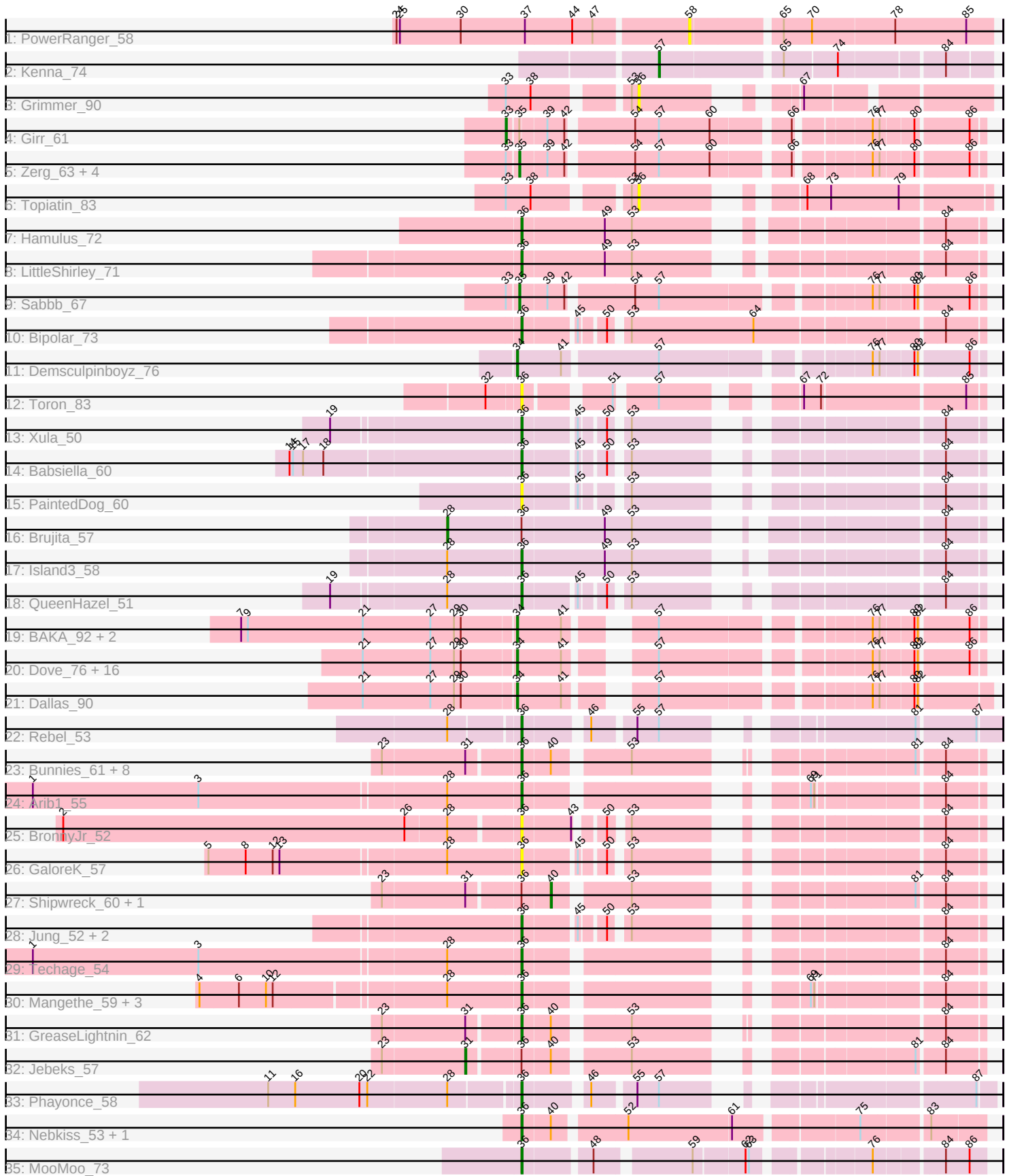


Pham 280390



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 280390 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280390 has 72 members, 11 are drafts.

Phages represented in each track:

- Track 1 : PowerRanger_58
- Track 2 : Kenna_74
- Track 3 : Grimmer_90
- Track 4 : Girr_61
- Track 5 : Zerg_63, RockyHorror_64, Ruby_59, MisterCuddles_61, Doug_65
- Track 6 : Topiatin_83
- Track 7 : Hamulus_72
- Track 8 : LittleShirley_71
- Track 9 : Sabbb_67
- Track 10 : Bipolar_73
- Track 11 : Demsculpinboyz_76
- Track 12 : Toron_83
- Track 13 : Xula_50
- Track 14 : Babsiella_60
- Track 15 : PaintedDog_60
- Track 16 : Brujita_57
- Track 17 : Island3_58
- Track 18 : QueenHazel_51
- Track 19 : BAKA_92, EricMillard_84, Optimus_85
- Track 20 : Dove_76, Beem_91, DmpstrDiver_91, Phoebus_93, HokkenD_80, Halley_92, Kalah2_85, Bombitas_79, Bagrid_90, Odette_89, Yeet_84, ThreeRngTarjay_88, JuicyJay_88, Schatzie_86, NihilNomen_92, Hughesyang_91, Minerva_90
- Track 21 : Dallas_90
- Track 22 : Rebel_53
- Track 23 : Bunnies_61, Bhagsy_62, Phineas_58, Thespis_58, Vidya_55, Camster_58, Ksquared_59, Pygmy_61, CactusJack_56
- Track 24 : Arib1_55
- Track 25 : BronnyJr_52
- Track 26 : GaloreK_57
- Track 27 : Shipwreck_60, PeanutPie_62
- Track 28 : Jung_52, Xeno_56, HC_52
- Track 29 : Techage_54
- Track 30 : Mangethe_59, Zilizebeth_59, Majeke_59, Phegasus_59
- Track 31 : GreaseLightnin_62
- Track 32 : Jebeks_57
- Track 33 : Phayonce_58

- Track 34 : Nebkiss_53, Gaia_49
- Track 35 : MooMoo_73

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

The start number called the most often in the published annotations is 36, it was called in 30 of the 61 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arib1_55, Babsiella_60, Bhagsy_62, Bipolar_73, BronnyJr_52, Bunnies_61, CactusJack_56, Camster_58, Gaia_49, GaloreK_57, GreaseLightnin_62, HC_52, Hamulus_72, Island3_58, Jung_52, Ksquared_59, LittleShirley_71, Majeke_59, Mangethe_59, MooMoo_73, Nebkiss_53, PaintedDog_60, Phayonce_58, Phegasus_59, Phineas_58, Pygmy_61, QueenHazel_51, Rebel_53, Techage_54, Thespiis_58, Toron_83, Vidya_55, Xeno_56, Xula_50, Zilizebeth_59,

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

- Brujita_57, Jebeks_57, PeanutPie_62, Shipwreck_60,

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

- BAKA_92, Bagrid_90, Beem_91, Bombitas_79, Dallas_90, Demsculpinboyz_76, DmpstrDiver_91, Doug_65, Dove_76, EricMillard_84, Girr_61, Grimmer_90, Halley_92, HokkenD_80, Hughesyang_91, JuicyJay_88, Kalah2_85, Kenna_74, Minerva_90, MisterCuddles_61, NihilNomen_92, Odette_89, Optimus_85, Phoebus_93, PowerRanger_58, RockyHorror_64, Ruby_59, Sabbb_67, Schatzie_86, ThreeRngTarjay_88, Topiatin_83, Yeet_84, Zerg_63,

Summary by start number:

Start 28:

- Found in 13 of 72 (18.1%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Brujita_57 (I1),

Start 31:

- Found in 13 of 72 (18.1%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Jebeks_57 (P1),

Start 33:

- Found in 9 of 72 (12.5%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Girr_61 (F1),

Start 34:

- Found in 22 of 72 (30.6%) of genes in pham
- Manual Annotations of this start: 20 of 61

- Called 100.0% of time when present
- Phage (with cluster) where this start called: BAKA_92 (J), Bagrid_90 (J), Beem_91 (J), Bombitas_79 (J), Dallas_90 (J), Demsculpinboyz_76 (F2), DmpstrDiver_91 (J), Dove_76 (J), EricMillard_84 (J), Halley_92 (J), HokkenD_80 (J), Hughesyang_91 (J), JuicyJay_88 (J), Kalah2_85 (J), Minerva_90 (J), NihilNomen_92 (J), Odette_89 (J), Optimus_85 (J), Phoebus_93 (J), Schatzie_86 (J), ThreeRngTarjay_88 (J), Yeet_84 (J),

Start 35:

- Found in 7 of 72 (9.7%) of genes in pham
- Manual Annotations of this start: 6 of 61
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Doug_65 (F1), MisterCuddles_61 (F1), RockyHorror_64 (F1), Ruby_59 (F1), Sabbb_67 (F1), Zerg_63 (F1),

Start 36:

- Found in 39 of 72 (54.2%) of genes in pham
- Manual Annotations of this start: 30 of 61
- Called 89.7% of time when present
- Phage (with cluster) where this start called: Arib1_55 (P1), Babsiella_60 (I1), Bhagsy_62 (P1), Bipolar_73 (F1), BronnyJr_52 (P1), Bunnies_61 (P1), CactusJack_56 (P1), Camster_58 (P1), Gaia_49 (X), GaloreK_57 (P1), GreaseLightnin_62 (P1), HC_52 (I1), Hamulus_72 (F1), Island3_58 (I1), Jung_52 (P1), Ksquared_59 (P1), LittleShirley_71 (F1), Majeke_59 (P1), Mangethe_59 (P1), MooMoo_73 (singleton), Nebkiss_53 (X), PaintedDog_60 (I1), Phayonce_58 (P5), Phegasus_59 (P1), Phineas_58 (P1), Pygmy_61 (P1), QueenHazel_51 (I1), Rebel_53 (N), Techage_54 (P1), Thespis_58 (P1), Toron_83 (F6), Vidya_55 (P1), Xeno_56 (N), Xula_50 (I1), Zilizebeth_59 (P1),

Start 40:

- Found in 15 of 72 (20.8%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 13.3% of time when present
- Phage (with cluster) where this start called: PeanutPie_62 (P1), Shipwreck_60 (P1),

Start 56:

- Found in 2 of 72 (2.8%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grimmer_90 (F1), Topiatin_83 (F1),

Start 57:

- Found in 33 of 72 (45.8%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 3.0% of time when present
- Phage (with cluster) where this start called: Kenna_74 (DN1),

Start 58:

- Found in 1 of 72 (1.4%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PowerRanger_58 (A1),

Summary by clusters:

There are 12 clusters represented in this pham: F1, singleton, P1, F6, P5, I1, J, F2, N, A1, DN1, X,

Info for manual annotations of cluster DN1:

- Start number 57 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster F1:

- Start number 33 was manually annotated 1 time for cluster F1.
- Start number 35 was manually annotated 6 times for cluster F1.
- Start number 36 was manually annotated 3 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 34 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster I1:

- Start number 28 was manually annotated 1 time for cluster I1.
- Start number 36 was manually annotated 5 times for cluster I1.

Info for manual annotations of cluster J:

- Start number 34 was manually annotated 19 times for cluster J.

Info for manual annotations of cluster N:

- Start number 36 was manually annotated 2 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 31 was manually annotated 1 time for cluster P1.
- Start number 36 was manually annotated 16 times for cluster P1.
- Start number 40 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P5:

- Start number 36 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster X:

- Start number 36 was manually annotated 2 times for cluster X.

Gene Information:

Gene: Arib1_55 Start: 36318, Stop: 36641, Start Num: 36

Candidate Starts for Arib1_55:

(1, 35895), (3, 36042), (Start: 28 @36255 has 1 MA's), (Start: 36 @36318 has 30 MA's), (69, 36507), (71, 36510), (84, 36609),

Gene: BAKA_92 Start: 57196, Stop: 57537, Start Num: 34

Candidate Starts for BAKA_92:

(7, 56956), (9, 56962), (21, 57064), (27, 57124), (29, 57145), (30, 57151), (Start: 34 @57196 has 20 MA's), (41, 57235), (Start: 57 @57289 has 1 MA's), (76, 57451), (77, 57457), (80, 57484), (82, 57487), (86, 57526),

Gene: Babsiella_60 Start: 39552, Stop: 39869, Start Num: 36

Candidate Starts for Babsiella_60:

(14, 39354), (15, 39357), (17, 39366), (18, 39384), (Start: 36 @39552 has 30 MA's), (45, 39594), (50, 39612), (53, 39624), (84, 39837),

Gene: Bagrid_90 Start: 56063, Stop: 56404, Start Num: 34

Candidate Starts for Bagrid_90:

(21, 55931), (27, 55991), (29, 56012), (30, 56018), (Start: 34 @56063 has 20 MA's), (41, 56102), (Start: 57 @56156 has 1 MA's), (76, 56318), (77, 56324), (80, 56351), (82, 56354), (86, 56393),

Gene: Beem_91 Start: 56924, Stop: 57265, Start Num: 34

Candidate Starts for Beem_91:

(21, 56792), (27, 56852), (29, 56873), (30, 56879), (Start: 34 @56924 has 20 MA's), (41, 56963), (Start: 57 @57017 has 1 MA's), (76, 57179), (77, 57185), (80, 57212), (82, 57215), (86, 57254),

Gene: Bhagsy_62 Start: 40139, Stop: 40462, Start Num: 36

Candidate Starts for Bhagsy_62:

(23, 40025), (Start: 31 @40097 has 1 MA's), (Start: 36 @40139 has 30 MA's), (Start: 40 @40163 has 1 MA's), (53, 40220), (81, 40409), (84, 40430),

Gene: Bipolar_73 Start: 45463, Stop: 45828, Start Num: 36

Candidate Starts for Bipolar_73:

(Start: 36 @45463 has 30 MA's), (45, 45505), (50, 45523), (53, 45535), (64, 45643), (84, 45796),

Gene: Bombitas_79 Start: 54087, Stop: 54428, Start Num: 34

Candidate Starts for Bombitas_79:

(21, 53955), (27, 54015), (29, 54036), (30, 54042), (Start: 34 @54087 has 20 MA's), (41, 54126), (Start: 57 @54180 has 1 MA's), (76, 54342), (77, 54348), (80, 54375), (82, 54378), (86, 54417),

Gene: BronnyJr_52 Start: 37549, Stop: 37866, Start Num: 36

Candidate Starts for BronnyJr_52:

(2, 37153), (26, 37456), (Start: 28 @37492 has 1 MA's), (Start: 36 @37549 has 30 MA's), (43, 37591), (50, 37609), (53, 37621), (84, 37834),

Gene: Brujita_57 Start: 38345, Stop: 38749, Start Num: 28

Candidate Starts for Brujita_57:

(Start: 28 @38345 has 1 MA's), (Start: 36 @38408 has 30 MA's), (49, 38480), (53, 38504), (84, 38717),

Gene: Bunnies_61 Start: 40221, Stop: 40544, Start Num: 36

Candidate Starts for Bunnies_61:

(23, 40107), (Start: 31 @40179 has 1 MA's), (Start: 36 @40221 has 30 MA's), (Start: 40 @40245 has 1 MA's), (53, 40302), (81, 40491), (84, 40512),

Gene: CactusJack_56 Start: 39089, Stop: 39412, Start Num: 36

Candidate Starts for CactusJack_56:

(23, 38975), (Start: 31 @39047 has 1 MA's), (Start: 36 @39089 has 30 MA's), (Start: 40 @39113 has 1 MA's), (53, 39170), (81, 39359), (84, 39380),

Gene: Camster_58 Start: 38552, Stop: 38878, Start Num: 36

Candidate Starts for Camster_58:

(23, 38438), (Start: 31 @38510 has 1 MA's), (Start: 36 @38552 has 30 MA's), (Start: 40 @38576 has 1 MA's), (53, 38633), (81, 38825), (84, 38846),

Gene: Dallas_90 Start: 55845, Stop: 56192, Start Num: 34

Candidate Starts for Dallas_90:

(21, 55713), (27, 55773), (29, 55794), (30, 55800), (Start: 34 @55845 has 20 MA's), (41, 55884),
(Start: 57 @55938 has 1 MA's), (76, 56100), (77, 56106), (80, 56133), (82, 56136),

Gene: Demsculpinboyz_76 Start: 41371, Stop: 41736, Start Num: 34

Candidate Starts for Demsculpinboyz_76:

(Start: 34 @41371 has 20 MA's), (41, 41410), (Start: 57 @41488 has 1 MA's), (76, 41650), (77, 41656),
(80, 41683), (82, 41686), (86, 41725),

Gene: DmpstrDiver_91 Start: 56259, Stop: 56600, Start Num: 34

Candidate Starts for DmpstrDiver_91:

(21, 56127), (27, 56187), (29, 56208), (30, 56214), (Start: 34 @56259 has 20 MA's), (41, 56298),
(Start: 57 @56352 has 1 MA's), (76, 56514), (77, 56520), (80, 56547), (82, 56550), (86, 56589),

Gene: Doug_65 Start: 41707, Stop: 42063, Start Num: 35

Candidate Starts for Doug_65:

(Start: 33 @41698 has 1 MA's), (Start: 35 @41707 has 6 MA's), (39, 41728), (42, 41743), (54, 41794),
(Start: 57 @41815 has 1 MA's), (60, 41860), (66, 41920), (76, 41977), (77, 41983), (80, 42010), (86,
42052),

Gene: Dove_76 Start: 52353, Stop: 52694, Start Num: 34

Candidate Starts for Dove_76:

(21, 52221), (27, 52281), (29, 52302), (30, 52308), (Start: 34 @52353 has 20 MA's), (41, 52392),
(Start: 57 @52446 has 1 MA's), (76, 52608), (77, 52614), (80, 52641), (82, 52644), (86, 52683),

Gene: EricMillard_84 Start: 55991, Stop: 56332, Start Num: 34

Candidate Starts for EricMillard_84:

(7, 55751), (9, 55757), (21, 55859), (27, 55919), (29, 55940), (30, 55946), (Start: 34 @55991 has 20
MA's), (41, 56030), (Start: 57 @56084 has 1 MA's), (76, 56246), (77, 56252), (80, 56279), (82, 56282),
(86, 56321),

Gene: Gaia_49 Start: 36916, Stop: 36548, Start Num: 36

Candidate Starts for Gaia_49:

(Start: 36 @36916 has 30 MA's), (Start: 40 @36892 has 1 MA's), (52, 36835), (61, 36745), (75, 36646),
(83, 36592),

Gene: GaloreK_57 Start: 37790, Stop: 38107, Start Num: 36

Candidate Starts for GaloreK_57:

(5, 37523), (8, 37556), (12, 37580), (13, 37586), (Start: 28 @37727 has 1 MA's), (Start: 36 @37790
has 30 MA's), (45, 37832), (50, 37850), (53, 37862), (84, 38075),

Gene: Girr_61 Start: 40755, Stop: 41120, Start Num: 33

Candidate Starts for Girr_61:

(Start: 33 @40755 has 1 MA's), (Start: 35 @40764 has 6 MA's), (39, 40785), (42, 40800), (54, 40851),
(Start: 57 @40872 has 1 MA's), (60, 40917), (66, 40977), (76, 41034), (77, 41040), (80, 41067), (86,
41109),

Gene: GreaseLightnin_62 Start: 40455, Stop: 40778, Start Num: 36

Candidate Starts for GreaseLightnin_62:

(23, 40341), (Start: 31 @40413 has 1 MA's), (Start: 36 @40455 has 30 MA's), (Start: 40 @40479 has 1
MA's), (53, 40536), (84, 40746),

Gene: Grimmer_90 Start: 48780, Stop: 49022, Start Num: 56

Candidate Starts for Grimmer_90:

(Start: 33 @48684 has 1 MA's), (38, 48705), (53, 48774), (56, 48780), (67, 48876),

Gene: HC_52 Start: 35682, Stop: 35999, Start Num: 36

Candidate Starts for HC_52:

(Start: 36 @35682 has 30 MA's), (45, 35724), (50, 35742), (53, 35754), (84, 35967),

Gene: Halley_92 Start: 56924, Stop: 57265, Start Num: 34

Candidate Starts for Halley_92:

(21, 56792), (27, 56852), (29, 56873), (30, 56879), (Start: 34 @56924 has 20 MA's), (41, 56963),
(Start: 57 @57017 has 1 MA's), (76, 57179), (77, 57185), (80, 57212), (82, 57215), (86, 57254),

Gene: Hamulus_72 Start: 45640, Stop: 45987, Start Num: 36

Candidate Starts for Hamulus_72:

(Start: 36 @45640 has 30 MA's), (49, 45712), (53, 45736), (84, 45955),

Gene: HokkenD_80 Start: 55193, Stop: 55534, Start Num: 34

Candidate Starts for HokkenD_80:

(21, 55061), (27, 55121), (29, 55142), (30, 55148), (Start: 34 @55193 has 20 MA's), (41, 55232),
(Start: 57 @55286 has 1 MA's), (76, 55448), (77, 55454), (80, 55481), (82, 55484), (86, 55523),

Gene: Hughesyang_91 Start: 56882, Stop: 57223, Start Num: 34

Candidate Starts for Hughesyang_91:

(21, 56750), (27, 56810), (29, 56831), (30, 56837), (Start: 34 @56882 has 20 MA's), (41, 56921),
(Start: 57 @56975 has 1 MA's), (76, 57137), (77, 57143), (80, 57170), (82, 57173), (86, 57212),

Gene: Island3_58 Start: 38408, Stop: 38749, Start Num: 36

Candidate Starts for Island3_58:

(Start: 28 @38345 has 1 MA's), (Start: 36 @38408 has 30 MA's), (49, 38480), (53, 38504), (84, 38717),

Gene: Jebeks_57 Start: 37603, Stop: 37971, Start Num: 31

Candidate Starts for Jebeks_57:

(23, 37531), (Start: 31 @37603 has 1 MA's), (Start: 36 @37645 has 30 MA's), (Start: 40 @37669 has 1 MA's), (53, 37726), (81, 37918), (84, 37939),

Gene: JuicyJay_88 Start: 58058, Stop: 58399, Start Num: 34

Candidate Starts for JuicyJay_88:

(21, 57926), (27, 57986), (29, 58007), (30, 58013), (Start: 34 @58058 has 20 MA's), (41, 58097),
(Start: 57 @58151 has 1 MA's), (76, 58313), (77, 58319), (80, 58346), (82, 58349), (86, 58388),

Gene: Jung_52 Start: 35997, Stop: 36314, Start Num: 36

Candidate Starts for Jung_52:

(Start: 36 @35997 has 30 MA's), (45, 36039), (50, 36057), (53, 36069), (84, 36282),

Gene: Kalah2_85 Start: 56217, Stop: 56558, Start Num: 34

Candidate Starts for Kalah2_85:

(21, 56085), (27, 56145), (29, 56166), (30, 56172), (Start: 34 @56217 has 20 MA's), (41, 56256),
(Start: 57 @56310 has 1 MA's), (76, 56472), (77, 56478), (80, 56505), (82, 56508), (86, 56547),

Gene: Kenna_74 Start: 44226, Stop: 44492, Start Num: 57

Candidate Starts for Kenna_74:

(Start: 57 @44226 has 1 MA's), (65, 44325), (74, 44370), (84, 44454),

Gene: Ksquared_59 Start: 40221, Stop: 40544, Start Num: 36

Candidate Starts for Ksquared_59:

(23, 40107), (Start: 31 @40179 has 1 MA's), (Start: 36 @40221 has 30 MA's), (Start: 40 @40245 has 1 MA's), (53, 40302), (81, 40491), (84, 40512),

Gene: LittleShirley_71 Start: 44686, Stop: 45033, Start Num: 36

Candidate Starts for LittleShirley_71:

(Start: 36 @44686 has 30 MA's), (49, 44758), (53, 44782), (84, 45001),

Gene: Majeke_59 Start: 37835, Stop: 38158, Start Num: 36

Candidate Starts for Majeke_59:

(4, 37568), (6, 37601), (10, 37625), (12, 37631), (Start: 28 @37772 has 1 MA's), (Start: 36 @37835 has 30 MA's), (69, 38024), (71, 38027), (84, 38126),

Gene: Mangethe_59 Start: 37835, Stop: 38158, Start Num: 36

Candidate Starts for Mangethe_59:

(4, 37568), (6, 37601), (10, 37625), (12, 37631), (Start: 28 @37772 has 1 MA's), (Start: 36 @37835 has 30 MA's), (69, 38024), (71, 38027), (84, 38126),

Gene: Minerva_90 Start: 56841, Stop: 57182, Start Num: 34

Candidate Starts for Minerva_90:

(21, 56709), (27, 56769), (29, 56790), (30, 56796), (Start: 34 @56841 has 20 MA's), (41, 56880), (Start: 57 @56934 has 1 MA's), (76, 57096), (77, 57102), (80, 57129), (82, 57132), (86, 57171),

Gene: MisterCuddles_61 Start: 40764, Stop: 41120, Start Num: 35

Candidate Starts for MisterCuddles_61:

(Start: 33 @40755 has 1 MA's), (Start: 35 @40764 has 6 MA's), (39, 40785), (42, 40800), (54, 40851), (Start: 57 @40872 has 1 MA's), (60, 40917), (66, 40977), (76, 41034), (77, 41040), (80, 41067), (86, 41109),

Gene: MooMoo_73 Start: 46091, Stop: 46441, Start Num: 36

Candidate Starts for MooMoo_73:

(Start: 36 @46091 has 30 MA's), (48, 46145), (59, 46220), (62, 46262), (63, 46265), (76, 46352), (84, 46406), (86, 46427),

Gene: Nebkiss_53 Start: 36617, Stop: 36249, Start Num: 36

Candidate Starts for Nebkiss_53:

(Start: 36 @36617 has 30 MA's), (Start: 40 @36593 has 1 MA's), (52, 36536), (61, 36446), (75, 36347), (83, 36293),

Gene: NihilNomen_92 Start: 57011, Stop: 57352, Start Num: 34

Candidate Starts for NihilNomen_92:

(21, 56879), (27, 56939), (29, 56960), (30, 56966), (Start: 34 @57011 has 20 MA's), (41, 57050), (Start: 57 @57104 has 1 MA's), (76, 57266), (77, 57272), (80, 57299), (82, 57302), (86, 57341),

Gene: Odette_89 Start: 56053, Stop: 56394, Start Num: 34

Candidate Starts for Odette_89:

(21, 55921), (27, 55981), (29, 56002), (30, 56008), (Start: 34 @56053 has 20 MA's), (41, 56092), (Start: 57 @56146 has 1 MA's), (76, 56308), (77, 56314), (80, 56341), (82, 56344), (86, 56383),

Gene: Optimus_85 Start: 55545, Stop: 55886, Start Num: 34

Candidate Starts for Optimus_85:

(7, 55305), (9, 55311), (21, 55413), (27, 55473), (29, 55494), (30, 55500), (Start: 34 @55545 has 20 MA's), (41, 55584), (Start: 57 @55638 has 1 MA's), (76, 55800), (77, 55806), (80, 55833), (82, 55836), (86, 55875),

Gene: PaintedDog_60 Start: 40222, Stop: 40539, Start Num: 36

Candidate Starts for PaintedDog_60:

(Start: 36 @40222 has 30 MA's), (45, 40264), (53, 40294), (84, 40507),

Gene: PeanutPie_62 Start: 40166, Stop: 40465, Start Num: 40

Candidate Starts for PeanutPie_62:

(23, 40028), (Start: 31 @40100 has 1 MA's), (Start: 36 @40142 has 30 MA's), (Start: 40 @40166 has 1 MA's), (53, 40223), (81, 40412), (84, 40433),

Gene: Phayonce_58 Start: 40466, Stop: 40795, Start Num: 36

Candidate Starts for Phayonce_58:

(11, 40253), (16, 40277), (20, 40334), (22, 40340), (Start: 28 @40409 has 1 MA's), (Start: 36 @40466 has 30 MA's), (46, 40514), (55, 40547), (Start: 57 @40565 has 1 MA's), (87, 40781),

Gene: Phegasus_59 Start: 37802, Stop: 38125, Start Num: 36

Candidate Starts for Phegasus_59:

(4, 37535), (6, 37568), (10, 37592), (12, 37598), (Start: 28 @37739 has 1 MA's), (Start: 36 @37802 has 30 MA's), (69, 37991), (71, 37994), (84, 38093),

Gene: Phineas_58 Start: 38683, Stop: 39009, Start Num: 36

Candidate Starts for Phineas_58:

(23, 38569), (Start: 31 @38641 has 1 MA's), (Start: 36 @38683 has 30 MA's), (Start: 40 @38707 has 1 MA's), (53, 38764), (81, 38956), (84, 38977),

Gene: Phoebus_93 Start: 58193, Stop: 58534, Start Num: 34

Candidate Starts for Phoebus_93:

(21, 58061), (27, 58121), (29, 58142), (30, 58148), (Start: 34 @58193 has 20 MA's), (41, 58232), (Start: 57 @58286 has 1 MA's), (76, 58448), (77, 58454), (80, 58481), (82, 58484), (86, 58523),

Gene: PowerRanger_58 Start: 41782, Stop: 41528, Start Num: 58

Candidate Starts for PowerRanger_58:

(24, 42031), (25, 42028), (30, 41974), (37, 41917), (44, 41878), (47, 41860), (58, 41782), (65, 41710), (70, 41686), (78, 41614), (85, 41551),

Gene: Pygmy_61 Start: 40147, Stop: 40473, Start Num: 36

Candidate Starts for Pygmy_61:

(23, 40033), (Start: 31 @40105 has 1 MA's), (Start: 36 @40147 has 30 MA's), (Start: 40 @40171 has 1 MA's), (53, 40228), (81, 40420), (84, 40441),

Gene: QueenHazel_51 Start: 36206, Stop: 36523, Start Num: 36

Candidate Starts for QueenHazel_51:

(19, 36047), (Start: 28 @36143 has 1 MA's), (Start: 36 @36206 has 30 MA's), (45, 36248), (50, 36266), (53, 36278), (84, 36491),

Gene: Rebel_53 Start: 34876, Stop: 35211, Start Num: 36

Candidate Starts for Rebel_53:

(Start: 28 @34819 has 1 MA's), (Start: 36 @34876 has 30 MA's), (46, 34924), (55, 34957), (Start: 57 @34975 has 1 MA's), (81, 35143), (87, 35191),

Gene: RockyHorror_64 Start: 40636, Stop: 40992, Start Num: 35

Candidate Starts for RockyHorror_64:

(Start: 33 @40627 has 1 MA's), (Start: 35 @40636 has 6 MA's), (39, 40657), (42, 40672), (54, 40723), (Start: 57 @40744 has 1 MA's), (60, 40789), (66, 40849), (76, 40906), (77, 40912), (80, 40939), (86, 40981),

Gene: Ruby_59 Start: 40765, Stop: 41121, Start Num: 35

Candidate Starts for Ruby_59:

(Start: 33 @40756 has 1 MA's), (Start: 35 @40765 has 6 MA's), (39, 40786), (42, 40801), (54, 40852), (Start: 57 @40873 has 1 MA's), (60, 40918), (66, 40978), (76, 41035), (77, 41041), (80, 41068), (86, 41110),

Gene: Sabbb_67 Start: 41906, Stop: 42262, Start Num: 35

Candidate Starts for Sabbb_67:

(Start: 33 @41897 has 1 MA's), (Start: 35 @41906 has 6 MA's), (39, 41927), (42, 41942), (54, 41993), (Start: 57 @42014 has 1 MA's), (76, 42176), (77, 42182), (80, 42209), (82, 42212), (86, 42251),

Gene: Schatzie_86 Start: 55800, Stop: 56141, Start Num: 34

Candidate Starts for Schatzie_86:

(21, 55668), (27, 55728), (29, 55749), (30, 55755), (Start: 34 @55800 has 20 MA's), (41, 55839), (Start: 57 @55893 has 1 MA's), (76, 56055), (77, 56061), (80, 56088), (82, 56091), (86, 56130),

Gene: Shipwreck_60 Start: 40146, Stop: 40448, Start Num: 40

Candidate Starts for Shipwreck_60:

(23, 40008), (Start: 31 @40080 has 1 MA's), (Start: 36 @40122 has 30 MA's), (Start: 40 @40146 has 1 MA's), (53, 40203), (81, 40395), (84, 40416),

Gene: Techage_54 Start: 36368, Stop: 36694, Start Num: 36

Candidate Starts for Techage_54:

(1, 35945), (3, 36092), (Start: 28 @36305 has 1 MA's), (Start: 36 @36368 has 30 MA's), (84, 36662),

Gene: Thespis_58 Start: 38874, Stop: 39197, Start Num: 36

Candidate Starts for Thespis_58:

(23, 38760), (Start: 31 @38832 has 1 MA's), (Start: 36 @38874 has 30 MA's), (Start: 40 @38898 has 1 MA's), (53, 38955), (81, 39144), (84, 39165),

Gene: ThreeRngTarjay_88 Start: 57085, Stop: 57426, Start Num: 34

Candidate Starts for ThreeRngTarjay_88:

(21, 56953), (27, 57013), (29, 57034), (30, 57040), (Start: 34 @57085 has 20 MA's), (41, 57124), (Start: 57 @57178 has 1 MA's), (76, 57340), (77, 57346), (80, 57373), (82, 57376), (86, 57415),

Gene: Topiatin_83 Start: 49070, Stop: 49327, Start Num: 56

Candidate Starts for Topiatin_83:

(Start: 33 @48974 has 1 MA's), (38, 48995), (53, 49064), (56, 49070), (68, 49172), (73, 49193), (79, 49253),

Gene: Toron_83 Start: 50561, Stop: 50893, Start Num: 36

Candidate Starts for Toron_83:

(32, 50534), (Start: 36 @50561 has 30 MA's), (51, 50624), (Start: 57 @50654 has 1 MA's), (67, 50744), (72, 50759), (85, 50879),

Gene: Vidya_55 Start: 37618, Stop: 37944, Start Num: 36

Candidate Starts for Vidya_55:

(23, 37504), (Start: 31 @37576 has 1 MA's), (Start: 36 @37618 has 30 MA's), (Start: 40 @37642 has 1 MA's), (53, 37699), (81, 37891), (84, 37912),

Gene: Xeno_56 Start: 35652, Stop: 35969, Start Num: 36

Candidate Starts for Xeno_56:

(Start: 36 @35652 has 30 MA's), (45, 35694), (50, 35712), (53, 35724), (84, 35937),

Gene: Xula_50 Start: 35808, Stop: 36125, Start Num: 36

Candidate Starts for Xula_50:

(19, 35649), (Start: 36 @35808 has 30 MA's), (45, 35850), (50, 35868), (53, 35880), (84, 36093),

Gene: Yeet_84 Start: 55302, Stop: 55643, Start Num: 34

Candidate Starts for Yeet_84:

(21, 55170), (27, 55230), (29, 55251), (30, 55257), (Start: 34 @55302 has 20 MA's), (41, 55341), (Start: 57 @55395 has 1 MA's), (76, 55557), (77, 55563), (80, 55590), (82, 55593), (86, 55632),

Gene: Zerg_63 Start: 40748, Stop: 41104, Start Num: 35

Candidate Starts for Zerg_63:

(Start: 33 @40739 has 1 MA's), (Start: 35 @40748 has 6 MA's), (39, 40769), (42, 40784), (54, 40835), (Start: 57 @40856 has 1 MA's), (60, 40901), (66, 40961), (76, 41018), (77, 41024), (80, 41051), (86, 41093),

Gene: Zilizebeth_59 Start: 37826, Stop: 38149, Start Num: 36

Candidate Starts for Zilizebeth_59:

(4, 37559), (6, 37592), (10, 37616), (12, 37622), (Start: 28 @37763 has 1 MA's), (Start: 36 @37826 has 30 MA's), (69, 38015), (71, 38018), (84, 38117),