluster) where this start called: OwlsT2W_100 (F1),

Start 15:

- Found in 1 of 72 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MooMoo_95 (singleton),

Start 16:

- Found in 33 of 72 (45.8%) of genes in pham

- Manual Annotations of this start: 22 of 61
- Called 72.7% of time when present
- Phage (with cluster) where this start called: Akhila_96 (F1), ArcusAngelus_102 (F1), Batiatus_102 (F1), Beakin_95 (F1), CaptainTrips_104 (F1), Chevrolet_110 (F1), Chuckly_99 (F1), DLane_102 (F1), DillTech15_108 (F1), Filuzino_102 (F1), Hamulus_102 (F1), MinionDave_100 (F1), Mova_104 (F1), Ms6_104 (F1), Phalconet_103 (F1), QuickMath_103 (F1), SG4_103 (F1), Seagreen_103 (F1), ShroomBoi_100 (F1), StAnnes_107 (F1), Stap_97 (F1), Wee_105 (F1), Whatsapiecost_96 (F1), XFactor_93 (F1),

Start 17:

- Found in 33 of 72 (45.8%) of genes in pham
- Manual Annotations of this start: 32 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boomer_103 (F1), Byougenkin_99 (F1), Cornucopia_102 (F1), DotProduct_96 (F1), Firehouse51_97 (F1), Flathead_105 (F1), GUmbie_101 (F1), Galactic_107 (F1), GigiOuiOui_97 (F1), Hades_99 (F1), Harley_104 (F1), Hegedechwinu_111 (F1), Ibhubesi_99 (F1), Juice456_101 (F1), Juniper1_97 (F1), Kersh_105 (F1), Kimberlium_103 (F1), LunaBlu_109 (F1), Mahavrat_96 (F1), Mozy_107 (F1), Mutaforma13_104 (F1), Nitzel_97 (F1), Ogopogo_107 (F1), Ovechkin_105 (F1), PMC_102 (F1), PopTart_93 (F1), QueenHazel_71 (I1), Rockne_106 (F1), Royals2015_106 (F1), SassyB_93 (F1), SimranZ1_102 (F1), Wachhund_99 (F1), Xula_72 (I1),

Start 18:

- Found in 2 of 72 (2.8%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LunaStella_89 (F4), TChen_99 (F4),

Start 19:

- Found in 33 of 72 (45.8%) of genes in pham
- Manual Annotations of this start: 3 of 61
- Called 27.3% of time when present
- Phage (with cluster) where this start called: Ardmore_86 (F1), DosHalletts_102 (F1), Fastidio_102 (F1), Fruitloop_100 (F1), IbOuu_98 (F1), LittleShirley_109 (F1), Melissauren88_92 (F1), MilanaBonita_95 (F1), PhesterPhotato_105 (F1),

Summary by clusters:

There are 5 clusters represented in this pham: I1, F1, singleton, J, F4,

Info for manual annotations of cluster F1:

- Start number 13 was manually annotated 1 time for cluster F1.
- Start number 16 was manually annotated 22 times for cluster F1.
- Start number 17 was manually annotated 30 times for cluster F1.
- Start number 19 was manually annotated 3 times for cluster F1.

Info for manual annotations of cluster F4:

- Start number 18 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster I1:

- Start number 17 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster J:

•Start number 11 was manually annotated 1 time for cluster J.

Gene Information:

Gene: Akhila_96 Start: 54481, Stop: 54954, Start Num: 16

Candidate Starts for Akhila_96:

(2, 54016), (3, 54043), (4, 54049), (5, 54052), (6, 54091), (12, 54460), (Start: 13 @54463 has 1 MA's), (Start: 16 @54481 has 22 MA's), (Start: 19 @54496 has 3 MA's), (21, 54520), (22, 54580), (23, 54619), (30, 54784), (35, 54901),

Gene: ArcusAngelus_102 Start: 56799, Stop: 57272, Start Num: 16

Candidate Starts for ArcusAngelus_102:

(2, 56334), (3, 56361), (4, 56367), (5, 56370), (6, 56409), (12, 56778), (Start: 13 @56781 has 1 MA's), (Start: 16 @56799 has 22 MA's), (Start: 19 @56814 has 3 MA's), (21, 56838), (22, 56898), (23, 56937), (30, 57102), (35, 57219),

Gene: Ardmore_86 Start: 50385, Stop: 50843, Start Num: 19

Candidate Starts for Ardmore_86:

(2, 49905), (3, 49932), (4, 49938), (5, 49941), (6, 49980), (12, 50349), (Start: 13 @50352 has 1 MA's), (Start: 16 @50370 has 22 MA's), (Start: 19 @50385 has 3 MA's), (21, 50409), (22, 50469), (23, 50508), (30, 50673), (35, 50790),

Gene: Ariel_16 Start: 10208, Stop: 10687, Start Num: 11

Candidate Starts for Ariel_16:

(Start: 11 @10208 has 1 MA's), (14, 10226), (24, 10364), (25, 10367), (27, 10442), (28, 10490), (31, 10523), (33, 10589), (36, 10682),

Gene: Batiatus_102 Start: 55920, Stop: 56396, Start Num: 16

Candidate Starts for Batiatus_102:

(2, 55455), (3, 55482), (4, 55488), (5, 55491), (6, 55530), (12, 55899), (Start: 13 @55902 has 1 MA's), (Start: 16 @55920 has 22 MA's), (Start: 19 @55935 has 3 MA's), (21, 55959), (22, 56019), (23, 56058), (30, 56223), (35, 56340),

Gene: Beakin_95 Start: 53183, Stop: 53656, Start Num: 16

Candidate Starts for Beakin_95:

(2, 52718), (3, 52745), (4, 52751), (5, 52754), (6, 52793), (12, 53162), (Start: 13 @53165 has 1 MA's), (Start: 16 @53183 has 22 MA's), (Start: 19 @53198 has 3 MA's), (21, 53222), (22, 53282), (23, 53321), (30, 53486), (35, 53603),

Gene: Boomer_103 Start: 56660, Stop: 57130, Start Num: 17

Candidate Starts for Boomer_103:

(Start: 17 @56660 has 32 MA's), (21, 56696), (22, 56756), (23, 56795), (30, 56960), (35, 57077),

Gene: Byougenkin_99 Start: 53124, Stop: 53597, Start Num: 17

Candidate Starts for Byougenkin_99:

(Start: 17 @53124 has 32 MA's), (21, 53160), (22, 53220), (23, 53259), (30, 53424),

Gene: CaptainTrips_104 Start: 55558, Stop: 56031, Start Num: 16

Candidate Starts for CaptainTrips_104:

(2, 55093), (3, 55120), (4, 55126), (5, 55129), (6, 55168), (12, 55537), (Start: 13 @55540 has 1 MA's), (Start: 16 @55558 has 22 MA's), (Start: 19 @55573 has 3 MA's), (21, 55597), (22, 55657), (23, 55696), (30, 55861), (35, 55978),

Gene: Chevrolet_110 Start: 56800, Stop: 57273, Start Num: 16

Candidate Starts for Chevrolet_110:

(2, 56335), (3, 56362), (4, 56368), (5, 56371), (6, 56410), (12, 56779), (Start: 13 @56782 has 1 MA's), (Start: 16 @56800 has 22 MA's), (Start: 19 @56815 has 3 MA's), (21, 56839), (22, 56899), (23, 56938), (30, 57103), (35, 57220),

Gene: Chuckly_99 Start: 52600, Stop: 53076, Start Num: 16

Candidate Starts for Chuckly_99:

(2, 52135), (3, 52162), (4, 52168), (5, 52171), (6, 52210), (12, 52579), (Start: 13 @52582 has 1 MA's), (Start: 16 @52600 has 22 MA's), (Start: 19 @52615 has 3 MA's), (21, 52639), (22, 52699), (23, 52738), (30, 52903), (35, 53020),

Gene: Cornucopia_102 Start: 53860, Stop: 54333, Start Num: 17

Candidate Starts for Cornucopia_102:

(9, 53749), (10, 53752), (Start: 17 @53860 has 32 MA's), (23, 53995), (26, 54007), (27, 54079), (29, 54139), (35, 54277),

Gene: DLane_102 Start: 57129, Stop: 57602, Start Num: 16

Candidate Starts for DLane_102:

(2, 56664), (3, 56691), (4, 56697), (5, 56700), (6, 56739), (12, 57108), (Start: 13 @57111 has 1 MA's), (Start: 16 @57129 has 22 MA's), (Start: 19 @57144 has 3 MA's), (21, 57168), (22, 57228), (23, 57267), (30, 57432), (35, 57549),

Gene: DillTech15_108 Start: 56028, Stop: 56501, Start Num: 16

Candidate Starts for DillTech15_108:

(1, 55467), (2, 55563), (3, 55590), (4, 55596), (5, 55599), (6, 55638), (12, 56007), (Start: 13 @56010 has 1 MA's), (Start: 16 @56028 has 22 MA's), (Start: 19 @56043 has 3 MA's), (21, 56067), (22, 56127), (23, 56166), (30, 56331), (35, 56448),

Gene: DosHalletts_102 Start: 56195, Stop: 56653, Start Num: 19

Candidate Starts for DosHalletts_102:

(2, 55715), (3, 55742), (4, 55748), (5, 55751), (6, 55790), (12, 56159), (Start: 13 @56162 has 1 MA's), (Start: 16 @56180 has 22 MA's), (Start: 19 @56195 has 3 MA's), (21, 56219), (22, 56279), (23, 56318), (30, 56483), (35, 56600),

Gene: DotProduct_96 Start: 53549, Stop: 54022, Start Num: 17

Candidate Starts for DotProduct_96:

(Start: 17 @53549 has 32 MA's), (21, 53585), (22, 53645), (23, 53684), (30, 53849), (35, 53966),

Gene: Fastidio_102 Start: 54084, Stop: 54542, Start Num: 19

Candidate Starts for Fastidio_102:

(2, 53604), (3, 53631), (4, 53637), (5, 53640), (6, 53679), (12, 54048), (Start: 13 @54051 has 1 MA's), (Start: 16 @54069 has 22 MA's), (Start: 19 @54084 has 3 MA's), (21, 54108), (22, 54168), (23, 54207), (30, 54372), (35, 54489),

Gene: Filuzino_102 Start: 57535, Stop: 58008, Start Num: 16

Candidate Starts for Filuzino_102:

(2, 57070), (3, 57097), (4, 57103), (5, 57106), (6, 57145), (12, 57514), (Start: 13 @57517 has 1 MA's), (Start: 16 @57535 has 22 MA's), (Start: 19 @57550 has 3 MA's), (21, 57574), (22, 57634), (23,

57673), (30, 57838), (35, 57955),

Gene: Firehouse51_97 Start: 56605, Stop: 57078, Start Num: 17

Candidate Starts for Firehouse51_97:

(Start: 17 @56605 has 32 MA's), (21, 56641), (22, 56701), (23, 56740), (30, 56905), (32, 56962),

Gene: Flathead_105 Start: 56108, Stop: 56581, Start Num: 17

Candidate Starts for Flathead_105:

(Start: 17 @56108 has 32 MA's), (23, 56243),

Gene: Fruitloop_100 Start: 56715, Stop: 57173, Start Num: 19

Candidate Starts for Fruitloop_100:

(2, 56235), (3, 56262), (4, 56268), (5, 56271), (6, 56310), (12, 56679), (Start: 13 @56682 has 1 MA's), (Start: 16 @56700 has 22 MA's), (Start: 19 @56715 has 3 MA's), (21, 56739), (22, 56799), (23, 56838), (30, 57003), (35, 57120),

Gene: GUmbie_101 Start: 55573, Stop: 56046, Start Num: 17

Candidate Starts for GUmbie_101:

(Start: 17 @55573 has 32 MA's), (21, 55609), (22, 55669), (23, 55708), (30, 55873), (35, 55990),

Gene: Galactic_107 Start: 56300, Stop: 56773, Start Num: 17

Candidate Starts for Galactic_107:

(Start: 17 @56300 has 32 MA's), (21, 56336), (22, 56396), (23, 56435), (30, 56600),

Gene: GigiOuiOui_97 Start: 54828, Stop: 55301, Start Num: 17

Candidate Starts for GigiOuiOui_97:

(Start: 17 @54828 has 32 MA's), (21, 54864), (22, 54924), (23, 54963), (30, 55128),

Gene: Hades_99 Start: 53219, Stop: 53689, Start Num: 17

Candidate Starts for Hades_99:

(Start: 17 @53219 has 32 MA's), (21, 53255), (22, 53315), (23, 53354), (30, 53519), (35, 53636),

Gene: Hamulus_102 Start: 55385, Stop: 55858, Start Num: 16

Candidate Starts for Hamulus_102:

(2, 54920), (3, 54947), (4, 54953), (5, 54956), (6, 54995), (12, 55364), (Start: 13 @55367 has 1 MA's), (Start: 16 @55385 has 22 MA's), (Start: 19 @55400 has 3 MA's), (21, 55424), (22, 55484), (23, 55523), (30, 55688), (35, 55805),

Gene: Harley_104 Start: 56809, Stop: 57282, Start Num: 17

Candidate Starts for Harley_104:

(Start: 17 @56809 has 32 MA's), (21, 56845), (22, 56905), (23, 56944), (30, 57109),

Gene: Hegedechwinu_111 Start: 56173, Stop: 56646, Start Num: 17

Candidate Starts for Hegedechwinu_111:

(Start: 17 @56173 has 32 MA's), (23, 56308),

Gene: lbOuu_98 Start: 53542, Stop: 54000, Start Num: 19

Candidate Starts for lbOuu_98:

(12, 53506), (Start: 13 @53509 has 1 MA's), (Start: 16 @53527 has 22 MA's), (Start: 19 @53542 has 3 MA's), (21, 53566), (22, 53626), (23, 53665), (30, 53830), (35, 53947),

Gene: lbhubesi_99 Start: 53678, Stop: 54151, Start Num: 17

Candidate Starts for lbhubesi_99:

(Start: 17 @53678 has 32 MA's), (21, 53714), (22, 53774), (23, 53813), (30, 53978),

Gene: Juice456_101 Start: 55348, Stop: 55818, Start Num: 17

Candidate Starts for Juice456_101:

(Start: 17 @55348 has 32 MA's), (21, 55384), (22, 55444), (23, 55483), (30, 55648), (35, 55765),

Gene: Juniper1_97 Start: 54576, Stop: 55049, Start Num: 17

Candidate Starts for Juniper1_97:

(Start: 17 @54576 has 32 MA's), (21, 54612), (22, 54672), (23, 54711), (30, 54876),

Gene: Kersh_105 Start: 58630, Stop: 59103, Start Num: 17

Candidate Starts for Kersh_105:

(Start: 17 @58630 has 32 MA's), (21, 58666), (22, 58726), (23, 58765), (30, 58930),

Gene: Kimberlium_103 Start: 55448, Stop: 55918, Start Num: 17

Candidate Starts for Kimberlium_103:

(Start: 17 @55448 has 32 MA's), (21, 55484), (22, 55544), (23, 55583), (30, 55748), (35, 55865),

Gene: LittleShirley_109 Start: 57244, Stop: 57702, Start Num: 19

Candidate Starts for LittleShirley_109:

(2, 56764), (3, 56791), (4, 56797), (5, 56800), (6, 56839), (12, 57208), (Start: 13 @57211 has 1 MA's), (Start: 16 @57229 has 22 MA's), (Start: 19 @57244 has 3 MA's), (21, 57268), (22, 57328), (23, 57367), (30, 57532), (35, 57649),

Gene: LunaBlu_109 Start: 57722, Stop: 58195, Start Num: 17

Candidate Starts for LunaBlu_109:

(Start: 17 @57722 has 32 MA's), (21, 57758), (22, 57818), (23, 57857), (30, 58022),

Gene: LunaStella_89 Start: 54190, Stop: 54663, Start Num: 18

Candidate Starts for LunaStella_89:

(Start: 18 @54190 has 1 MA's), (20, 54223), (21, 54226), (23, 54325), (26, 54337), (27, 54409), (29, 54469), (34, 54592), (35, 54607),

Gene: Mahavrat_96 Start: 53605, Stop: 54078, Start Num: 17

Candidate Starts for Mahavrat_96:

(Start: 17 @53605 has 32 MA's), (21, 53641), (22, 53701), (27, 53824), (30, 53905),

Gene: Marker_115 Start: 57234, Stop: 57731, Start Num: 12

Candidate Starts for Marker_115:

(12, 57234), (Start: 13 @57237 has 1 MA's), (23, 57393), (26, 57405), (27, 57477), (29, 57537), (35, 57675),

Gene: Melissauren88_92 Start: 52600, Stop: 53058, Start Num: 19

Candidate Starts for Melissauren88_92:

(2, 52120), (3, 52147), (4, 52153), (5, 52156), (6, 52195), (12, 52564), (Start: 13 @52567 has 1 MA's), (Start: 16 @52585 has 22 MA's), (Start: 19 @52600 has 3 MA's), (21, 52624), (22, 52684), (23, 52723), (30, 52888), (35, 53005),

Gene: MilanaBonita_95 Start: 54496, Stop: 54954, Start Num: 19

Candidate Starts for MilanaBonita_95:

(2, 54016), (3, 54043), (4, 54049), (5, 54052), (6, 54091), (12, 54460), (Start: 13 @54463 has 1 MA's), (Start: 16 @54481 has 22 MA's), (Start: 19 @54496 has 3 MA's), (21, 54520), (22, 54580), (23, 54619), (30, 54784), (35, 54901),

Gene: MinionDave_100 Start: 56257, Stop: 56730, Start Num: 16

Candidate Starts for MinionDave_100:

(1, 55696), (2, 55792), (3, 55819), (4, 55825), (5, 55828), (6, 55867), (12, 56236), (Start: 13 @56239 has 1 MA's), (Start: 16 @56257 has 22 MA's), (Start: 19 @56272 has 3 MA's), (21, 56296), (22, 56356), (23, 56395), (30, 56560), (35, 56677),

Gene: MooMoo_95 Start: 53643, Stop: 54116, Start Num: 15

Candidate Starts for MooMoo_95:

(3, 53208), (4, 53214), (5, 53217), (6, 53256), (Start: 13 @53628 has 1 MA's), (Start: 15 @53643 has 1 MA's), (22, 53739), (23, 53778),

Gene: Mova_104 Start: 56218, Stop: 56691, Start Num: 16

Candidate Starts for Mova_104:

(2, 55753), (3, 55780), (4, 55786), (5, 55789), (6, 55828), (12, 56197), (Start: 13 @56200 has 1 MA's), (Start: 16 @56218 has 22 MA's), (Start: 19 @56233 has 3 MA's), (21, 56257), (22, 56317), (23, 56356), (30, 56521), (35, 56638),

Gene: Mozy_107 Start: 56105, Stop: 56578, Start Num: 17

Candidate Starts for Mozy_107:

(Start: 17 @56105 has 32 MA's), (21, 56141), (22, 56201), (23, 56240), (30, 56405),

Gene: Ms6_104 Start: 52476, Stop: 52949, Start Num: 16

Candidate Starts for Ms6_104:

(12, 52455), (Start: 13 @52458 has 1 MA's), (Start: 16 @52476 has 22 MA's), (Start: 19 @52491 has 3 MA's), (21, 52515), (22, 52575), (23, 52614), (35, 52896),

Gene: Mutaforma13_104 Start: 56140, Stop: 56613, Start Num: 17

Candidate Starts for Mutaforma13_104:

(Start: 17 @56140 has 32 MA's), (21, 56176), (22, 56236), (23, 56275), (30, 56440), (32, 56497),

Gene: Nitzel_97 Start: 53296, Stop: 53769, Start Num: 17

Candidate Starts for Nitzel_97:

(Start: 17 @53296 has 32 MA's), (21, 53332), (22, 53392), (23, 53431), (30, 53596),

Gene: Ogopogo_107 Start: 55303, Stop: 55776, Start Num: 17

Candidate Starts for Ogopogo_107:

(Start: 17 @55303 has 32 MA's), (23, 55438),

Gene: Ovechkin_105 Start: 56777, Stop: 57250, Start Num: 17

Candidate Starts for Ovechkin_105:

(Start: 17 @56777 has 32 MA's), (21, 56813), (22, 56873), (23, 56912), (30, 57077),

Gene: OwlsT2W_100 Start: 54967, Stop: 55455, Start Num: 13

Candidate Starts for OwlsT2W_100:

(Start: 13 @54967 has 1 MA's), (23, 55117),

Gene: PMC_102 Start: 55131, Stop: 55604, Start Num: 17

Candidate Starts for PMC_102:

(Start: 17 @55131 has 32 MA's), (23, 55266),

Gene: Phalconet_103 Start: 55878, Stop: 56351, Start Num: 16

Candidate Starts for Phalconet_103:

(2, 55413), (3, 55440), (4, 55446), (5, 55449), (6, 55488), (12, 55857), (Start: 13 @55860 has 1 MA's), (Start: 16 @55878 has 22 MA's), (Start: 19 @55893 has 3 MA's), (21, 55917), (22, 55977), (23, 56016), (30, 56181), (31, 56184), (35, 56298),

Gene: PhesterPhotato_105 Start: 55867, Stop: 56325, Start Num: 19

Candidate Starts for PhesterPhotato_105:

(2, 55387), (3, 55414), (4, 55420), (5, 55423), (6, 55462), (12, 55831), (Start: 13 @55834 has 1 MA's), (Start: 16 @55852 has 22 MA's), (Start: 19 @55867 has 3 MA's), (21, 55891), (22, 55951), (23, 55990), (30, 56155), (35, 56272),

Gene: PopTart_93 Start: 53534, Stop: 54007, Start Num: 17

Candidate Starts for PopTart_93:

(Start: 17 @53534 has 32 MA's), (21, 53570), (22, 53630), (23, 53669), (27, 53753), (30, 53834),

Gene: QueenHazel_71 Start: 46520, Stop: 46993, Start Num: 17

Candidate Starts for QueenHazel_71:

(7, 46307), (8, 46364), (Start: 17 @46520 has 32 MA's), (21, 46556), (22, 46616), (23, 46655), (30, 46820), (35, 46937),

Gene: QuickMath_103 Start: 55756, Stop: 56229, Start Num: 16

Candidate Starts for QuickMath_103:

(2, 55291), (3, 55318), (4, 55324), (5, 55327), (6, 55366), (12, 55735), (Start: 13 @55738 has 1 MA's), (Start: 16 @55756 has 22 MA's), (Start: 19 @55771 has 3 MA's), (21, 55795), (22, 55855), (23, 55894), (30, 56059), (35, 56176),

Gene: Rockne_106 Start: 55143, Stop: 55616, Start Num: 17

Candidate Starts for Rockne_106:

(Start: 17 @55143 has 32 MA's), (23, 55278),

Gene: Royals2015_106 Start: 55014, Stop: 55487, Start Num: 17

Candidate Starts for Royals2015_106:

(Start: 17 @55014 has 32 MA's), (21, 55050), (23, 55149),

Gene: SG4_103 Start: 57246, Stop: 57719, Start Num: 16

Candidate Starts for SG4_103:

(2, 56781), (3, 56808), (4, 56814), (5, 56817), (6, 56856), (12, 57225), (Start: 13 @57228 has 1 MA's), (Start: 16 @57246 has 22 MA's), (Start: 19 @57261 has 3 MA's), (21, 57285), (22, 57345), (23, 57384), (30, 57549), (35, 57666),

Gene: SassyB_93 Start: 53534, Stop: 54007, Start Num: 17

Candidate Starts for SassyB_93:

(Start: 17 @53534 has 32 MA's), (21, 53570), (22, 53630), (23, 53669), (27, 53753), (30, 53834),

Gene: Seagreen_103 Start: 56384, Stop: 56857, Start Num: 16

Candidate Starts for Seagreen_103:

(2, 55919), (3, 55946), (4, 55952), (5, 55955), (6, 55994), (12, 56363), (Start: 13 @56366 has 1 MA's), (Start: 16 @56384 has 22 MA's), (Start: 19 @56399 has 3 MA's), (21, 56423), (22, 56483), (23, 56522), (30, 56687), (35, 56804),

Gene: ShroomBoi_100 Start: 56090, Stop: 56563, Start Num: 16

Candidate Starts for ShroomBoi_100:

(2, 55625), (3, 55652), (4, 55658), (5, 55661), (6, 55700), (12, 56069), (Start: 13 @56072 has 1 MA's), (Start: 16 @56090 has 22 MA's), (Start: 19 @56105 has 3 MA's), (21, 56129), (22, 56189), (23,

56228), (30, 56393), (35, 56510),

Gene: SimranZ1_102 Start: 55162, Stop: 55635, Start Num: 17

Candidate Starts for SimranZ1_102:

(Start: 17 @55162 has 32 MA's), (23, 55297),

Gene: StAnnes_107 Start: 57587, Stop: 58060, Start Num: 16

Candidate Starts for StAnnes_107:

(2, 57122), (3, 57149), (4, 57155), (5, 57158), (6, 57197), (12, 57566), (Start: 13 @57569 has 1 MA's), (Start: 16 @57587 has 22 MA's), (Start: 19 @57602 has 3 MA's), (21, 57626), (22, 57686), (23, 57725), (30, 57890), (35, 58007),

Gene: Stap_97 Start: 53013, Stop: 53486, Start Num: 16

Candidate Starts for Stap_97:

(1, 52452), (2, 52548), (3, 52575), (4, 52581), (5, 52584), (12, 52992), (Start: 13 @52995 has 1 MA's), (Start: 16 @53013 has 22 MA's), (Start: 19 @53028 has 3 MA's), (21, 53052), (22, 53112), (23, 53151), (30, 53316), (35, 53433),

Gene: TChen_99 Start: 56141, Stop: 56614, Start Num: 18

Candidate Starts for TChen_99:

(Start: 18 @56141 has 1 MA's), (20, 56174), (21, 56177), (23, 56276), (26, 56288), (27, 56360), (29, 56420), (34, 56543), (35, 56558),

Gene: Wachhund_99 Start: 52953, Stop: 53426, Start Num: 17

Candidate Starts for Wachhund_99:

(Start: 17 @52953 has 32 MA's), (21, 52989), (22, 53049), (23, 53088), (30, 53253),

Gene: Wee_105 Start: 57330, Stop: 57806, Start Num: 16

Candidate Starts for Wee_105:

(2, 56865), (3, 56892), (4, 56898), (5, 56901), (6, 56940), (12, 57309), (Start: 13 @57312 has 1 MA's), (Start: 16 @57330 has 22 MA's), (Start: 19 @57345 has 3 MA's), (21, 57369), (22, 57429), (23, 57468), (30, 57633), (35, 57750),

Gene: Whatsapiecost_96 Start: 51056, Stop: 51529, Start Num: 16

Candidate Starts for Whatsapiecost_96:

(2, 50591), (3, 50618), (4, 50624), (5, 50627), (6, 50666), (12, 51035), (Start: 13 @51038 has 1 MA's), (Start: 16 @51056 has 22 MA's), (Start: 19 @51071 has 3 MA's), (21, 51095), (22, 51155), (23, 51194), (30, 51359), (35, 51476),

Gene: XFactor_93 Start: 53847, Stop: 54320, Start Num: 16

Candidate Starts for XFactor_93:

(2, 53382), (3, 53409), (4, 53415), (5, 53418), (6, 53457), (12, 53826), (Start: 13 @53829 has 1 MA's), (Start: 16 @53847 has 22 MA's), (Start: 19 @53862 has 3 MA's), (21, 53886), (22, 53946), (23, 53985), (30, 54150), (35, 54267),

Gene: Xula_72 Start: 47007, Stop: 47480, Start Num: 17

Candidate Starts for Xula_72:

(7, 46794), (Start: 17 @47007 has 32 MA's), (21, 47043), (22, 47103), (23, 47142), (30, 47307), (35, 47424),