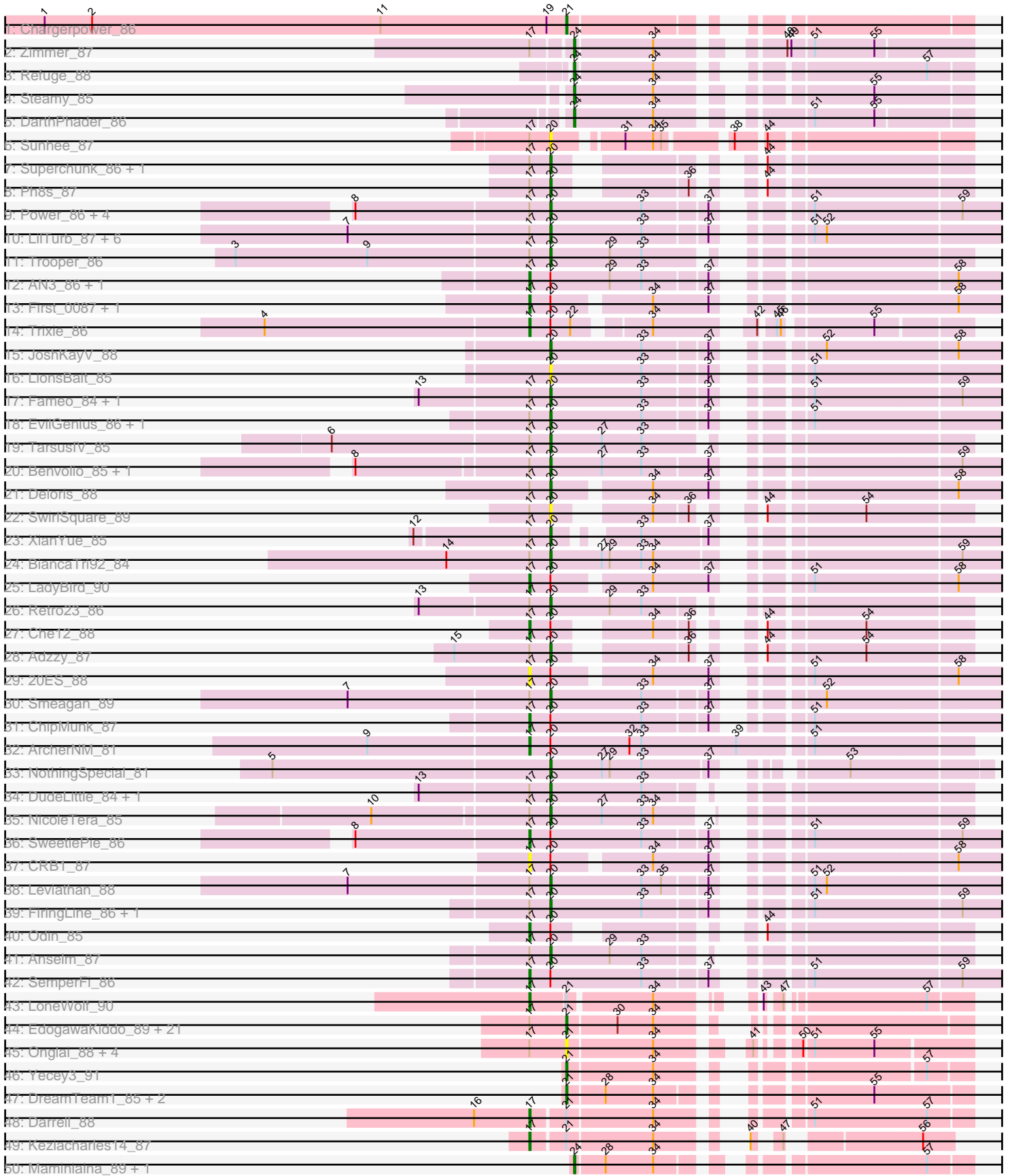


Pham 216022



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 216022 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216022 has 104 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower_86
- Track 2 : Zimmer_87
- Track 3 : Refuge_88
- Track 4 : Steamy_85
- Track 5 : DarthPhader_86
- Track 6 : Sunhee_87
- Track 7 : Superchunk_86, Caraxes_87
- Track 8 : Ph8s_87
- Track 9 : Power_86, QueenB2_83, SnapTap_86, Georgie2_88, Crucio_86
- Track 10 : LilTurb_87, Jerm_88, Whabigail7_85, Turbido_87, Agape74_88, Dignity_88, AbbyPaige_88
- Track 11 : Trooper_86
- Track 12 : AN3_86, VA6_86
- Track 13 : First_0087, BengiVuitton_88
- Track 14 : Trixie_86
- Track 15 : JoshKayV_88
- Track 16 : LionsBait_85
- Track 17 : Fameo_84, Heffalump_83
- Track 18 : EvilGenius_86, KingCyrus_85
- Track 19 : TarsusIV_85
- Track 20 : Benvolio_85, Echild_89
- Track 21 : Deloris_88
- Track 22 : SwirlSquare_89
- Track 23 : XianYue_85
- Track 24 : BiancaTri92_84
- Track 25 : LadyBird_90
- Track 26 : Retro23_86
- Track 27 : Che12_88
- Track 28 : Adzzy_87
- Track 29 : 20ES_88
- Track 30 : Smeagan_89
- Track 31 : ChipMunk_87
- Track 32 : ArcherNM_81
- Track 33 : NothingSpecial_81
- Track 34 : DudeLittle_84, Dalmatian_86
- Track 35 : NicoleTera_85
- Track 36 : SweetiePie_86

- Track 37 : CRB1_87
- Track 38 : Leviathan_88
- Track 39 : FiringLine_86, QueenBeesly_86
- Track 40 : Odin_85
- Track 41 : Anselm_87
- Track 42 : SemperFi_86
- Track 43 : LoneWolf_90
- Track 44 : EdogawaKiddo_89, Scherzo_88, HortumSL17_91, Phonnegut_90, Qobbit_88, Aliter_83, Tubs_90, Phaeder_90, Sachima_86, Conquerage_88, Catalina_92, Fayely_88, Pioneer_90, Spouty_88, Eidsmoe_88, Beemo_90, Myxus_90, ExplosioNervosa_88, Priya_88, Ugenie5_77, Lilleskat_87, PackMan_85
- Track 45 : Onglai_88, Jiawan_88, Horex_89, Hanray_88, RyeScarlet_91
- Track 46 : Yecey3_91
- Track 47 : DreamTeam1_85, SheaKeira_85, Charm_85
- Track 48 : Darrell_88
- Track 49 : Keziacharles14_87
- Track 50 : Maminiaina_89, BogosyJay_89
- Track 51 : Alma_88
- Track 52 : Arissanae_85
- Track 53 : Rahalelujah_89
- Track 54 : EmyBug_87
- Track 55 : Elephantoon_90
- Track 56 : Vanisoa_85
- Track 57 : Toaka_88
- Track 58 : PenguinLover67_60

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

The start number called the most often in the published annotations is 20, it was called in 37 of the 89 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbyPaige_88, Adzzy_87, Agape74_88, Anselm_87, Benvolio_85, BiancaTri92_84, Caraxes_87, Crucio_86, Dalmatian_86, Deloris_88, Dignity_88, DudeLittle_84, Echild_89, EvilGenius_86, Fameo_84, FiringLine_86, Georgie2_88, Heffalump_83, Jerm_88, JoshKayV_88, KingCyrus_85, Leviathan_88, LilTurb_87, LionsBait_85, NicoleTera_85, NothingSpecial_81, Ph8s_87, Power_86, QueenB2_83, QueenBeesly_86, Retro23_86, Smeagan_89, SnapTap_86, Sunhee_87, Superchunk_86, SwirlSquare_89, TarsusIV_85, Trooper_86, Turbido_87, Whabigail7_85, XianYue_85,

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

- 20ES_88, AN3_86, ArcherNM_81, BengiVuitton_88, CRB1_87, Che12_88, ChipMunk_87, First_0087, LadyBird_90, Odin_85, SemperFi_86, SweetiePie_86, Trixie_86, VA6_86,

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

- Aliter_83, Alma_88, Arissanae_85, Beemo_90, BogosyJay_89, Catalina_92, Chargerpower_86, Charm_85, Conquerage_88, Darrell_88, DarthPhader_86, DreamTeam1_85, EdogawaKiddo_89, Eidsmoe_88, Elephantoon_90, EmyBug_87,

ExplosioNervosa_88, Fayely_88, Hanray_88, Holec_89, HortumSL17_91, Jiawan_88, Keziacharles14_87, Lilleskat_87, LoneWolf_90, Maminiaina_89, Myxus_90, Onglai_88, PackMan_85, PenguinLover67_60, Phaeder_90, Phonnegut_90, Pioneer_90, Priya_88, Qobbit_88, Rahalelujah_89, Refuge_88, RyeScarlet_91, Sachima_86, Scherzo_88, SheaKeira_85, Spouty_88, Steamy_85, Toaka_88, Tubs_90, Ugenie5_77, Vanisoa_85, Yecey3_91, Zimmer_87,

Summary by start number:

Start 17:

- Found in 88 of 104 (84.6%) of genes in pham
- Manual Annotations of this start: 16 of 89
- Called 21.6% of time when present
- Phage (with cluster) where this start called: 20ES_88 (A2), AN3_86 (A2), Alma_88 (A9), ArcherNM_81 (A2), BengiVuitton_88 (A2), CRB1_87 (A2), Che12_88 (A2), ChipMunk_87 (A2), Darrell_88 (A9), EmyBug_87 (A9), First_0087 (A2), Keziacharles14_87 (A9), LadyBird_90 (A2), LoneWolf_90 (A9), Odin_85 (A2), SemperFi_86 (A2), SweetiePie_86 (A2), Trixie_86 (A2), VA6_86 (A2),

Start 20:

- Found in 55 of 104 (52.9%) of genes in pham
- Manual Annotations of this start: 37 of 89
- Called 74.5% of time when present
- Phage (with cluster) where this start called: AbbyPaige_88 (A2), Adzzy_87 (A2), Agape74_88 (A2), Anselm_87 (A2), Benvolio_85 (A2), BiancaTri92_84 (A2), Caraxes_87 (A2), Crucio_86 (A2), Dalmatian_86 (A2), Deloris_88 (A2), Dignity_88 (A2), DudeLittle_84 (A2), Echild_89 (A2), EvilGenius_86 (A2), Fameo_84 (A2), FiringLine_86 (A2), Georgie2_88 (A2), Heffalump_83 (A2), Jerm_88 (A2), JoshKayV_88 (A2), KingCyrus_85 (A2), Leviathan_88 (A2), LilTurb_87 (A2), LionsBait_85 (A2), NicoleTera_85 (A2), NothingSpecial_81 (A2), Ph8s_87 (A2), Power_86 (A2), QueenB2_83 (A2), QueenBeesly_86 (A2), Retro23_86 (A2), Smeagan_89 (A2), SnapTap_86 (A2), Sunhee_87 (A14), Superchunk_86 (A2), SwirlSquare_89 (A2), TarsusIV_85 (A2), Trooper_86 (A2), Turbido_87 (A2), Whabigail7_85 (A2), XianYue_85 (A2),

Start 21:

- Found in 42 of 104 (40.4%) of genes in pham
- Manual Annotations of this start: 29 of 89
- Called 88.1% of time when present
- Phage (with cluster) where this start called: Aliter_83 (A9), Arissanae_85 (A9), Beemo_90 (A9), Catalina_92 (A9), Chargerpower_86 (A), Charm_85 (A9), Conquerage_88 (A9), DreamTeam1_85 (A9), EdogawaKiddo_89 (A9), Eidsmoe_88 (A9), Elephantoon_90 (A9), ExplosioNervosa_88 (A9), Fayely_88 (A9), Hanray_88 (A9), Holec_89 (A9), HortumSL17_91 (A9), Jiawan_88 (A9), Lilleskat_87 (A9), Myxus_90 (A9), Onglai_88 (A9), PackMan_85 (A9), Phaeder_90 (A9), Phonnegut_90 (A9), Pioneer_90 (A9), Priya_88 (A9), Qobbit_88 (A9), Rahalelujah_89 (A9), RyeScarlet_91 (A9), Sachima_86 (A9), Scherzo_88 (A9), SheaKeira_85 (A9), Spouty_88 (A9), Toaka_88 (A9), Tubs_90 (A9), Ugenie5_77 (A9), Vanisoa_85 (A9), Yecey3_91 (A9),

Start 23:

- Found in 1 of 104 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 89

- Called 100.0% of time when present
- Phage (with cluster) where this start called: PenguinLover67_60 (B9),

Start 24:

- Found in 6 of 104 (5.8%) of genes in pham
- Manual Annotations of this start: 6 of 89
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BogosyJay_89 (A9), DARTHPhader_86 (A12), Maminiaina_89 (A9), Refuge_88 (A12), Steamy_85 (A12), Zimmer_87 (A12),

Summary by clusters:

There are 6 clusters represented in this pham: A, A14, A12, A2, A9, B9,

Info for manual annotations of cluster A:

- Start number 21 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A12:

- Start number 24 was manually annotated 4 times for cluster A12.

Info for manual annotations of cluster A2:

- Start number 17 was manually annotated 11 times for cluster A2.
- Start number 20 was manually annotated 37 times for cluster A2.

Info for manual annotations of cluster A9:

- Start number 17 was manually annotated 5 times for cluster A9.
- Start number 21 was manually annotated 28 times for cluster A9.
- Start number 24 was manually annotated 2 times for cluster A9.

Info for manual annotations of cluster B9:

- Start number 23 was manually annotated 1 time for cluster B9.

Gene Information:

Gene: 20ES_88 Start: 48926, Stop: 48621, Start Num: 17

Candidate Starts for 20ES_88:

(Start: 17 @48926 has 16 MA's), (Start: 20 @48911 has 37 MA's), (34, 48845), (37, 48803), (51, 48758), (58, 48653),

Gene: AN3_86 Start: 47190, Stop: 46879, Start Num: 17

Candidate Starts for AN3_86:

(Start: 17 @47190 has 16 MA's), (Start: 20 @47175 has 37 MA's), (29, 47130), (33, 47106), (37, 47061), (58, 46911),

Gene: AbbyPaige_88 Start: 49174, Stop: 48878, Start Num: 20

Candidate Starts for AbbyPaige_88:

(7, 49324), (Start: 17 @49189 has 16 MA's), (Start: 20 @49174 has 37 MA's), (33, 49105), (37, 49060), (51, 49015), (52, 49006),

Gene: Adzzy_87 Start: 47625, Stop: 47383, Start Num: 20

Candidate Starts for Adzzy_87:

(15, 47697), (Start: 17 @47640 has 16 MA's), (Start: 20 @47625 has 37 MA's), (36, 47547), (44, 47526), (54, 47460),

Gene: Agape74_88 Start: 49150, Stop: 48854, Start Num: 20

Candidate Starts for Agape74_88:

(7, 49300), (Start: 17 @49165 has 16 MA's), (Start: 20 @49150 has 37 MA's), (33, 49081), (37, 49036), (51, 48991), (52, 48982),

Gene: Aliter_83 Start: 46251, Stop: 46006, Start Num: 21

Candidate Starts for Aliter_83:

(Start: 17 @46278 has 16 MA's), (Start: 21 @46251 has 29 MA's), (30, 46215), (34, 46188),

Gene: Alma_88 Start: 49120, Stop: 48845, Start Num: 17

Candidate Starts for Alma_88:

(Start: 17 @49120 has 16 MA's), (Start: 21 @49093 has 29 MA's), (34, 49030), (47, 48973),

Gene: Anselm_87 Start: 49020, Stop: 48757, Start Num: 20

Candidate Starts for Anselm_87:

(Start: 17 @49035 has 16 MA's), (Start: 20 @49020 has 37 MA's), (29, 48975), (33, 48951),

Gene: ArcherNM_81 Start: 48470, Stop: 48147, Start Num: 17

Candidate Starts for ArcherNM_81:

(9, 48590), (Start: 17 @48470 has 16 MA's), (Start: 20 @48455 has 37 MA's), (32, 48395), (33, 48386), (39, 48314), (51, 48263),

Gene: Arissanae_85 Start: 48962, Stop: 48717, Start Num: 21

Candidate Starts for Arissanae_85:

(Start: 21 @48962 has 29 MA's), (26, 48941), (34, 48899),

Gene: Beemo_90 Start: 49084, Stop: 48839, Start Num: 21

Candidate Starts for Beemo_90:

(Start: 17 @49111 has 16 MA's), (Start: 21 @49084 has 29 MA's), (30, 49048), (34, 49021),

Gene: BengiVuitton_88 Start: 49031, Stop: 48726, Start Num: 17

Candidate Starts for BengiVuitton_88:

(Start: 17 @49031 has 16 MA's), (Start: 20 @49016 has 37 MA's), (34, 48950), (37, 48908), (58, 48758),

Gene: Benvolio_85 Start: 48794, Stop: 48495, Start Num: 20

Candidate Starts for Benvolio_85:

(8, 48935), (Start: 17 @48809 has 16 MA's), (Start: 20 @48794 has 37 MA's), (27, 48755), (33, 48725), (37, 48677), (59, 48524),

Gene: BiancaTri92_84 Start: 48631, Stop: 48332, Start Num: 20

Candidate Starts for BiancaTri92_84:

(14, 48709), (Start: 17 @48646 has 16 MA's), (Start: 20 @48631 has 37 MA's), (27, 48592), (29, 48586), (33, 48562), (34, 48553), (59, 48361),

Gene: BogosyJay_89 Start: 49135, Stop: 48884, Start Num: 24

Candidate Starts for BogosyJay_89:

(Start: 24 @49135 has 6 MA's), (28, 49114), (34, 49078), (57, 48916),

Gene: CRB1_87 Start: 49179, Stop: 48874, Start Num: 17
Candidate Starts for CRB1_87:
(Start: 17 @49179 has 16 MA's), (Start: 20 @49164 has 37 MA's), (34, 49098), (37, 49056), (58, 48906),

Gene: Caraxes_87 Start: 47583, Stop: 47341, Start Num: 20
Candidate Starts for Caraxes_87:
(Start: 17 @47598 has 16 MA's), (Start: 20 @47583 has 37 MA's), (44, 47484),

Gene: Catalina_92 Start: 49198, Stop: 48953, Start Num: 21
Candidate Starts for Catalina_92:
(Start: 17 @49225 has 16 MA's), (Start: 21 @49198 has 29 MA's), (30, 49162), (34, 49135),

Gene: Chargerpower_86 Start: 47145, Stop: 46894, Start Num: 21
Candidate Starts for Chargerpower_86:
(1, 47541), (2, 47505), (11, 47286), (19, 47160), (Start: 21 @47145 has 29 MA's),

Gene: Charm_85 Start: 48488, Stop: 48237, Start Num: 21
Candidate Starts for Charm_85:
(Start: 21 @48488 has 29 MA's), (28, 48461), (34, 48425), (55, 48308),

Gene: Che12_88 Start: 47719, Stop: 47462, Start Num: 17
Candidate Starts for Che12_88:
(Start: 17 @47719 has 16 MA's), (Start: 20 @47704 has 37 MA's), (34, 47650), (36, 47626), (44, 47605), (54, 47539),

Gene: ChipMunk_87 Start: 50092, Stop: 49781, Start Num: 17
Candidate Starts for ChipMunk_87:
(Start: 17 @50092 has 16 MA's), (Start: 20 @50077 has 37 MA's), (33, 50008), (37, 49963), (51, 49918),

Gene: Conquerage_88 Start: 48859, Stop: 48614, Start Num: 21
Candidate Starts for Conquerage_88:
(Start: 17 @48886 has 16 MA's), (Start: 21 @48859 has 29 MA's), (30, 48823), (34, 48796),

Gene: Crucio_86 Start: 49024, Stop: 48728, Start Num: 20
Candidate Starts for Crucio_86:
(8, 49168), (Start: 17 @49039 has 16 MA's), (Start: 20 @49024 has 37 MA's), (33, 48955), (37, 48910), (51, 48865), (59, 48757),

Gene: Dalmatian_86 Start: 48805, Stop: 48542, Start Num: 20
Candidate Starts for Dalmatian_86:
(13, 48901), (Start: 17 @48820 has 16 MA's), (Start: 20 @48805 has 37 MA's), (33, 48736),

Gene: Darrell_88 Start: 48317, Stop: 48039, Start Num: 17
Candidate Starts for Darrell_88:
(16, 48359), (Start: 17 @48317 has 16 MA's), (Start: 21 @48293 has 29 MA's), (34, 48230), (51, 48155), (57, 48071),

Gene: DarthPhader_86 Start: 50000, Stop: 49740, Start Num: 24
Candidate Starts for DarthPhader_86:
(Start: 24 @50000 has 6 MA's), (34, 49940), (51, 49853), (55, 49808),

Gene: Deloris_88 Start: 48709, Stop: 48419, Start Num: 20
Candidate Starts for Deloris_88:
(Start: 17 @48724 has 16 MA's), (Start: 20 @48709 has 37 MA's), (34, 48643), (37, 48601), (58, 48451),

Gene: Dignity_88 Start: 49257, Stop: 48961, Start Num: 20
Candidate Starts for Dignity_88:
(7, 49407), (Start: 17 @49272 has 16 MA's), (Start: 20 @49257 has 37 MA's), (33, 49188), (37, 49143), (51, 49098), (52, 49089),

Gene: DreamTeam1_85 Start: 48336, Stop: 48085, Start Num: 21
Candidate Starts for DreamTeam1_85:
(Start: 21 @48336 has 29 MA's), (28, 48309), (34, 48273), (55, 48156),

Gene: DudeLittle_84 Start: 48523, Stop: 48260, Start Num: 20
Candidate Starts for DudeLittle_84:
(13, 48619), (Start: 17 @48538 has 16 MA's), (Start: 20 @48523 has 37 MA's), (33, 48454),

Gene: Echild_89 Start: 48818, Stop: 48519, Start Num: 20
Candidate Starts for Echild_89:
(8, 48959), (Start: 17 @48833 has 16 MA's), (Start: 20 @48818 has 37 MA's), (27, 48779), (33, 48749), (37, 48701), (59, 48548),

Gene: EdogawaKiddo_89 Start: 49161, Stop: 48916, Start Num: 21
Candidate Starts for EdogawaKiddo_89:
(Start: 17 @49188 has 16 MA's), (Start: 21 @49161 has 29 MA's), (30, 49125), (34, 49098),

Gene: Eidsmoe_88 Start: 48852, Stop: 48607, Start Num: 21
Candidate Starts for Eidsmoe_88:
(Start: 17 @48879 has 16 MA's), (Start: 21 @48852 has 29 MA's), (30, 48816), (34, 48789),

Gene: Elephantoon_90 Start: 49016, Stop: 48762, Start Num: 21
Candidate Starts for Elephantoon_90:
(Start: 21 @49016 has 29 MA's), (25, 49004), (34, 48953), (51, 48878), (57, 48794),

Gene: EmyBug_87 Start: 48881, Stop: 48609, Start Num: 17
Candidate Starts for EmyBug_87:
(Start: 17 @48881 has 16 MA's), (Start: 21 @48854 has 29 MA's), (30, 48818), (34, 48791),

Gene: EvilGenius_86 Start: 50078, Stop: 49782, Start Num: 20
Candidate Starts for EvilGenius_86:
(Start: 17 @50093 has 16 MA's), (Start: 20 @50078 has 37 MA's), (33, 50009), (37, 49964), (51, 49919),

Gene: ExplosioNervosa_88 Start: 48920, Stop: 48675, Start Num: 21
Candidate Starts for ExplosioNervosa_88:
(Start: 17 @48947 has 16 MA's), (Start: 21 @48920 has 29 MA's), (30, 48884), (34, 48857),

Gene: Fameo_84 Start: 48576, Stop: 48280, Start Num: 20
Candidate Starts for Fameo_84:
(13, 48672), (Start: 17 @48591 has 16 MA's), (Start: 20 @48576 has 37 MA's), (33, 48507), (37, 48462), (51, 48417), (59, 48309),

Gene: Fayely_88 Start: 48828, Stop: 48583, Start Num: 21
Candidate Starts for Fayely_88:
(Start: 17 @48855 has 16 MA's), (Start: 21 @48828 has 29 MA's), (30, 48792), (34, 48765),

Gene: FiringLine_86 Start: 48964, Stop: 48668, Start Num: 20
Candidate Starts for FiringLine_86:
(Start: 17 @48979 has 16 MA's), (Start: 20 @48964 has 37 MA's), (33, 48895), (37, 48850), (51, 48805), (59, 48697),

Gene: First_0087 Start: 48829, Stop: 48521, Start Num: 17
Candidate Starts for First_0087:
(Start: 17 @48829 has 16 MA's), (Start: 20 @48814 has 37 MA's), (34, 48748), (37, 48706), (58, 48553),

Gene: Georgie2_88 Start: 49168, Stop: 48872, Start Num: 20
Candidate Starts for Georgie2_88:
(8, 49312), (Start: 17 @49183 has 16 MA's), (Start: 20 @49168 has 37 MA's), (33, 49099), (37, 49054), (51, 49009), (59, 48901),

Gene: Hanray_88 Start: 49149, Stop: 48895, Start Num: 21
Candidate Starts for Hanray_88:
(Start: 17 @49176 has 16 MA's), (Start: 21 @49149 has 29 MA's), (34, 49086), (41, 49038), (50, 49017), (51, 49011), (55, 48966),

Gene: Heffalump_83 Start: 49044, Stop: 48748, Start Num: 20
Candidate Starts for Heffalump_83:
(13, 49140), (Start: 17 @49059 has 16 MA's), (Start: 20 @49044 has 37 MA's), (33, 48975), (37, 48930), (51, 48885), (59, 48777),

Gene: Horex_89 Start: 49162, Stop: 48908, Start Num: 21
Candidate Starts for Horex_89:
(Start: 17 @49189 has 16 MA's), (Start: 21 @49162 has 29 MA's), (34, 49099), (41, 49051), (50, 49030), (51, 49024), (55, 48979),

Gene: HortumSL17_91 Start: 49196, Stop: 48951, Start Num: 21
Candidate Starts for HortumSL17_91:
(Start: 17 @49223 has 16 MA's), (Start: 21 @49196 has 29 MA's), (30, 49160), (34, 49133),

Gene: Jerm_88 Start: 49225, Stop: 48929, Start Num: 20
Candidate Starts for Jerm_88:
(7, 49375), (Start: 17 @49240 has 16 MA's), (Start: 20 @49225 has 37 MA's), (33, 49156), (37, 49111), (51, 49066), (52, 49057),

Gene: Jiawan_88 Start: 49179, Stop: 48925, Start Num: 21
Candidate Starts for Jiawan_88:
(Start: 17 @49206 has 16 MA's), (Start: 21 @49179 has 29 MA's), (34, 49116), (41, 49068), (50, 49047), (51, 49041), (55, 48996),

Gene: JoshKayV_88 Start: 49393, Stop: 49097, Start Num: 20
Candidate Starts for JoshKayV_88:
(Start: 20 @49393 has 37 MA's), (33, 49324), (37, 49279), (52, 49225), (58, 49129),

Gene: Keziacharles14_87 Start: 49677, Stop: 49432, Start Num: 17

Candidate Starts for Keziacharles14_87:

(Start: 17 @49677 has 16 MA's), (Start: 21 @49653 has 29 MA's), (34, 49590), (40, 49551), (47, 49539), (56, 49455),

Gene: KingCyrus_85 Start: 50091, Stop: 49795, Start Num: 20

Candidate Starts for KingCyrus_85:

(Start: 17 @50106 has 16 MA's), (Start: 20 @50091 has 37 MA's), (33, 50022), (37, 49977), (51, 49932),

Gene: LadyBird_90 Start: 49324, Stop: 49019, Start Num: 17

Candidate Starts for LadyBird_90:

(Start: 17 @49324 has 16 MA's), (Start: 20 @49309 has 37 MA's), (34, 49243), (37, 49201), (51, 49156), (58, 49051),

Gene: Leviathan_88 Start: 49306, Stop: 49010, Start Num: 20

Candidate Starts for Leviathan_88:

(7, 49456), (Start: 17 @49321 has 16 MA's), (Start: 20 @49306 has 37 MA's), (33, 49237), (35, 49222), (37, 49192), (51, 49147), (52, 49138),

Gene: LilTurb_87 Start: 49102, Stop: 48806, Start Num: 20

Candidate Starts for LilTurb_87:

(7, 49252), (Start: 17 @49117 has 16 MA's), (Start: 20 @49102 has 37 MA's), (33, 49033), (37, 48988), (51, 48943), (52, 48934),

Gene: Lilleskat_87 Start: 49150, Stop: 48905, Start Num: 21

Candidate Starts for Lilleskat_87:

(Start: 17 @49177 has 16 MA's), (Start: 21 @49150 has 29 MA's), (30, 49114), (34, 49087),

Gene: LionsBait_85 Start: 49616, Stop: 49320, Start Num: 20

Candidate Starts for LionsBait_85:

(Start: 20 @49616 has 37 MA's), (33, 49547), (37, 49502), (51, 49457),

Gene: LoneWolf_90 Start: 49212, Stop: 48946, Start Num: 17

Candidate Starts for LoneWolf_90:

(Start: 17 @49212 has 16 MA's), (Start: 21 @49188 has 29 MA's), (34, 49128), (43, 49083), (47, 49074), (57, 48978),

Gene: Maminiaina_89 Start: 49117, Stop: 48866, Start Num: 24

Candidate Starts for Maminiaina_89:

(Start: 24 @49117 has 6 MA's), (28, 49096), (34, 49060), (57, 48898),

Gene: Myxus_90 Start: 49196, Stop: 48951, Start Num: 21

Candidate Starts for Myxus_90:

(Start: 17 @49223 has 16 MA's), (Start: 21 @49196 has 29 MA's), (30, 49160), (34, 49133),

Gene: NicoleTera_85 Start: 48705, Stop: 48442, Start Num: 20

Candidate Starts for NicoleTera_85:

(10, 48834), (Start: 17 @48720 has 16 MA's), (Start: 20 @48705 has 37 MA's), (27, 48666), (33, 48636), (34, 48627),

Gene: NothingSpecial_81 Start: 48512, Stop: 48231, Start Num: 20

Candidate Starts for NothingSpecial_81:

(5, 48719), (Start: 20 @48512 has 37 MA's), (27, 48473), (29, 48467), (33, 48443), (37, 48395), (53, 48332),

Gene: Odin_85 Start: 48071, Stop: 47814, Start Num: 17

Candidate Starts for Odin_85:

(Start: 17 @48071 has 16 MA's), (Start: 20 @48056 has 37 MA's), (44, 47957),

Gene: Onglai_88 Start: 47351, Stop: 47097, Start Num: 21

Candidate Starts for Onglai_88:

(Start: 17 @47378 has 16 MA's), (Start: 21 @47351 has 29 MA's), (34, 47288), (41, 47240), (50, 47219), (51, 47213), (55, 47168),

Gene: PackMan_85 Start: 47110, Stop: 46865, Start Num: 21

Candidate Starts for PackMan_85:

(Start: 17 @47137 has 16 MA's), (Start: 21 @47110 has 29 MA's), (30, 47074), (34, 47047),

Gene: PenguinLover67_60 Start: 56278, Stop: 55991, Start Num: 23

Candidate Starts for PenguinLover67_60:

(Start: 23 @56278 has 1 MA's), (52, 56119), (54, 56089), (59, 56017),

Gene: Ph8s_87 Start: 47838, Stop: 47596, Start Num: 20

Candidate Starts for Ph8s_87:

(Start: 17 @47853 has 16 MA's), (Start: 20 @47838 has 37 MA's), (36, 47760), (44, 47739),

Gene: Phaeder_90 Start: 49071, Stop: 48826, Start Num: 21

Candidate Starts for Phaeder_90:

(Start: 17 @49098 has 16 MA's), (Start: 21 @49071 has 29 MA's), (30, 49035), (34, 49008),

Gene: Phonnegut_90 Start: 49083, Stop: 48838, Start Num: 21

Candidate Starts for Phonnegut_90:

(Start: 17 @49110 has 16 MA's), (Start: 21 @49083 has 29 MA's), (30, 49047), (34, 49020),

Gene: Pioneer_90 Start: 49083, Stop: 48838, Start Num: 21

Candidate Starts for Pioneer_90:

(Start: 17 @49110 has 16 MA's), (Start: 21 @49083 has 29 MA's), (30, 49047), (34, 49020),

Gene: Power_86 Start: 49167, Stop: 48871, Start Num: 20

Candidate Starts for Power_86:

(8, 49311), (Start: 17 @49182 has 16 MA's), (Start: 20 @49167 has 37 MA's), (33, 49098), (37, 49053), (51, 49008), (59, 48900),

Gene: Priya_88 Start: 48855, Stop: 48610, Start Num: 21

Candidate Starts for Priya_88:

(Start: 17 @48882 has 16 MA's), (Start: 21 @48855 has 29 MA's), (30, 48819), (34, 48792),

Gene: Qobbit_88 Start: 48817, Stop: 48572, Start Num: 21

Candidate Starts for Qobbit_88:

(Start: 17 @48844 has 16 MA's), (Start: 21 @48817 has 29 MA's), (30, 48781), (34, 48754),

Gene: QueenB2_83 Start: 48257, Stop: 47961, Start Num: 20

Candidate Starts for QueenB2_83:

(8, 48401), (Start: 17 @48272 has 16 MA's), (Start: 20 @48257 has 37 MA's), (33, 48188), (37, 48143), (51, 48098), (59, 47990),

Gene: QueenBeesly_86 Start: 48964, Stop: 48668, Start Num: 20
Candidate Starts for QueenBeesly_86:
(Start: 17 @48979 has 16 MA's), (Start: 20 @48964 has 37 MA's), (33, 48895), (37, 48850), (51, 48805), (59, 48697),

Gene: Rahalelujah_89 Start: 48618, Stop: 48364, Start Num: 21
Candidate Starts for Rahalelujah_89:
(Start: 17 @48642 has 16 MA's), (Start: 21 @48618 has 29 MA's), (26, 48597), (34, 48555), (57, 48396),

Gene: Refuge_88 Start: 50832, Stop: 50584, Start Num: 24
Candidate Starts for Refuge_88:
(Start: 24 @50832 has 6 MA's), (34, 50775), (57, 50616),

Gene: Retro23_86 Start: 48647, Stop: 48384, Start Num: 20
Candidate Starts for Retro23_86:
(13, 48743), (Start: 17 @48662 has 16 MA's), (Start: 20 @48647 has 37 MA's), (29, 48602), (33, 48578),

Gene: RyeScarlet_91 Start: 49069, Stop: 48815, Start Num: 21
Candidate Starts for RyeScarlet_91:
(Start: 17 @49096 has 16 MA's), (Start: 21 @49069 has 29 MA's), (34, 49006), (41, 48958), (50, 48937), (51, 48931), (55, 48886),

Gene: Sachima_86 Start: 49098, Stop: 48853, Start Num: 21
Candidate Starts for Sachima_86:
(Start: 17 @49125 has 16 MA's), (Start: 21 @49098 has 29 MA's), (30, 49062), (34, 49035),

Gene: Scherzo_88 Start: 49115, Stop: 48870, Start Num: 21
Candidate Starts for Scherzo_88:
(Start: 17 @49142 has 16 MA's), (Start: 21 @49115 has 29 MA's), (30, 49079), (34, 49052),

Gene: SemperFi_86 Start: 48867, Stop: 48556, Start Num: 17
Candidate Starts for SemperFi_86:
(Start: 17 @48867 has 16 MA's), (Start: 20 @48852 has 37 MA's), (33, 48783), (37, 48738), (51, 48693), (59, 48585),

Gene: SheaKeira_85 Start: 48361, Stop: 48110, Start Num: 21
Candidate Starts for SheaKeira_85:
(Start: 21 @48361 has 29 MA's), (28, 48334), (34, 48298), (55, 48181),

Gene: Smeagan_89 Start: 49397, Stop: 49101, Start Num: 20
Candidate Starts for Smeagan_89:
(7, 49547), (Start: 17 @49412 has 16 MA's), (Start: 20 @49397 has 37 MA's), (33, 49328), (37, 49283), (52, 49229),

Gene: SnapTap_86 Start: 48823, Stop: 48527, Start Num: 20
Candidate Starts for SnapTap_86:
(8, 48967), (Start: 17 @48838 has 16 MA's), (Start: 20 @48823 has 37 MA's), (33, 48754), (37, 48709), (51, 48664), (59, 48556),

Gene: Spouty_88 Start: 48854, Stop: 48609, Start Num: 21

Candidate Starts for Spouty_88:

(Start: 17 @48881 has 16 MA's), (Start: 21 @48854 has 29 MA's), (30, 48818), (34, 48791),

Gene: Steamy_85 Start: 49811, Stop: 49554, Start Num: 24

Candidate Starts for Steamy_85:

(Start: 24 @49811 has 6 MA's), (34, 49751), (55, 49625),

Gene: Sunhee_87 Start: 46599, Stop: 46327, Start Num: 20

Candidate Starts for Sunhee_87:

(Start: 17 @46614 has 16 MA's), (Start: 20 @46599 has 37 MA's), (31, 46557), (34, 46536), (35, 46530), (38, 46488), (44, 46470),

Gene: Superchunk_86 Start: 47583, Stop: 47341, Start Num: 20

Candidate Starts for Superchunk_86:

(Start: 17 @47598 has 16 MA's), (Start: 20 @47583 has 37 MA's), (44, 47484),

Gene: SweetiePie_86 Start: 48971, Stop: 48660, Start Num: 17

Candidate Starts for SweetiePie_86:

(8, 49100), (Start: 17 @48971 has 16 MA's), (Start: 20 @48956 has 37 MA's), (33, 48887), (37, 48842), (51, 48797), (59, 48689),

Gene: SwirlSquare_89 Start: 47313, Stop: 47071, Start Num: 20

Candidate Starts for SwirlSquare_89:

(Start: 17 @47328 has 16 MA's), (Start: 20 @47313 has 37 MA's), (34, 47259), (36, 47235), (44, 47214), (54, 47148),

Gene: TarsusIV_85 Start: 48814, Stop: 48545, Start Num: 20

Candidate Starts for TarsusIV_85:

(6, 48976), (Start: 17 @48829 has 16 MA's), (Start: 20 @48814 has 37 MA's), (27, 48775), (33, 48745),

Gene: Toaka_88 Start: 48957, Stop: 48709, Start Num: 21

Candidate Starts for Toaka_88:

(16, 49023), (Start: 17 @48981 has 16 MA's), (18, 48969), (Start: 21 @48957 has 29 MA's), (30, 48921), (34, 48894), (43, 48846), (47, 48837), (55, 48780),

Gene: Trixie_86 Start: 49391, Stop: 49113, Start Num: 17

Candidate Starts for Trixie_86:

(4, 49589), (Start: 17 @49391 has 16 MA's), (Start: 20 @49376 has 37 MA's), (22, 49361), (34, 49313), (42, 49253), (45, 49244), (46, 49241), (55, 49181),

Gene: Trooper_86 Start: 48532, Stop: 48263, Start Num: 20

Candidate Starts for Trooper_86:

(3, 48766), (9, 48667), (Start: 17 @48547 has 16 MA's), (Start: 20 @48532 has 37 MA's), (29, 48487), (33, 48463),

Gene: Tubs_90 Start: 49071, Stop: 48826, Start Num: 21

Candidate Starts for Tubs_90:

(Start: 17 @49098 has 16 MA's), (Start: 21 @49071 has 29 MA's), (30, 49035), (34, 49008),

Gene: Turbido_87 Start: 49118, Stop: 48822, Start Num: 20

Candidate Starts for Turbido_87:

(7, 49268), (Start: 17 @49133 has 16 MA's), (Start: 20 @49118 has 37 MA's), (33, 49049), (37, 49004), (51, 48959), (52, 48950),

Gene: Ugenie5_77 Start: 46559, Stop: 46314, Start Num: 21

Candidate Starts for Ugenie5_77:

(Start: 17 @46586 has 16 MA's), (Start: 21 @46559 has 29 MA's), (30, 46523), (34, 46496),

Gene: VA6_86 Start: 48761, Stop: 48450, Start Num: 17

Candidate Starts for VA6_86:

(Start: 17 @48761 has 16 MA's), (Start: 20 @48746 has 37 MA's), (29, 48701), (33, 48677), (37, 48632), (58, 48482),

Gene: Vanisoa_85 Start: 49296, Stop: 49042, Start Num: 21

Candidate Starts for Vanisoa_85:

(16, 49362), (Start: 17 @49320 has 16 MA's), (18, 49308), (Start: 21 @49296 has 29 MA's), (26, 49275), (34, 49233), (44, 49185), (51, 49158), (55, 49113),

Gene: Whabigail7_85 Start: 49116, Stop: 48820, Start Num: 20

Candidate Starts for Whabigail7_85:

(7, 49266), (Start: 17 @49131 has 16 MA's), (Start: 20 @49116 has 37 MA's), (33, 49047), (37, 49002), (51, 48957), (52, 48948),

Gene: XianYue_85 Start: 48882, Stop: 48607, Start Num: 20

Candidate Starts for XianYue_85:

(12, 48981), (Start: 17 @48897 has 16 MA's), (Start: 20 @48882 has 37 MA's), (33, 48837), (37, 48789),

Gene: Yecey3_91 Start: 48834, Stop: 48583, Start Num: 21

Candidate Starts for Yecey3_91:

(Start: 21 @48834 has 29 MA's), (34, 48771), (57, 48615),

Gene: Zimmer_87 Start: 50279, Stop: 50019, Start Num: 24

Candidate Starts for Zimmer_87:

(Start: 17 @50306 has 16 MA's), (Start: 24 @50279 has 6 MA's), (34, 50222), (48, 50153), (49, 50150), (51, 50135), (55, 50090),