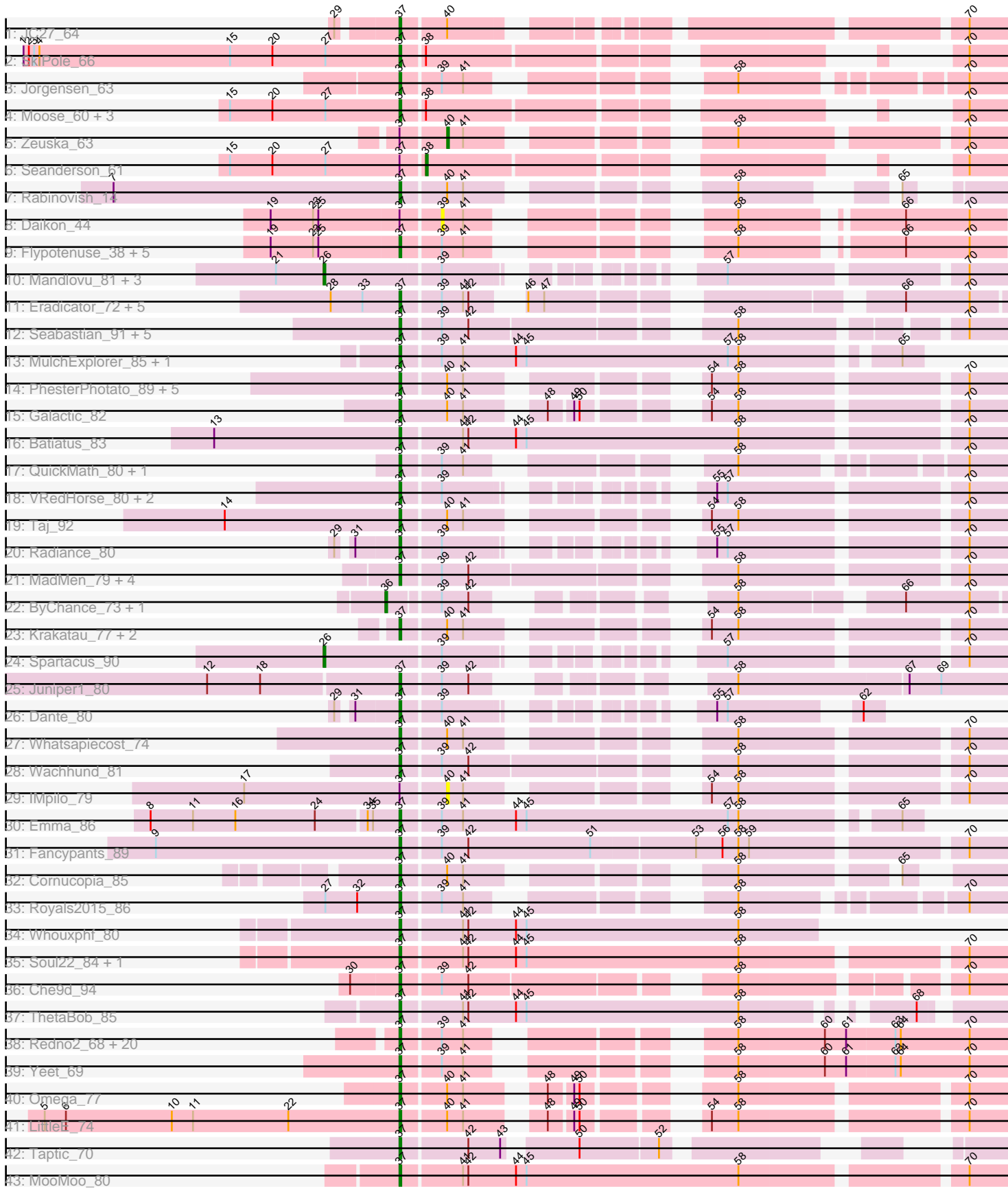


Pham 192463



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 192463 Report

This analysis was run 11/02/24 on database version 579.

Pham number 192463 has 101 members, 4 are drafts.

Phages represented in each track:

- Track 1 : JC27_64
- Track 2 : SkiPole_66
- Track 3 : Jorgensen_63
- Track 4 : Moose_60, SwissCheese_62, Forsytheast_60, Bruns_60
- Track 5 : Zeuska_63
- Track 6 : Seanderson_61
- Track 7 : Rabinovish_14
- Track 8 : Daikon_44
- Track 9 : Flypotenuse_38, Glexan_41, Traaww1_40, Balomoji_42, Gator_41, Harella_43
- Track 10 : Mandlovu_81, Hlubikazi_81, Hades_81, Strokeseat_81
- Track 11 : Eradicator_72, KashFlow_68, Cali_17, Sprinklers_16, BadAgartude_17, SuperGrey_82
- Track 12 : Seabastian_91, OfUltron_91, Ochi17_89, Jinglebell_90, Llama_90, Modragons_88
- Track 13 : MulchExplorer_85, Kimberlium_83
- Track 14 : PhesterPhotato_89, Phalconet_82, Tweety_86, Wee_91, Eish_88, DeadP_86
- Track 15 : Galactic_82
- Track 16 : Batiatus_83
- Track 17 : QuickMath_80, Juice456_78
- Track 18 : VRedHorse_80, Pacc40_73, Cornucopia_81
- Track 19 : Taj_92
- Track 20 : Radiance_80
- Track 21 : MadMen_79, Sabbb_83, Karhdo_80, Renaud18_93, Kersh_83
- Track 22 : ByChance_73, ShowerHandel_82
- Track 23 : Krakatau_77, Job42_84, BuzzLyseyear_92
- Track 24 : Spartacus_90
- Track 25 : Juniper1_80
- Track 26 : Dante_80
- Track 27 : Whatsapiecost_74
- Track 28 : Wachhund_81
- Track 29 : IMpilo_79
- Track 30 : Emma_86
- Track 31 : Fancypants_89
- Track 32 : Cornucopia_85
- Track 33 : Royals2015_86

- Track 34 : Whouxphf_80
- Track 35 : Soul22_84, Llij_80
- Track 36 : Che9d_94
- Track 37 : ThetaBob_85
- Track 38 : Redno2_68, Schatzie_66, Zelink_69, Kalah2_66, Ejimix_71, DmpstrDiver_71, Superphikiman_69, Beem_71, JuicyJay_70, NihilNomen_72, ThreeRngTarjay_69, Dallas_70, Odette_70, Minerva_77, HokkenD_64, Lucky2013_69, Pound_75, Wanda_75, Halley_73, Klein_71, Hughesyang_70
- Track 39 : Yeet_69
- Track 40 : Omega_77
- Track 41 : LittleE_74
- Track 42 : Taptic_70
- Track 43 : MooMoo_80

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 88 of the 97 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- BadAgartude_17, Balomoji_42, Batiatus_83, Beem_71, Bruns_60, BuzzLyseyear_92, Cali_17, Che9d_94, Cornucopia_81, Cornucopia_85, Dallas_70, Dante_80, DeadP_86, DmpstrDiver_71, Eish_88, Ejimix_71, Emma_86, Eradicator_72, Fancypants_89, Flypotenuse_38, Forsytheast_60, Galactic_82, Gator_41, Glexan_41, Halley_73, Harella_43, HokkenD_64, Hughesyang_70, JC27_64, Jinglebell_90, Job42_84, Jorgensen_63, Juice456_78, JuicyJay_70, Juniper1_80, Kalah2_66, Karhdo_80, KashFlow_68, Kersh_83, Kimberlium_83, Klein_71, Krakatau_77, LittleE_74, Llama_90, Llij_80, Lucky2013_69, MadMen_79, Minerva_77, Modragons_88, MooMoo_80, Moose_60, MulchExplorer_85, NihilNomen_72, Ochi17_89, Odette_70, OfUltron_91, Omega_77, Pacc40_73, Phalconet_82, PhesterPhotato_89, Pound_75, QuickMath_80, Rabinovish_14, Radiance_80, Redno2_68, Renaud18_93, Royals2015_86, Sabbb_83, Schatzie_66, Sebastian_91, SkiPole_66, Soul22_84, Sprinklers_16, SuperGrey_82, Superphikiman_69, SwissCheese_62, Taj_92, Taptic_70, ThetaBob_85, ThreeRngTarjay_69, Traaww1_40, Tweety_86, VRedHorse_80, Wachhund_81, Wanda_75, Wee_91, Whatsapiecost_74, Whouxphf_80, Yeet_69, Zelink_69,

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

- Daikon_44, IMpilo_79, Seanderson_61, Zeuska_63,

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

- ByChance_73, Hades_81, Hlubikazi_81, Mandlovu_81, ShowerHandel_82, Spartacus_90, Strokeseat_81,

Summary by start number:

Start 26:

- Found in 5 of 101 (5.0%) of genes in pham
- Manual Annotations of this start: 5 of 97
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Hades_81 (F1), Hlubikazi_81 (F1), Mandlovu_81 (F1), Spartacus_90 (F1), Strokeseat_81 (F1),

Start 36:

- Found in 2 of 101 (2.0%) of genes in pham
- Manual Annotations of this start: 2 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ByChance_73 (F1), ShowerHandel_82 (F1),

Start 37:

- Found in 94 of 101 (93.1%) of genes in pham
- Manual Annotations of this start: 88 of 97
- Called 95.7% of time when present
- Phage (with cluster) where this start called: BadAgartude_17 (C1), Balomoji_42 (E), Batiatus_83 (F1), Beem_71 (J), Bruns_60 (A1), BuzzLyseyear_92 (F1), Cali_17 (C1), Che9d_94 (F2), Cornucopia_81 (F1), Cornucopia_85 (F1), Dallas_70 (J), Dante_80 (F1), DeadP_86 (F1), DmpstrDiver_71 (J), Eish_88 (F1), Ejimix_71 (J), Emma_86 (F1), Eradicator_72 (F1), Fancypants_89 (F1), Flypotenuse_38 (E), Forsytheast_60 (A1), Galactic_82 (F1), Gator_41 (E), Glexan_41 (E), Halley_73 (J), Harella_43 (E), HokkenD_64 (J), Hughesyang_70 (J), JC27_64 (A1), Jinglebell_90 (F1), Job42_84 (F1), Jorgensen_63 (A1), Juice456_78 (F1), JuicyJay_70 (J), Juniper1_80 (F1), Kalah2_66 (J), Karhdo_80 (F1), KashFlow_68 (J), Kersh_83 (F1), Kimberlium_83 (F1), Klein_71 (J), Krakatau_77 (F1), LittleE_74 (J), Llama_90 (F1), Llij_80 (F1), Lucky2013_69 (J), MadMen_79 (F1), Minerva_77 (J), Modragons_88 (F1), MooMoo_80 (singleton), Moose_60 (A1), MulchExplorer_85 (F1), NihilNomen_72 (J), Ochi17_89 (F1), Odette_70 (J), OfUltron_91 (F1), Omega_77 (J), Pacc40_73 (F1), Phalconet_82 (F1), PhesterPhotato_89 (F1), Pound_75 (J), QuickMath_80 (F1), Rabinovish_14 (C1), Radiance_80 (F1), Redno2_68 (J), Renaud18_93 (F4), Royals2015_86 (F1), Sabbb_83 (F1), Schatzie_66 (J), Seabastian_91 (F1), SkiPole_66 (A1), Soul22_84 (F2), Sprinklers_16 (C1), SuperGrey_82 (F1), Superphikiman_69 (J), SwissCheese_62 (A1), Taj_92 (F1), Taptic_70 (W), ThetaBob_85 (F4), ThreeRngTarjay_69 (J), Traaww1_40 (E), Tweety_86 (F1), VRedHorse_80 (F1), Wachhund_81 (F1), Wanda_75 (J), Wee_91 (F1), Whatsapiecost_74 (F1), Whouxphf_80 (F1), Yeet_69 (J), Zelink_69 (J),

Start 38:

- Found in 6 of 101 (5.9%) of genes in pham
- Manual Annotations of this start: 1 of 97
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Seanderson_61 (A1),

Start 39:

- Found in 69 of 101 (68.3%) of genes in pham
- No Manual Annotations of this start.
- Called 1.4% of time when present
- Phage (with cluster) where this start called: Daikon_44 (E),

Start 40:

- Found in 19 of 101 (18.8%) of genes in pham
- Manual Annotations of this start: 1 of 97
- Called 10.5% of time when present
- Phage (with cluster) where this start called: IMpilo_79 (F1), Zeuska_63 (A1),

Summary by clusters:

There are 9 clusters represented in this pham: F1, F2, F4, J, singleton, A1, W, E, C1,

Info for manual annotations of cluster A1:

- Start number 37 was manually annotated 7 times for cluster A1.
- Start number 38 was manually annotated 1 time for cluster A1.
- Start number 40 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster C1:

- Start number 37 was manually annotated 4 times for cluster C1.

Info for manual annotations of cluster E:

- Start number 37 was manually annotated 6 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 26 was manually annotated 5 times for cluster F1.
- Start number 36 was manually annotated 2 times for cluster F1.
- Start number 37 was manually annotated 41 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 37 was manually annotated 2 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 37 was manually annotated 2 times for cluster F4.

Info for manual annotations of cluster J:

- Start number 37 was manually annotated 24 times for cluster J.

Info for manual annotations of cluster W:

- Start number 37 was manually annotated 1 time for cluster W.

Gene Information:

Gene: BadAgartude_17 Start: 5514, Stop: 5792, Start Num: 37

Candidate Starts for BadAgartude_17:

(28, 5475), (33, 5493), (Start: 37 @5514 has 88 MA's), (39, 5535), (41, 5547), (42, 5550), (46, 5565), (47, 5574), (66, 5736), (70, 5772),

Gene: Balomoji_42 Start: 35703, Stop: 35428, Start Num: 37

Candidate Starts for Balomoji_42:

(19, 35775), (23, 35751), (25, 35748), (Start: 37 @35703 has 88 MA's), (39, 35682), (41, 35670), (58, 35562), (66, 35484), (70, 35448),

Gene: Batiatus_83 Start: 49708, Stop: 50034, Start Num: 37

Candidate Starts for Batiatus_83:

(13, 49603), (Start: 37 @49708 has 88 MA's), (41, 49741), (42, 49744), (44, 49771), (45, 49777), (58, 49897), (70, 50011),

Gene: Beem_71 Start: 50213, Stop: 49920, Start Num: 37

Candidate Starts for Beem_71:

(Start: 37 @50213 has 88 MA's), (39, 50192), (41, 50180), (58, 50072), (60, 50024), (61, 50012), (63, 49985), (64, 49982), (70, 49943),

Gene: Bruns_60 Start: 39755, Stop: 39507, Start Num: 37

Candidate Starts for Bruns_60:

(15, 39851), (20, 39827), (27, 39797), (Start: 37 @39755 has 88 MA's), (Start: 38 @39743 has 1 MA's), (70, 39530),

Gene: BuzzLyseyear_92 Start: 52666, Stop: 52950, Start Num: 37

Candidate Starts for BuzzLyseyear_92:

(Start: 37 @52666 has 88 MA's), (Start: 40 @52690 has 1 MA's), (41, 52699), (54, 52798), (58, 52813), (70, 52927),

Gene: ByChance_73 Start: 44779, Stop: 45045, Start Num: 36

Candidate Starts for ByChance_73:

(Start: 36 @44779 has 2 MA's), (39, 44806), (42, 44821), (58, 44911), (66, 44989), (70, 45025),

Gene: Cali_17 Start: 6490, Stop: 6768, Start Num: 37

Candidate Starts for Cali_17:

(28, 6451), (33, 6469), (Start: 37 @6490 has 88 MA's), (39, 6511), (41, 6523), (42, 6526), (46, 6541), (47, 6550), (66, 6712), (70, 6748),

Gene: Che9d_94 Start: 49583, Stop: 49876, Start Num: 37

Candidate Starts for Che9d_94:

(30, 49556), (Start: 37 @49583 has 88 MA's), (39, 49604), (42, 49619), (58, 49745), (70, 49853),

Gene: Cornucopia_81 Start: 47550, Stop: 47819, Start Num: 37

Candidate Starts for Cornucopia_81:

(Start: 37 @47550 has 88 MA's), (39, 47571), (55, 47670), (57, 47676), (70, 47796),

Gene: Cornucopia_85 Start: 48642, Stop: 48905, Start Num: 37

Candidate Starts for Cornucopia_85:

(Start: 37 @48642 has 88 MA's), (Start: 40 @48666 has 1 MA's), (41, 48675), (58, 48789), (65, 48864),

Gene: Daikon_44 Start: 35703, Stop: 35449, Start Num: 39

Candidate Starts for Daikon_44:

(19, 35796), (23, 35772), (25, 35769), (Start: 37 @35724 has 88 MA's), (39, 35703), (41, 35691), (58, 35583), (66, 35505), (70, 35469),

Gene: Dallas_70 Start: 49134, Stop: 48841, Start Num: 37

Candidate Starts for Dallas_70:

(Start: 37 @49134 has 88 MA's), (39, 49113), (41, 49101), (58, 48993), (60, 48945), (61, 48933), (63, 48906), (64, 48903), (70, 48864),

Gene: Dante_80 Start: 50620, Stop: 50814, Start Num: 37

Candidate Starts for Dante_80:

(29, 50590), (31, 50596), (Start: 37 @50620 has 88 MA's), (39, 50641), (55, 50740), (57, 50746), (62, 50803),

Gene: DeadP_86 Start: 49174, Stop: 49458, Start Num: 37

Candidate Starts for DeadP_86:

(Start: 37 @49174 has 88 MA's), (Start: 40 @49198 has 1 MA's), (41, 49207), (54, 49306), (58, 49321), (70, 49435),

Gene: DmpstrDiver_71 Start: 49561, Stop: 49268, Start Num: 37

Candidate Starts for DmpstrDiver_71:

(Start: 37 @49561 has 88 MA's), (39, 49540), (41, 49528), (58, 49420), (60, 49372), (61, 49360), (63, 49333), (64, 49330), (70, 49291),

Gene: Eish_88 Start: 51057, Stop: 51341, Start Num: 37

Candidate Starts for Eish_88:

(Start: 37 @51057 has 88 MA's), (Start: 40 @51081 has 1 MA's), (41, 51090), (54, 51189), (58, 51204), (70, 51318),

Gene: Ejimix_71 Start: 50999, Stop: 50706, Start Num: 37

Candidate Starts for Ejimix_71:

(Start: 37 @50999 has 88 MA's), (39, 50978), (41, 50966), (58, 50858), (60, 50810), (61, 50798), (63, 50771), (64, 50768), (70, 50729),

Gene: Emma_86 Start: 48537, Stop: 48812, Start Num: 37

Candidate Starts for Emma_86:

(8, 48399), (11, 48423), (16, 48447), (24, 48492), (34, 48519), (35, 48522), (Start: 37 @48537 has 88 MA's), (39, 48558), (41, 48570), (44, 48600), (45, 48606), (57, 48720), (58, 48726), (65, 48801),

Gene: Eradicator_72 Start: 46896, Stop: 47174, Start Num: 37

Candidate Starts for Eradicator_72:

(28, 46857), (33, 46875), (Start: 37 @46896 has 88 MA's), (39, 46917), (41, 46929), (42, 46932), (46, 46947), (47, 46956), (66, 47118), (70, 47154),

Gene: Fancypants_89 Start: 51307, Stop: 51630, Start Num: 37

Candidate Starts for Fancypants_89:

(9, 51169), (Start: 37 @51307 has 88 MA's), (39, 51328), (42, 51343), (51, 51412), (53, 51469), (56, 51484), (58, 51493), (59, 51499), (70, 51607),

Gene: Flypotenuse_38 Start: 34455, Stop: 34180, Start Num: 37

Candidate Starts for Flypotenuse_38:

(19, 34527), (23, 34503), (25, 34500), (Start: 37 @34455 has 88 MA's), (39, 34434), (41, 34422), (58, 34314), (66, 34236), (70, 34200),

Gene: Forsytheast_60 Start: 39923, Stop: 39675, Start Num: 37

Candidate Starts for Forsytheast_60:

(15, 40019), (20, 39995), (27, 39965), (Start: 37 @39923 has 88 MA's), (Start: 38 @39911 has 1 MA's), (70, 39698),

Gene: Galactic_82 Start: 48872, Stop: 49156, Start Num: 37

Candidate Starts for Galactic_82:

(Start: 37 @48872 has 88 MA's), (Start: 40 @48899 has 1 MA's), (41, 48908), (48, 48941), (49, 48953), (50, 48956), (54, 49004), (58, 49019), (70, 49133),

Gene: Gator_41 Start: 35594, Stop: 35319, Start Num: 37

Candidate Starts for Gator_41:

(19, 35666), (23, 35642), (25, 35639), (Start: 37 @35594 has 88 MA's), (39, 35573), (41, 35561), (58, 35453), (66, 35375), (70, 35339),

Gene: Glexan_41 Start: 35582, Stop: 35307, Start Num: 37
Candidate Starts for Glexan_41:
(19, 35654), (23, 35630), (25, 35627), (Start: 37 @35582 has 88 MA's), (39, 35561), (41, 35549), (58, 35441), (66, 35363), (70, 35327),

Gene: Hades_81 Start: 47173, Stop: 47484, Start Num: 26
Candidate Starts for Hades_81:
(21, 47146), (Start: 26 @47173 has 5 MA's), (39, 47236), (57, 47341), (70, 47461),

Gene: Halley_73 Start: 50213, Stop: 49920, Start Num: 37
Candidate Starts for Halley_73:
(Start: 37 @50213 has 88 MA's), (39, 50192), (41, 50180), (58, 50072), (60, 50024), (61, 50012), (63, 49985), (64, 49982), (70, 49943),

Gene: Harella_43 Start: 36098, Stop: 35823, Start Num: 37
Candidate Starts for Harella_43:
(19, 36170), (23, 36146), (25, 36143), (Start: 37 @36098 has 88 MA's), (39, 36077), (41, 36065), (58, 35957), (66, 35879), (70, 35843),

Gene: Hlubikazi_81 Start: 47588, Stop: 47899, Start Num: 26
Candidate Starts for Hlubikazi_81:
(21, 47561), (Start: 26 @47588 has 5 MA's), (39, 47651), (57, 47756), (70, 47876),

Gene: HokkenD_64 Start: 48482, Stop: 48189, Start Num: 37
Candidate Starts for HokkenD_64:
(Start: 37 @48482 has 88 MA's), (39, 48461), (41, 48449), (58, 48341), (60, 48293), (61, 48281), (63, 48254), (64, 48251), (70, 48212),

Gene: Hughesyang_70 Start: 50142, Stop: 49849, Start Num: 37
Candidate Starts for Hughesyang_70:
(Start: 37 @50142 has 88 MA's), (39, 50121), (41, 50109), (58, 50001), (60, 49953), (61, 49941), (63, 49914), (64, 49911), (70, 49872),

Gene: IMPilo_79 Start: 47727, Stop: 47987, Start Num: 40
Candidate Starts for IMPilo_79:
(17, 47616), (Start: 37 @47703 has 88 MA's), (Start: 40 @47727 has 1 MA's), (41, 47736), (54, 47835), (58, 47850), (70, 47964),

Gene: JC27_64 Start: 41329, Stop: 41042, Start Num: 37
Candidate Starts for JC27_64:
(29, 41359), (Start: 37 @41329 has 88 MA's), (Start: 40 @41305 has 1 MA's), (70, 41065),

Gene: Jinglebell_90 Start: 50298, Stop: 50591, Start Num: 37
Candidate Starts for Jinglebell_90:
(Start: 37 @50298 has 88 MA's), (39, 50319), (42, 50334), (58, 50460), (70, 50568),

Gene: Job42_84 Start: 52418, Stop: 52702, Start Num: 37
Candidate Starts for Job42_84:
(Start: 37 @52418 has 88 MA's), (Start: 40 @52442 has 1 MA's), (41, 52451), (54, 52550), (58, 52565), (70, 52679),

Gene: Jorgensen_63 Start: 40720, Stop: 40448, Start Num: 37
Candidate Starts for Jorgensen_63:

(Start: 37 @40720 has 88 MA's), (39, 40699), (41, 40687), (58, 40579), (70, 40471),

Gene: Juice456_78 Start: 48213, Stop: 48485, Start Num: 37

Candidate Starts for Juice456_78:

(Start: 37 @48213 has 88 MA's), (39, 48234), (41, 48246), (58, 48354), (70, 48462),

Gene: JuicyJay_70 Start: 51347, Stop: 51054, Start Num: 37

Candidate Starts for JuicyJay_70:

(Start: 37 @51347 has 88 MA's), (39, 51326), (41, 51314), (58, 51206), (60, 51158), (61, 51146), (63, 51119), (64, 51116), (70, 51077),

Gene: Juniper1_80 Start: 48708, Stop: 48983, Start Num: 37

Candidate Starts for Juniper1_80:

(12, 48603), (18, 48633), (Start: 37 @48708 has 88 MA's), (39, 48729), (42, 48744), (58, 48834), (67, 48927), (69, 48945),

Gene: Kalah2_66 Start: 49506, Stop: 49213, Start Num: 37

Candidate Starts for Kalah2_66:

(Start: 37 @49506 has 88 MA's), (39, 49485), (41, 49473), (58, 49365), (60, 49317), (61, 49305), (63, 49278), (64, 49275), (70, 49236),

Gene: Karhdo_80 Start: 47607, Stop: 47906, Start Num: 37

Candidate Starts for Karhdo_80:

(Start: 37 @47607 has 88 MA's), (39, 47628), (42, 47643), (58, 47769), (70, 47883),

Gene: KashFlow_68 Start: 45901, Stop: 45623, Start Num: 37

Candidate Starts for KashFlow_68:

(28, 45940), (33, 45922), (Start: 37 @45901 has 88 MA's), (39, 45880), (41, 45868), (42, 45865), (46, 45850), (47, 45841), (66, 45679), (70, 45643),

Gene: Kersh_83 Start: 50793, Stop: 51092, Start Num: 37

Candidate Starts for Kersh_83:

(Start: 37 @50793 has 88 MA's), (39, 50814), (42, 50829), (58, 50955), (70, 51069),

Gene: Kimberlium_83 Start: 48559, Stop: 48834, Start Num: 37

Candidate Starts for Kimberlium_83:

(Start: 37 @48559 has 88 MA's), (39, 48580), (41, 48592), (44, 48622), (45, 48628), (57, 48742), (58, 48748), (65, 48823),

Gene: Klein_71 Start: 49529, Stop: 49236, Start Num: 37

Candidate Starts for Klein_71:

(Start: 37 @49529 has 88 MA's), (39, 49508), (41, 49496), (58, 49388), (60, 49340), (61, 49328), (63, 49301), (64, 49298), (70, 49259),

Gene: Krakatau_77 Start: 45727, Stop: 46011, Start Num: 37

Candidate Starts for Krakatau_77:

(Start: 37 @45727 has 88 MA's), (Start: 40 @45751 has 1 MA's), (41, 45760), (54, 45859), (58, 45874), (70, 45988),

Gene: LittleE_74 Start: 49484, Stop: 49203, Start Num: 37

Candidate Starts for LittleE_74:

(5, 49685), (6, 49673), (10, 49613), (11, 49601), (22, 49547), (Start: 37 @49484 has 88 MA's), (Start: 40 @49460 has 1 MA's), (41, 49451), (48, 49418), (49, 49406), (50, 49403), (54, 49355), (58, 49340),

(70, 49226),

Gene: Llama_90 Start: 50154, Stop: 50447, Start Num: 37

Candidate Starts for Llama_90:

(Start: 37 @50154 has 88 MA's), (39, 50175), (42, 50190), (58, 50316), (70, 50424),

Gene: Llij_80 Start: 47508, Stop: 47834, Start Num: 37

Candidate Starts for Llij_80:

(Start: 37 @47508 has 88 MA's), (41, 47541), (42, 47544), (44, 47571), (45, 47577), (58, 47697), (70, 47811),

Gene: Lucky2013_69 Start: 45952, Stop: 45659, Start Num: 37

Candidate Starts for Lucky2013_69:

(Start: 37 @45952 has 88 MA's), (39, 45931), (41, 45919), (58, 45811), (60, 45763), (61, 45751), (63, 45724), (64, 45721), (70, 45682),

Gene: MadMen_79 Start: 47451, Stop: 47750, Start Num: 37

Candidate Starts for MadMen_79:

(Start: 37 @47451 has 88 MA's), (39, 47472), (42, 47487), (58, 47613), (70, 47727),

Gene: Mandlovu_81 Start: 47530, Stop: 47841, Start Num: 26

Candidate Starts for Mandlovu_81:

(21, 47503), (Start: 26 @47530 has 5 MA's), (39, 47593), (57, 47698), (70, 47818),

Gene: Minerva_77 Start: 51629, Stop: 51336, Start Num: 37

Candidate Starts for Minerva_77:

(Start: 37 @51629 has 88 MA's), (39, 51608), (41, 51596), (58, 51488), (60, 51440), (61, 51428), (63, 51401), (64, 51398), (70, 51359),

Gene: Modragons_88 Start: 50142, Stop: 50435, Start Num: 37

Candidate Starts for Modragons_88:

(Start: 37 @50142 has 88 MA's), (39, 50163), (42, 50178), (58, 50304), (70, 50412),

Gene: MooMoo_80 Start: 48107, Stop: 48433, Start Num: 37

Candidate Starts for MooMoo_80:

(Start: 37 @48107 has 88 MA's), (41, 48140), (42, 48143), (44, 48170), (45, 48176), (58, 48296), (70, 48410),

Gene: Moose_60 Start: 39923, Stop: 39675, Start Num: 37

Candidate Starts for Moose_60:

(15, 40019), (20, 39995), (27, 39965), (Start: 37 @39923 has 88 MA's), (Start: 38 @39911 has 1 MA's), (70, 39698),

Gene: MulchExplorer_85 Start: 48230, Stop: 48505, Start Num: 37

Candidate Starts for MulchExplorer_85:

(Start: 37 @48230 has 88 MA's), (39, 48251), (41, 48263), (44, 48293), (45, 48299), (57, 48413), (58, 48419), (65, 48494),

Gene: NihilNomen_72 Start: 50300, Stop: 50007, Start Num: 37

Candidate Starts for NihilNomen_72:

(Start: 37 @50300 has 88 MA's), (39, 50279), (41, 50267), (58, 50159), (60, 50111), (61, 50099), (63, 50072), (64, 50069), (70, 50030),

Gene: Ochi17_89 Start: 49749, Stop: 50042, Start Num: 37
Candidate Starts for Ochi17_89:
(Start: 37 @49749 has 88 MA's), (39, 49770), (42, 49785), (58, 49911), (70, 50019),

Gene: Odette_70 Start: 49343, Stop: 49050, Start Num: 37
Candidate Starts for Odette_70:
(Start: 37 @49343 has 88 MA's), (39, 49322), (41, 49310), (58, 49202), (60, 49154), (61, 49142), (63, 49115), (64, 49112), (70, 49073),

Gene: OfUltron_91 Start: 50298, Stop: 50591, Start Num: 37
Candidate Starts for OfUltron_91:
(Start: 37 @50298 has 88 MA's), (39, 50319), (42, 50334), (58, 50460), (70, 50568),

Gene: Omega_77 Start: 51219, Stop: 50938, Start Num: 37
Candidate Starts for Omega_77:
(Start: 37 @51219 has 88 MA's), (Start: 40 @51195 has 1 MA's), (41, 51186), (48, 51153), (49, 51141), (50, 51138), (58, 51075), (70, 50961),

Gene: Pacc40_73 Start: 48569, Stop: 48838, Start Num: 37
Candidate Starts for Pacc40_73:
(Start: 37 @48569 has 88 MA's), (39, 48590), (55, 48689), (57, 48695), (70, 48815),

Gene: Phalconet_82 Start: 49094, Stop: 49378, Start Num: 37
Candidate Starts for Phalconet_82:
(Start: 37 @49094 has 88 MA's), (Start: 40 @49118 has 1 MA's), (41, 49127), (54, 49226), (58, 49241), (70, 49355),

Gene: PhesterPhotato_89 Start: 50262, Stop: 50546, Start Num: 37
Candidate Starts for PhesterPhotato_89:
(Start: 37 @50262 has 88 MA's), (Start: 40 @50286 has 1 MA's), (41, 50295), (54, 50394), (58, 50409), (70, 50523),

Gene: Pound_75 Start: 52901, Stop: 52608, Start Num: 37
Candidate Starts for Pound_75:
(Start: 37 @52901 has 88 MA's), (39, 52880), (41, 52868), (58, 52760), (60, 52712), (61, 52700), (63, 52673), (64, 52670), (70, 52631),

Gene: QuickMath_80 Start: 48565, Stop: 48837, Start Num: 37
Candidate Starts for QuickMath_80:
(Start: 37 @48565 has 88 MA's), (39, 48586), (41, 48598), (58, 48706), (70, 48814),

Gene: Rabinovish_14 Start: 5789, Stop: 6034, Start Num: 37
Candidate Starts for Rabinovish_14:
(7, 5627), (Start: 37 @5789 has 88 MA's), (Start: 40 @5813 has 1 MA's), (41, 5822), (58, 5936), (65, 5996),

Gene: Radiance_80 Start: 49352, Stop: 49621, Start Num: 37
Candidate Starts for Radiance_80:
(29, 49322), (31, 49328), (Start: 37 @49352 has 88 MA's), (39, 49373), (55, 49472), (57, 49478), (70, 49598),

Gene: Redno2_68 Start: 47096, Stop: 46803, Start Num: 37
Candidate Starts for Redno2_68:

(Start: 37 @47096 has 88 MA's), (39, 47075), (41, 47063), (58, 46955), (60, 46907), (61, 46895), (63, 46868), (64, 46865), (70, 46826),

Gene: Renaud18_93 Start: 50655, Stop: 50924, Start Num: 37

Candidate Starts for Renaud18_93:

(Start: 37 @50655 has 88 MA's), (39, 50676), (42, 50691), (58, 50787), (70, 50901),

Gene: Royals2015_86 Start: 48664, Stop: 48936, Start Num: 37

Candidate Starts for Royals2015_86:

(27, 48622), (32, 48640), (Start: 37 @48664 has 88 MA's), (39, 48685), (41, 48697), (58, 48805), (70, 48913),

Gene: Sabbb_83 Start: 46768, Stop: 47067, Start Num: 37

Candidate Starts for Sabbb_83:

(Start: 37 @46768 has 88 MA's), (39, 46789), (42, 46804), (58, 46930), (70, 47044),

Gene: Schatzie_66 Start: 49090, Stop: 48797, Start Num: 37

Candidate Starts for Schatzie_66:

(Start: 37 @49090 has 88 MA's), (39, 49069), (41, 49057), (58, 48949), (60, 48901), (61, 48889), (63, 48862), (64, 48859), (70, 48820),

Gene: Seabastian_91 Start: 50299, Stop: 50592, Start Num: 37

Candidate Starts for Seabastian_91:

(Start: 37 @50299 has 88 MA's), (39, 50320), (42, 50335), (58, 50461), (70, 50569),

Gene: Seanderson_61 Start: 42123, Stop: 41887, Start Num: 38

Candidate Starts for Seanderson_61:

(15, 42231), (20, 42207), (27, 42177), (Start: 37 @42135 has 88 MA's), (Start: 38 @42123 has 1 MA's), (70, 41910),

Gene: ShowerHandel_82 Start: 48717, Stop: 48983, Start Num: 36

Candidate Starts for ShowerHandel_82:

(Start: 36 @48717 has 2 MA's), (39, 48744), (42, 48759), (58, 48849), (66, 48927), (70, 48963),

Gene: SkiPole_66 Start: 41398, Stop: 41150, Start Num: 37

Candidate Starts for SkiPole_66:

(1, 41611), (2, 41608), (3, 41605), (4, 41602), (15, 41494), (20, 41470), (27, 41440), (Start: 37 @41398 has 88 MA's), (Start: 38 @41386 has 1 MA's), (70, 41173),

Gene: Soul22_84 Start: 47805, Stop: 48131, Start Num: 37

Candidate Starts for Soul22_84:

(Start: 37 @47805 has 88 MA's), (41, 47838), (42, 47841), (44, 47868), (45, 47874), (58, 47994), (70, 48108),

Gene: Spartacus_90 Start: 52535, Stop: 52846, Start Num: 26

Candidate Starts for Spartacus_90:

(Start: 26 @52535 has 5 MA's), (39, 52598), (57, 52703), (70, 52823),

Gene: Sprinklers_16 Start: 4916, Stop: 5194, Start Num: 37

Candidate Starts for Sprinklers_16:

(28, 4877), (33, 4895), (Start: 37 @4916 has 88 MA's), (39, 4937), (41, 4949), (42, 4952), (46, 4967), (47, 4976), (66, 5138), (70, 5174),

Gene: Strokeseat_81 Start: 47587, Stop: 47898, Start Num: 26

Candidate Starts for Strokeseat_81:

(21, 47560), (Start: 26 @47587 has 5 MA's), (39, 47650), (57, 47755), (70, 47875),

Gene: SuperGrey_82 Start: 51027, Stop: 51305, Start Num: 37

Candidate Starts for SuperGrey_82:

(28, 50988), (33, 51006), (Start: 37 @51027 has 88 MA's), (39, 51048), (41, 51060), (42, 51063), (46, 51078), (47, 51087), (66, 51249), (70, 51285),

Gene: Superphikiman_69 Start: 45818, Stop: 45525, Start Num: 37

Candidate Starts for Superphikiman_69:

(Start: 37 @45818 has 88 MA's), (39, 45797), (41, 45785), (58, 45677), (60, 45629), (61, 45617), (63, 45590), (64, 45587), (70, 45548),

Gene: SwissCheese_62 Start: 40423, Stop: 40175, Start Num: 37

Candidate Starts for SwissCheese_62:

(15, 40519), (20, 40495), (27, 40465), (Start: 37 @40423 has 88 MA's), (Start: 38 @40411 has 1 MA's), (70, 40198),

Gene: Taj_92 Start: 52011, Stop: 52295, Start Num: 37

Candidate Starts for Taj_92:

(14, 51912), (Start: 37 @52011 has 88 MA's), (Start: 40 @52035 has 1 MA's), (41, 52044), (54, 52143), (58, 52158), (70, 52272),

Gene: Taptic_70 Start: 50486, Stop: 50746, Start Num: 37

Candidate Starts for Taptic_70:

(Start: 37 @50486 has 88 MA's), (42, 50522), (43, 50540), (50, 50573), (52, 50615),

Gene: ThetaBob_85 Start: 48938, Stop: 49243, Start Num: 37

Candidate Starts for ThetaBob_85:

(Start: 37 @48938 has 88 MA's), (41, 48971), (42, 48974), (44, 49001), (45, 49007), (58, 49127), (68, 49202),

Gene: ThreeRngTarjay_69 Start: 50376, Stop: 50083, Start Num: 37

Candidate Starts for ThreeRngTarjay_69:

(Start: 37 @50376 has 88 MA's), (39, 50355), (41, 50343), (58, 50235), (60, 50187), (61, 50175), (63, 50148), (64, 50145), (70, 50106),

Gene: Traaww1_40 Start: 34923, Stop: 34648, Start Num: 37

Candidate Starts for Traaww1_40:

(19, 34995), (23, 34971), (25, 34968), (Start: 37 @34923 has 88 MA's), (39, 34902), (41, 34890), (58, 34782), (66, 34704), (70, 34668),

Gene: Tweety_86 Start: 51088, Stop: 51372, Start Num: 37

Candidate Starts for Tweety_86:

(Start: 37 @51088 has 88 MA's), (Start: 40 @51112 has 1 MA's), (41, 51121), (54, 51220), (58, 51235), (70, 51349),

Gene: VRedHorse_80 Start: 46368, Stop: 46637, Start Num: 37

Candidate Starts for VRedHorse_80:

(Start: 37 @46368 has 88 MA's), (39, 46389), (55, 46488), (57, 46494), (70, 46614),

Gene: Wachhund_81 Start: 46941, Stop: 47240, Start Num: 37

Candidate Starts for Wachhund_81:

(Start: 37 @46941 has 88 MA's), (39, 46962), (42, 46977), (58, 47103), (70, 47217),

Gene: Wanda_75 Start: 49838, Stop: 49545, Start Num: 37

Candidate Starts for Wanda_75:

(Start: 37 @49838 has 88 MA's), (39, 49817), (41, 49805), (58, 49697), (60, 49649), (61, 49637), (63, 49610), (64, 49607), (70, 49568),

Gene: Wee_91 Start: 52087, Stop: 52371, Start Num: 37

Candidate Starts for Wee_91:

(Start: 37 @52087 has 88 MA's), (Start: 40 @52111 has 1 MA's), (41, 52120), (54, 52219), (58, 52234), (70, 52348),

Gene: Whatsapiecost_74 Start: 44329, Stop: 44613, Start Num: 37

Candidate Starts for Whatsapiecost_74:

(Start: 37 @44329 has 88 MA's), (Start: 40 @44353 has 1 MA's), (41, 44362), (58, 44476), (70, 44590),

Gene: Whouxphf_80 Start: 49279, Stop: 49512, Start Num: 37

Candidate Starts for Whouxphf_80:

(Start: 37 @49279 has 88 MA's), (41, 49312), (42, 49315), (44, 49342), (45, 49348), (58, 49468),

Gene: Yeet_69 Start: 49362, Stop: 49069, Start Num: 37

Candidate Starts for Yeet_69:

(Start: 37 @49362 has 88 MA's), (39, 49341), (41, 49329), (58, 49221), (60, 49173), (61, 49161), (63, 49134), (64, 49131), (70, 49092),

Gene: Zelink_69 Start: 50689, Stop: 50396, Start Num: 37

Candidate Starts for Zelink_69:

(Start: 37 @50689 has 88 MA's), (39, 50668), (41, 50656), (58, 50548), (60, 50500), (61, 50488), (63, 50461), (64, 50458), (70, 50419),

Gene: Zeuska_63 Start: 42656, Stop: 42396, Start Num: 40

Candidate Starts for Zeuska_63:

(Start: 37 @42680 has 88 MA's), (Start: 40 @42656 has 1 MA's), (41, 42647), (58, 42533), (70, 42419),