

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 303260 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303260 has 98 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Wamburgxpress_70
- Track 2 : Acquire49_69, JoeDirt_69, Silverleaf_69, Rose5_69, Tyson_70, AvadaKedavra_69, Poochiewood_68, Halena_67, MAckerman_67, Wyatt2_70
- Track 3 : Appletree2_68, Enceladus_66, UPIE_68, DirkDirk_66, LeBron_68, Zaria_70
- Track 4 : Calm_71
- Track 5 : OhShagHennessy_67
- Track 6 : CicholasNage_67
- Track 7 : Miley16_71, Underpass_62, DrSeegs_71, Winky_71, Lewan_72, BobsGarage_71, Claus_72, Gardann_72, OverPar_73, Zakai_72, Crossroads_71, Sarshaun_72, Itos_70, Breezona_71, Netyap_72, Wilder_72, Kahlid_71, Vetrix_71, BigCheese_71, Soap141_71, Faith1_71, Loadrie_70
- Track 8 : ZhongYanYuan_70, DanBing_73, DHan_74, Baoshan_71, Rossetti_73
- Track 9 : Lynnae_73, GuuelaD_69, MkaliMitinis3_72, LilDestine_71, Hafay_73
- Track 10 : Finemlucis_72
- Track 11 : Gabriela_69, SoJulia_72
- Track 12 : Bazzle_71, Archie_70
- Track 13 : Nicholasp3_71, Wigglewiggles_71
- Track 14 : Tourach_71
- Track 15 : Rumpelstiltskin_70
- Track 16 : Finnry_70, Jubie_69, Moostard_68, Clautastrophe_69, Lumos_71, Kingsolomon_68, Bellis_70, Red305_71, Jobypre_70, TriFive_71, MsGreen_70, Samty_70, Nicholas_68, Snenia_69
- Track 17 : Whirlwind_71, DuncansLeg_70, BourbonZero_71, KirDoubleO7_68, Ellson_69, Lolly9_70, MiniMac_74, LiyuLake_69, MiniLon_74
- Track 18 : Krypton555_71
- Track 19 : FarmResident_72, Quby_70, Chaser_68, DyoEdafos_74, PYPDinur_68, Douzhi_70
- Track 20 : BrainDrainer_70, Sheng711_70
- Track 21 : Douge_70
- Track 22 : ChutneyChips_70
- Track 23 : Bromden_71
- Track 24 : Aegeus_76, Baudelaire_76

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

The start number called the most often in the published annotations is 13, it was called in 50 of the 76 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Baoshan_71, Bellis_70, BigCheese_71, BobsGarage_71, BourbonZero_71, BrainDrainer_70, Breezona_71, Bromden_71, Chaser_68, ChutneyChips_70, Claus_72, Clautastrophe_69, Crossroads_71, DHan_74, DanBing_73, Douge_70, Douzhi_70, DrSeegs_71, DuncansLeg_70, DyoEdafos_74, Ellson_69, Faith1_71, FarmResident_72, Finnry_70, Gabriela_69, Gardann_72, GuuelaD_69, Hafay_73, Itos_70, Jobypre_70, Jubie_69, Kahlid_71, Kingsolomon_68, KirDoubleO7_68, Krypton555_71, Lewan_72, LilDestine_71, LiyuLake_69, Loadrie_70, Lolly9_70, Lumos_71, Lynnae_73, Miley16_71, MiniLon_74, MiniMac_74, MkaliMitinis3_72, Moostard_68, MsGreen_70, Netyap_72, Nicholas_68, OverPar_73, PYPDinur_68, Quby_70, Red305_71, Rossetti_73, Rumpelstiltskin_70, Samty_70, Sarshaun_72, Sheng711_70, Snenia_69, SoJulia_72, Soap141_71, Tourach_71, TriFive_71, Underpass_62, Vetrix_71, Whirlwind_71, Wilder_72, Winky_71, Zakai_72, ZhongYanYuan_70,

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

- Finemlucis_72, Nicholasp3_71, Wigglewiggles_71,

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

- Acquire49_69, Aegeus_76, Appletree2_68, Archie_70, AvadaKedavra_69, Baudelaire_76, Bazzle_71, Calm_71, CicholasNage_67, DirkDirk_66, Enceladus_66, Halena_67, JoeDirt_69, LeBron_68, MAckerman_67, OhShagHennessy_67, Poochiewood_68, Rose5_69, Silverleaf_69, Tyson_70, UPIE_68, Wamburgxpress_70, Wyatt2_70, Zaria_70,

Summary by start number:

Start 12:

- Found in 2 of 98 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 76
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Calm_71 (L1),

Start 13:

- Found in 74 of 98 (75.5%) of genes in pham
- Manual Annotations of this start: 50 of 76
- Called 95.9% of time when present
- Phage (with cluster) where this start called: Baoshan_71 (L2), Bellis_70 (L3), BigCheese_71 (L2), BobsGarage_71 (L2), BourbonZero_71 (L3), BrainDrainer_70 (L4), Breezona_71 (L2), Bromden_71 (L4), Chaser_68 (L4), ChutneyChips_70 (L4), Claus_72 (L2), Clautastrophe_69 (L3), Crossroads_71 (L2), DHan_74 (L2), DanBing_73 (L2), Douge_70 (L4), Douzhi_70 (L4), DrSeegs_71 (L2), DuncansLeg_70 (L3), DyoEdafos_74 (L4), Ellson_69 (L3), Faith1_71 (L2), FarmResident_72 (L4), Finnry_70 (L3), Gabriela_69 (L2), Gardann_72 (L2), GuuelaD_69 (L2), Hafay_73 (L2), Itos_70 (L2), Jobypre_70 (L3), Jubie_69 (L3), Kahlid_71 (L2), Kingsolomon_68 (L3), KirDoubleO7_68 (L3), Krypton555_71 (L3), Lewan_72 (L2), LilDestine_71 (L2), LiyuLake_69 (L3), Loadrie_70 (L2), Lolly9_70 (L3), Lumos_71 (L3), Lynnae_73 (L2), Miley16_71 (L2), MiniLon_74 (L3), MiniMac_74 (L3), MkaliMitinis3_72 (L2), Moostard_68 (L3), MsGreen_70 (L3), Netyap_72 (L2),

Nicholas_68 (L3), OverPar_73 (L2), PYPDinur_68 (L4), Quby_70 (L4), Red305_71 (L3), Rossetti_73 (L2), Rumpelstiltskin_70 (L2), Samty_70 (L3), Sarshaun_72 (L2), Sheng711_70 (L4), Snenia_69 (L3), SoJulia_72 (L2), Soap141_71 (L2), Tourach_71 (L2), TriFive_71 (L3), Underpass_62 (L2), Vetrix_71 (L2), Whirlwind_71 (L3), Wilder_72 (L2), Winky_71 (L2), Zakai_72 (L2), ZhongYanYuan_70 (L2),

Start 14:

- Found in 2 of 98 (2.0%) of genes in pham
- Manual Annotations of this start: 2 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aegeus_76 (L5), Baudelaire_76 (L5),

Start 17:

- Found in 98 of 98 (100.0%) of genes in pham
- Manual Annotations of this start: 23 of 76
- Called 24.5% of time when present
- Phage (with cluster) where this start called: Acquire49_69 (L1), Appletree2_68 (L1), Archie_70 (L2), AvadaKedavra_69 (L1), Bazzle_71 (L2), CicholasNage_67 (L1), DirkDirk_66 (L1), Enceladus_66 (L1), Finemlucis_72 (L2), Halena_67 (L1), JoeDirt_69 (L1), LeBron_68 (L1), MAckerman_67 (L1), Nicholasp3_71 (L2), OhShagHennessy_67 (L1), Poochiewood_68 (L1), Rose5_69 (L1), Silverleaf_69 (L1), Tyson_70 (L1), UPIE_68 (L1), Wamburgxpress_70 (L1), Wigglewiggle_71 (L2), Wyatt2_70 (L1), Zaria_70 (L1),

Summary by clusters:

There are 5 clusters represented in this pham: L4, L5, L2, L3, L1,

Info for manual annotations of cluster L1:

- Start number 12 was manually annotated 1 time for cluster L1.
- Start number 17 was manually annotated 18 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 13 was manually annotated 26 times for cluster L2.
- Start number 17 was manually annotated 5 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 13 was manually annotated 19 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 13 was manually annotated 5 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 14 was manually annotated 2 times for cluster L5.

Gene Information:

Gene: Acquire49_69 Start: 47331, Stop: 47555, Start Num: 17

Candidate Starts for Acquire49_69:

(1, 47112), (2, 47151), (3, 47163), (4, 47178), (5, 47190), (6, 47193), (7, 47247), (8, 47250), (10, 47283), (16, 47328), (Start: 17 @47331 has 23 MA's), (21, 47400), (26, 47433), (28, 47460),

Gene: Aegeus_76 Start: 49391, Stop: 49645, Start Num: 14

Candidate Starts for Aegeus_76:

(Start: 14 @49391 has 2 MA's), (16, 49406), (Start: 17 @49409 has 23 MA's), (22, 49484), (26, 49511), (27, 49520), (29, 49574), (30, 49586),

Gene: Appletree2_68 Start: 46946, Stop: 47170, Start Num: 17

Candidate Starts for Appletree2_68:

(1, 46727), (2, 46766), (4, 46793), (5, 46805), (6, 46808), (7, 46862), (8, 46865), (10, 46898), (16, 46943), (Start: 17 @46946 has 23 MA's), (21, 47015), (26, 47048), (28, 47075),

Gene: Archie_70 Start: 48823, Stop: 49083, Start Num: 17

Candidate Starts for Archie_70:

(9, 48760), (10, 48766), (Start: 17 @48823 has 23 MA's), (19, 48841), (26, 48925), (27, 48934), (33, 49054),

Gene: AvadaKedavra_69 Start: 47404, Stop: 47628, Start Num: 17

Candidate Starts for AvadaKedavra_69:

(1, 47185), (2, 47224), (3, 47236), (4, 47251), (5, 47263), (6, 47266), (7, 47320), (8, 47323), (10, 47356), (16, 47401), (Start: 17 @47404 has 23 MA's), (21, 47473), (26, 47506), (28, 47533),

Gene: Baoshan_71 Start: 49075, Stop: 49329, Start Num: 13

Candidate Starts for Baoshan_71:

(Start: 13 @49075 has 50 MA's), (Start: 17 @49099 has 23 MA's), (26, 49201), (27, 49210), (28, 49228),

Gene: Baudelaire_76 Start: 49391, Stop: 49645, Start Num: 14

Candidate Starts for Baudelaire_76:

(Start: 14 @49391 has 2 MA's), (16, 49406), (Start: 17 @49409 has 23 MA's), (22, 49484), (26, 49511), (27, 49520), (29, 49574), (30, 49586),

Gene: Bazzle_71 Start: 49203, Stop: 49463, Start Num: 17

Candidate Starts for Bazzle_71:

(9, 49140), (10, 49146), (Start: 17 @49203 has 23 MA's), (19, 49221), (26, 49305), (27, 49314), (33, 49434),

Gene: Bellis_70 Start: 49176, Stop: 49457, Start Num: 13

Candidate Starts for Bellis_70:

(Start: 13 @49176 has 50 MA's), (Start: 17 @49200 has 23 MA's), (26, 49302), (31, 49377),

Gene: BigCheese_71 Start: 48842, Stop: 49096, Start Num: 13

Candidate Starts for BigCheese_71:

(Start: 13 @48842 has 50 MA's), (Start: 17 @48866 has 23 MA's), (25, 48962), (26, 48968), (27, 48977), (28, 48995),

Gene: BobsGarage_71 Start: 48842, Stop: 49096, Start Num: 13

Candidate Starts for BobsGarage_71:

(Start: 13 @48842 has 50 MA's), (Start: 17 @48866 has 23 MA's), (25, 48962), (26, 48968), (27, 48977), (28, 48995),

Gene: BourbonZero_71 Start: 49221, Stop: 49502, Start Num: 13

Candidate Starts for BourbonZero_71:

(Start: 13 @49221 has 50 MA's), (Start: 17 @49245 has 23 MA's), (26, 49347),

Gene: BrainDrainer_70 Start: 48064, Stop: 48321, Start Num: 13
Candidate Starts for BrainDrainer_70:
(Start: 13 @48064 has 50 MA's), (Start: 17 @48088 has 23 MA's), (18, 48103), (26, 48190), (30, 48256),

Gene: Breezona_71 Start: 48842, Stop: 49096, Start Num: 13
Candidate Starts for Breezona_71:
(Start: 13 @48842 has 50 MA's), (Start: 17 @48866 has 23 MA's), (25, 48962), (26, 48968), (27, 48977), (28, 48995),

Gene: Bromden_71 Start: 48810, Stop: 49067, Start Num: 13
Candidate Starts for Bromden_71:
(Start: 13 @48810 has 50 MA's), (Start: 17 @48834 has 23 MA's), (18, 48849), (24, 48918), (26, 48936),

Gene: Calm_71 Start: 47633, Stop: 47881, Start Num: 12
Candidate Starts for Calm_71:
(10, 47606), (Start: 12 @47633 has 1 MA's), (15, 47651), (Start: 17 @47657 has 23 MA's), (21, 47726), (26, 47759), (28, 47786),

Gene: Chaser_68 Start: 47833, Stop: 48087, Start Num: 13
Candidate Starts for Chaser_68:
(Start: 13 @47833 has 50 MA's), (Start: 17 @47857 has 23 MA's), (18, 47872), (20, 47893), (26, 47959),

Gene: ChutneyChips_70 Start: 48095, Stop: 48352, Start Num: 13
Candidate Starts for ChutneyChips_70:
(Start: 13 @48095 has 50 MA's), (Start: 17 @48119 has 23 MA's), (18, 48134), (24, 48203), (26, 48221), (31, 48296), (32, 48308),

Gene: CicholasNage_67 Start: 47161, Stop: 47391, Start Num: 17
Candidate Starts for CicholasNage_67:
(1, 46942), (2, 46981), (3, 46993), (4, 47008), (5, 47020), (6, 47023), (7, 47077), (8, 47080), (10, 47113), (16, 47158), (Start: 17 @47161 has 23 MA's), (26, 47263), (28, 47290),

Gene: Claus_72 Start: 49213, Stop: 49452, Start Num: 13
Candidate Starts for Claus_72:
(Start: 13 @49213 has 50 MA's), (Start: 17 @49237 has 23 MA's), (25, 49333), (26, 49339), (27, 49348), (28, 49366),

Gene: Clautastrophe_69 Start: 49173, Stop: 49454, Start Num: 13
Candidate Starts for Clautastrophe_69:
(Start: 13 @49173 has 50 MA's), (Start: 17 @49197 has 23 MA's), (26, 49299), (31, 49374),

Gene: Crossroads_71 Start: 48917, Stop: 49171, Start Num: 13
Candidate Starts for Crossroads_71:
(Start: 13 @48917 has 50 MA's), (Start: 17 @48941 has 23 MA's), (25, 49037), (26, 49043), (27, 49052), (28, 49070),

Gene: DHan_74 Start: 49113, Stop: 49385, Start Num: 13
Candidate Starts for DHan_74:

(Start: 13 @49113 has 50 MA's), (Start: 17 @49137 has 23 MA's), (26, 49239), (27, 49248), (28, 49266),

Gene: DanBing_73 Start: 49082, Stop: 49321, Start Num: 13

Candidate Starts for DanBing_73:

(Start: 13 @49082 has 50 MA's), (Start: 17 @49106 has 23 MA's), (26, 49208), (27, 49217), (28, 49235),

Gene: DirkDirk_66 Start: 46532, Stop: 46756, Start Num: 17

Candidate Starts for DirkDirk_66:

(1, 46313), (2, 46352), (4, 46379), (5, 46391), (6, 46394), (7, 46448), (8, 46451), (10, 46484), (16, 46529), (Start: 17 @46532 has 23 MA's), (21, 46601), (26, 46634), (28, 46661),

Gene: Douge_70 Start: 47833, Stop: 48090, Start Num: 13

Candidate Starts for Douge_70:

(Start: 13 @47833 has 50 MA's), (Start: 17 @47857 has 23 MA's), (18, 47872), (26, 47959), (32, 48046),

Gene: Douzhi_70 Start: 47883, Stop: 48137, Start Num: 13

Candidate Starts for Douzhi_70:

(Start: 13 @47883 has 50 MA's), (Start: 17 @47907 has 23 MA's), (18, 47922), (20, 47943), (26, 48009),

Gene: DrSeegs_71 Start: 48842, Stop: 49096, Start Num: 13

Candidate Starts for DrSeegs_71:

(Start: 13 @48842 has 50 MA's), (Start: 17 @48866 has 23 MA's), (25, 48962), (26, 48968), (27, 48977), (28, 48995),

Gene: DuncansLeg_70 Start: 49209, Stop: 49490, Start Num: 13

Candidate Starts for DuncansLeg_70:

(Start: 13 @49209 has 50 MA's), (Start: 17 @49233 has 23 MA's), (26, 49335),

Gene: DyoEdafos_74 Start: 48328, Stop: 48582, Start Num: 13

Candidate Starts for DyoEdafos_74:

(Start: 13 @48328 has 50 MA's), (Start: 17 @48352 has 23 MA's), (18, 48367), (20, 48388), (26, 48454),

Gene: Ellson_69 Start: 49524, Stop: 49805, Start Num: 13

Candidate Starts for Ellson_69:

(Start: 13 @49524 has 50 MA's), (Start: 17 @49548 has 23 MA's), (26, 49650),

Gene: Enceladus_66 Start: 47289, Stop: 47513, Start Num: 17

Candidate Starts for Enceladus_66:

(1, 47070), (2, 47109), (4, 47136), (5, 47148), (6, 47151), (7, 47205), (8, 47208), (10, 47241), (16, 47286), (Start: 17 @47289 has 23 MA's), (21, 47358), (26, 47391), (28, 47418),

Gene: Faith1_71 Start: 48842, Stop: 49096, Start Num: 13

Candidate Starts for Faith1_71:

(Start: 13 @48842 has 50 MA's), (Start: 17 @48866 has 23 MA's), (25, 48962), (26, 48968), (27, 48977), (28, 48995),

Gene: FarmResident_72 Start: 47828, Stop: 48082, Start Num: 13

Candidate Starts for FarmResident_72:

(Start: 13 @47828 has 50 MA's), (Start: 17 @47852 has 23 MA's), (18, 47867), (20, 47888), (26, 47954),

Gene: Finemlucis_72 Start: 49587, Stop: 49817, Start Num: 17

Candidate Starts for Finemlucis_72:

(Start: 13 @49563 has 50 MA's), (Start: 17 @49587 has 23 MA's), (26, 49689), (27, 49698), (28, 49716),

Gene: Finnry_70 Start: 49437, Stop: 49718, Start Num: 13

Candidate Starts for Finnry_70:

(Start: 13 @49437 has 50 MA's), (Start: 17 @49461 has 23 MA's), (26, 49563), (31, 49638),

Gene: Gabriela_69 Start: 47689, Stop: 47943, Start Num: 13

Candidate Starts for Gabriela_69:

(Start: 13 @47689 has 50 MA's), (Start: 17 @47713 has 23 MA's), (26, 47815), (27, 47824), (28, 47842),

Gene: Gardann_72 Start: 48875, Stop: 49129, Start Num: 13

Candidate Starts for Gardann_72:

(Start: 13 @48875 has 50 MA's), (Start: 17 @48899 has 23 MA's), (25, 48995), (26, 49001), (27, 49010), (28, 49028),

Gene: GuuelaD_69 Start: 48957, Stop: 49211, Start Num: 13

Candidate Starts for GuuelaD_69:

(Start: 13 @48957 has 50 MA's), (Start: 17 @48981 has 23 MA's), (25, 49077), (26, 49083), (28, 49110),

Gene: Hafay_73 Start: 48946, Stop: 49200, Start Num: 13

Candidate Starts for Hafay_73:

(Start: 13 @48946 has 50 MA's), (Start: 17 @48970 has 23 MA's), (25, 49066), (26, 49072), (28, 49099),

Gene: Halena_67 Start: 46569, Stop: 46793, Start Num: 17

Candidate Starts for Halena_67:

(1, 46350), (2, 46389), (3, 46401), (4, 46416), (5, 46428), (6, 46431), (7, 46485), (8, 46488), (10, 46521), (16, 46566), (Start: 17 @46569 has 23 MA's), (21, 46638), (26, 46671), (28, 46698),

Gene: Itos_70 Start: 47748, Stop: 48002, Start Num: 13

Candidate Starts for Itos_70:

(Start: 13 @47748 has 50 MA's), (Start: 17 @47772 has 23 MA's), (25, 47868), (26, 47874), (27, 47883), (28, 47901),

Gene: Jobypre_70 Start: 49173, Stop: 49454, Start Num: 13

Candidate Starts for Jobypre_70:

(Start: 13 @49173 has 50 MA's), (Start: 17 @49197 has 23 MA's), (26, 49299), (31, 49374),

Gene: JoeDirt_69 Start: 47722, Stop: 47946, Start Num: 17

Candidate Starts for JoeDirt_69:

(1, 47503), (2, 47542), (3, 47554), (4, 47569), (5, 47581), (6, 47584), (7, 47638), (8, 47641), (10, 47674), (16, 47719), (Start: 17 @47722 has 23 MA's), (21, 47791), (26, 47824), (28, 47851),

Gene: Jubie_69 Start: 49308, Stop: 49589, Start Num: 13

Candidate Starts for Jubie_69:

(Start: 13 @49308 has 50 MA's), (Start: 17 @49332 has 23 MA's), (26, 49434), (31, 49509),

Gene: Kahlid_71 Start: 48848, Stop: 49102, Start Num: 13

Candidate Starts for Kahlid_71:

(Start: 13 @48848 has 50 MA's), (Start: 17 @48872 has 23 MA's), (25, 48968), (26, 48974), (27, 48983), (28, 49001),

Gene: Kingsolomon_68 Start: 49180, Stop: 49461, Start Num: 13

Candidate Starts for Kingsolomon_68:

(Start: 13 @49180 has 50 MA's), (Start: 17 @49204 has 23 MA's), (26, 49306), (31, 49381),

Gene: KirDoubleO7_68 Start: 49211, Stop: 49492, Start Num: 13

Candidate Starts for KirDoubleO7_68:

(Start: 13 @49211 has 50 MA's), (Start: 17 @49235 has 23 MA's), (26, 49337),

Gene: Krypton555_71 Start: 49399, Stop: 49668, Start Num: 13

Candidate Starts for Krypton555_71:

(Start: 13 @49399 has 50 MA's), (Start: 17 @49423 has 23 MA's), (23, 49501), (26, 49525), (28, 49552), (31, 49600),

Gene: LeBron_68 Start: 46573, Stop: 46797, Start Num: 17

Candidate Starts for LeBron_68:

(1, 46354), (2, 46393), (4, 46420), (5, 46432), (6, 46435), (7, 46489), (8, 46492), (10, 46525), (16, 46570), (Start: 17 @46573 has 23 MA's), (21, 46642), (26, 46675), (28, 46702),

Gene: Lewan_72 Start: 48899, Stop: 49153, Start Num: 13

Candidate Starts for Lewan_72:

(Start: 13 @48899 has 50 MA's), (Start: 17 @48923 has 23 MA's), (25, 49019), (26, 49025), (27, 49034), (28, 49052),

Gene: LilDestine_71 Start: 48875, Stop: 49129, Start Num: 13

Candidate Starts for LilDestine_71:

(Start: 13 @48875 has 50 MA's), (Start: 17 @48899 has 23 MA's), (25, 48995), (26, 49001), (28, 49028),

Gene: LiyuLake_69 Start: 49227, Stop: 49508, Start Num: 13

Candidate Starts for LiyuLake_69:

(Start: 13 @49227 has 50 MA's), (Start: 17 @49251 has 23 MA's), (26, 49353),

Gene: Loadrie_70 Start: 48927, Stop: 49181, Start Num: 13

Candidate Starts for Loadrie_70:

(Start: 13 @48927 has 50 MA's), (Start: 17 @48951 has 23 MA's), (25, 49047), (26, 49053), (27, 49062), (28, 49080),

Gene: Lolly9_70 Start: 49299, Stop: 49580, Start Num: 13

Candidate Starts for Lolly9_70:

(Start: 13 @49299 has 50 MA's), (Start: 17 @49323 has 23 MA's), (26, 49425),

Gene: Lumos_71 Start: 49170, Stop: 49451, Start Num: 13

Candidate Starts for Lumos_71:

(Start: 13 @49170 has 50 MA's), (Start: 17 @49194 has 23 MA's), (26, 49296), (31, 49371),

Gene: Lynnae_73 Start: 48873, Stop: 49127, Start Num: 13

Candidate Starts for Lynnae_73:

(Start: 13 @48873 has 50 MA's), (Start: 17 @48897 has 23 MA's), (25, 48993), (26, 48999), (28, 49026),

Gene: MAckerman_67 Start: 46562, Stop: 46786, Start Num: 17

Candidate Starts for MAckerman_67:

(1, 46343), (2, 46382), (3, 46394), (4, 46409), (5, 46421), (6, 46424), (7, 46478), (8, 46481), (10, 46514), (16, 46559), (Start: 17 @46562 has 23 MA's), (21, 46631), (26, 46664), (28, 46691),

Gene: Miley16_71 Start: 48842, Stop: 49096, Start Num: 13

Candidate Starts for Miley16_71:

(Start: 13 @48842 has 50 MA's), (Start: 17 @48866 has 23 MA's), (25, 48962), (26, 48968), (27, 48977), (28, 48995),

Gene: MiniLon_74 Start: 49300, Stop: 49581, Start Num: 13

Candidate Starts for MiniLon_74:

(Start: 13 @49300 has 50 MA's), (Start: 17 @49324 has 23 MA's), (26, 49426),

Gene: MiniMac_74 Start: 49298, Stop: 49579, Start Num: 13

Candidate Starts for MiniMac_74:

(Start: 13 @49298 has 50 MA's), (Start: 17 @49322 has 23 MA's), (26, 49424),

Gene: MkaliMitinis3_72 Start: 48911, Stop: 49165, Start Num: 13

Candidate Starts for MkaliMitinis3_72:

(Start: 13 @48911 has 50 MA's), (Start: 17 @48935 has 23 MA's), (25, 49031), (26, 49037), (28, 49064),

Gene: Moostard_68 Start: 49176, Stop: 49457, Start Num: 13

Candidate Starts for Moostard_68:

(Start: 13 @49176 has 50 MA's), (Start: 17 @49200 has 23 MA's), (26, 49302), (31, 49377),

Gene: MsGreen_70 Start: 49173, Stop: 49454, Start Num: 13

Candidate Starts for MsGreen_70:

(Start: 13 @49173 has 50 MA's), (Start: 17 @49197 has 23 MA's), (26, 49299), (31, 49374),

Gene: Netyap_72 Start: 48843, Stop: 49097, Start Num: 13

Candidate Starts for Netyap_72:

(Start: 13 @48843 has 50 MA's), (Start: 17 @48867 has 23 MA's), (25, 48963), (26, 48969), (27, 48978), (28, 48996),

Gene: Nicholas_68 Start: 49180, Stop: 49461, Start Num: 13

Candidate Starts for Nicholas_68:

(Start: 13 @49180 has 50 MA's), (Start: 17 @49204 has 23 MA's), (26, 49306), (31, 49381),

Gene: Nicholasp3_71 Start: 48899, Stop: 49129, Start Num: 17

Candidate Starts for Nicholasp3_71:

(Start: 13 @48875 has 50 MA's), (Start: 17 @48899 has 23 MA's), (25, 48995), (26, 49001), (27, 49010), (28, 49028),

Gene: OhShagHennessy_67 Start: 46438, Stop: 46662, Start Num: 17

Candidate Starts for OhShagHennessy_67:

(1, 46219), (2, 46258), (4, 46285), (5, 46297), (6, 46300), (7, 46354), (8, 46357), (10, 46390), (16, 46435), (Start: 17 @46438 has 23 MA's), (26, 46540), (28, 46567),

Gene: OverPar_73 Start: 48927, Stop: 49181, Start Num: 13

Candidate Starts for OverPar_73:

(Start: 13 @48927 has 50 MA's), (Start: 17 @48951 has 23 MA's), (25, 49047), (26, 49053), (27, 49062), (28, 49080),

Gene: PYPDinur_68 Start: 47913, Stop: 48167, Start Num: 13

Candidate Starts for PYPDinur_68:

(Start: 13 @47913 has 50 MA's), (Start: 17 @47937 has 23 MA's), (18, 47952), (20, 47973), (26, 48039),

Gene: Poochiewood_68 Start: 47730, Stop: 47954, Start Num: 17

Candidate Starts for Poochiewood_68:

(1, 47511), (2, 47550), (3, 47562), (4, 47577), (5, 47589), (6, 47592), (7, 47646), (8, 47649), (10, 47682), (16, 47727), (Start: 17 @47730 has 23 MA's), (21, 47799), (26, 47832), (28, 47859),

Gene: Quby_70 Start: 47793, Stop: 48047, Start Num: 13

Candidate Starts for Quby_70:

(Start: 13 @47793 has 50 MA's), (Start: 17 @47817 has 23 MA's), (18, 47832), (20, 47853), (26, 47919),

Gene: Red305_71 Start: 49173, Stop: 49454, Start Num: 13

Candidate Starts for Red305_71:

(Start: 13 @49173 has 50 MA's), (Start: 17 @49197 has 23 MA's), (26, 49299), (31, 49374),

Gene: Rose5_69 Start: 47742, Stop: 47966, Start Num: 17

Candidate Starts for Rose5_69:

(1, 47523), (2, 47562), (3, 47574), (4, 47589), (5, 47601), (6, 47604), (7, 47658), (8, 47661), (10, 47694), (16, 47739), (Start: 17 @47742 has 23 MA's), (21, 47811), (26, 47844), (28, 47871),

Gene: Rossetti_73 Start: 49421, Stop: 49675, Start Num: 13

Candidate Starts for Rossetti_73:

(Start: 13 @49421 has 50 MA's), (Start: 17 @49445 has 23 MA's), (26, 49547), (27, 49556), (28, 49574),

Gene: Rumpelstiltskin_70 Start: 48668, Stop: 48922, Start Num: 13

Candidate Starts for Rumpelstiltskin_70:

(Start: 13 @48668 has 50 MA's), (Start: 17 @48692 has 23 MA's), (25, 48788), (26, 48794), (28, 48821),

Gene: Samty_70 Start: 49181, Stop: 49462, Start Num: 13

Candidate Starts for Samty_70:

(Start: 13 @49181 has 50 MA's), (Start: 17 @49205 has 23 MA's), (26, 49307), (31, 49382),

Gene: Sarshaun_72 Start: 48935, Stop: 49189, Start Num: 13

Candidate Starts for Sarshaun_72:

(Start: 13 @48935 has 50 MA's), (Start: 17 @48959 has 23 MA's), (25, 49055), (26, 49061), (27, 49070), (28, 49088),

Gene: Sheng711_70 Start: 47918, Stop: 48175, Start Num: 13

Candidate Starts for Sheng711_70:

(Start: 13 @47918 has 50 MA's), (Start: 17 @47942 has 23 MA's), (18, 47957), (26, 48044), (30, 48110),

Gene: Silverleaf_69 Start: 47192, Stop: 47416, Start Num: 17

Candidate Starts for Silverleaf_69:

(1, 46973), (2, 47012), (3, 47024), (4, 47039), (5, 47051), (6, 47054), (7, 47108), (8, 47111), (10, 47144), (16, 47189), (Start: 17 @47192 has 23 MA's), (21, 47261), (26, 47294), (28, 47321),

Gene: Snenia_69 Start: 49174, Stop: 49455, Start Num: 13

Candidate Starts for Snenia_69:

(Start: 13 @49174 has 50 MA's), (Start: 17 @49198 has 23 MA's), (26, 49300), (31, 49375),

Gene: SoJulia_72 Start: 49504, Stop: 49758, Start Num: 13

Candidate Starts for SoJulia_72:

(Start: 13 @49504 has 50 MA's), (Start: 17 @49528 has 23 MA's), (26, 49630), (27, 49639), (28, 49657),

Gene: Soap141_71 Start: 48935, Stop: 49189, Start Num: 13

Candidate Starts for Soap141_71:

(Start: 13 @48935 has 50 MA's), (Start: 17 @48959 has 23 MA's), (25, 49055), (26, 49061), (27, 49070), (28, 49088),

Gene: Tourach_71 Start: 49214, Stop: 49453, Start Num: 13

Candidate Starts for Tourach_71:

(Start: 13 @49214 has 50 MA's), (Start: 17 @49238 has 23 MA's), (26, 49340), (27, 49349),

Gene: TriFive_71 Start: 49173, Stop: 49454, Start Num: 13

Candidate Starts for TriFive_71:

(Start: 13 @49173 has 50 MA's), (Start: 17 @49197 has 23 MA's), (26, 49299), (31, 49374),

Gene: Tyson_70 Start: 47668, Stop: 47892, Start Num: 17

Candidate Starts for Tyson_70:

(1, 47449), (2, 47488), (3, 47500), (4, 47515), (5, 47527), (6, 47530), (7, 47584), (8, 47587), (10, 47620), (16, 47665), (Start: 17 @47668 has 23 MA's), (21, 47737), (26, 47770), (28, 47797),

Gene: UPIE_68 Start: 47268, Stop: 47492, Start Num: 17

Candidate Starts for UPIE_68:

(1, 47049), (2, 47088), (4, 47115), (5, 47127), (6, 47130), (7, 47184), (8, 47187), (10, 47220), (16, 47265), (Start: 17 @47268 has 23 MA's), (21, 47337), (26, 47370), (28, 47397),

Gene: Underpass_62 Start: 43911, Stop: 44165, Start Num: 13

Candidate Starts for Underpass_62:

(Start: 13 @43911 has 50 MA's), (Start: 17 @43935 has 23 MA's), (25, 44031), (26, 44037), (27, 44046), (28, 44064),

Gene: Vetrrix_71 Start: 48882, Stop: 49136, Start Num: 13

Candidate Starts for Vetrrix_71:

(Start: 13 @48882 has 50 MA's), (Start: 17 @48906 has 23 MA's), (25, 49002), (26, 49008), (27, 49017), (28, 49035),

Gene: Wamburgexpress_70 Start: 47833, Stop: 48048, Start Num: 17

Candidate Starts for Wamburgexpress_70:

(10, 47782), (11, 47800), (Start: 12 @47809 has 1 MA's), (15, 47827), (Start: 17 @47833 has 23 MA's), (20, 47869), (26, 47935), (27, 47944), (28, 47962),

Gene: Whirlwind_71 Start: 49276, Stop: 49557, Start Num: 13

Candidate Starts for Whirlwind_71:

(Start: 13 @49276 has 50 MA's), (Start: 17 @49300 has 23 MA's), (26, 49402),

Gene: Wigglewigggle_71 Start: 48923, Stop: 49153, Start Num: 17

Candidate Starts for Wigglewigggle_71:

(Start: 13 @48899 has 50 MA's), (Start: 17 @48923 has 23 MA's), (25, 49019), (26, 49025), (27, 49034), (28, 49052),

Gene: Wilder_72 Start: 48848, Stop: 49102, Start Num: 13

Candidate Starts for Wilder_72:

(Start: 13 @48848 has 50 MA's), (Start: 17 @48872 has 23 MA's), (25, 48968), (26, 48974), (27, 48983), (28, 49001),

Gene: Winky_71 Start: 48842, Stop: 49096, Start Num: 13

Candidate Starts for Winky_71:

(Start: 13 @48842 has 50 MA's), (Start: 17 @48866 has 23 MA's), (25, 48962), (26, 48968), (27, 48977), (28, 48995),

Gene: Wyatt2_70 Start: 47666, Stop: 47890, Start Num: 17

Candidate Starts for Wyatt2_70:

(1, 47447), (2, 47486), (3, 47498), (4, 47513), (5, 47525), (6, 47528), (7, 47582), (8, 47585), (10, 47618), (16, 47663), (Start: 17 @47666 has 23 MA's), (21, 47735), (26, 47768), (28, 47795),

Gene: Zakai_72 Start: 49168, Stop: 49422, Start Num: 13

Candidate Starts for Zakai_72:

(Start: 13 @49168 has 50 MA's), (Start: 17 @49192 has 23 MA's), (25, 49288), (26, 49294), (27, 49303), (28, 49321),

Gene: Zaria_70 Start: 47122, Stop: 47346, Start Num: 17

Candidate Starts for Zaria_70:

(1, 46903), (2, 46942), (4, 46969), (5, 46981), (6, 46984), (7, 47038), (8, 47041), (10, 47074), (16, 47119), (Start: 17 @47122 has 23 MA's), (21, 47191), (26, 47224), (28, 47251),

Gene: ZhongYanYuan_70 Start: 48737, Stop: 48976, Start Num: 13

Candidate Starts for ZhongYanYuan_70:

(Start: 13 @48737 has 50 MA's), (Start: 17 @48761 has 23 MA's), (26, 48863), (27, 48872), (28, 48890),