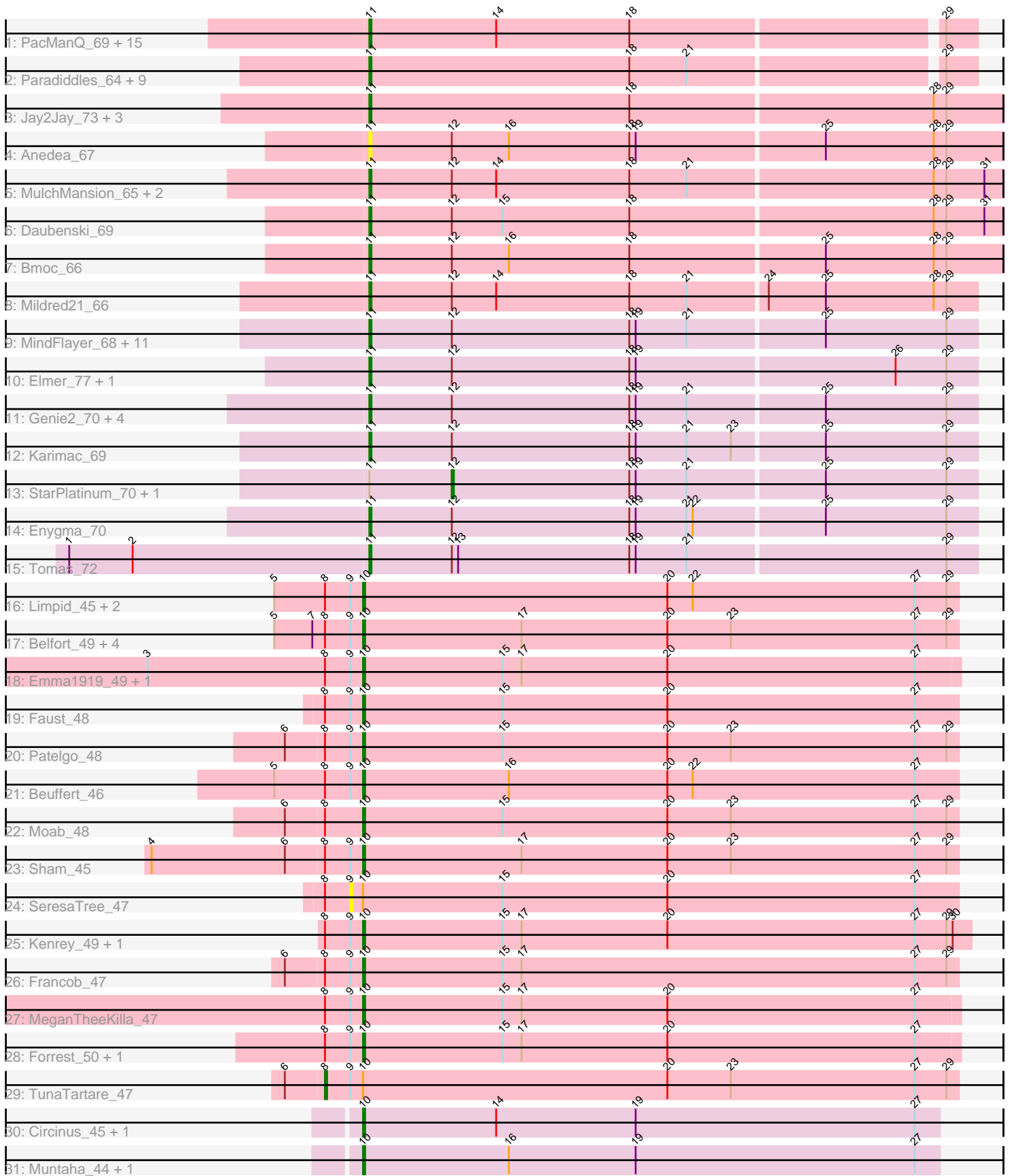


Pham 85429



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 85429 Report

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

Pham number 85429 has 88 members, 11 are drafts.

Phages represented in each track:

- Track 1 : PacManQ_69, Larnav_73, BlueOtter_70, Cursive_66, HangryHippo_70, Tribute_66, Watermoore_68, Leo04_69, Cross_68, Samisti12_68, Lululemon_69, Peebs_67, Pepperwood_68, Sushi23_68, Deutsch_68, EGole_69
- Track 2 : Paradiddles_64, NootNoot_64, Braelyn_67, Persimmon_64, Navo_68, Squillium_67, Bartholomune_66, WhereRU_67, PinkiePie_66, Liandry_67
- Track 3 : Jay2Jay_73, Evy_69, Targaryen_69, Warpy_72
- Track 4 : Anedea_67
- Track 5 : MulchMansion_65, LilMartin_65, Angela_65
- Track 6 : Daubenski_69
- Track 7 : Bmoc_66
- Track 8 : Mildred21_66
- Track 9 : MindFlayer_68, Birchlyn_67, SaltySpittoon_70, Spilled_71, TomSawyer_68, Spelly_70, IchabodCrane_67, JimJam_70, PumpkinSpice_69, Amabiko_70, Mugiwara_71, Quarant19_70
- Track 10 : Elmer_77, Wofford_69
- Track 11 : Genie2_70, Stanimal_70, Sollertia_70, Yaboi_70, BoomerJR_70
- Track 12 : Karimac_69
- Track 13 : StarPlatinum_70, LukeCage_69
- Track 14 : Enygma_70
- Track 15 : Tomas_72
- Track 16 : Limpid_45, Blueeyedbeauty_47, Annadreamy_45
- Track 17 : Belfort_49, Stigma_48, Comrade_48, SparkleGoddess_48, Karp_47
- Track 18 : Emma1919_49, Gilson_49
- Track 19 : Faust_48
- Track 20 : Patelgo_48
- Track 21 : Beuffert_46
- Track 22 : Moab_48
- Track 23 : Sham_45
- Track 24 : SeresaTree_47
- Track 25 : Kenrey_49, Phredrick_47
- Track 26 : Francob_47
- Track 27 : MeganTheeKilla_47
- Track 28 : Forrest_50, Jada_48
- Track 29 : TunaTartare_47
- Track 30 : Circinus_45, BillNye_43
- Track 31 : Muntaha_44, Wakanda_44

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

The start number called the most often in the published annotations is 11, it was called in 49 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amabiko_70, Anedea_67, Angela_65, Bartholomune_66, Birchlyn_67, BlueOtter_70, Bmoc_66, BoomerJR_70, Braelyn_67, Cross_68, Cursive_66, Daubenski_69, EGole_69, Elmer_77, Enygma_70, Evy_69, Genie2_70, HangryHippo_70, IchabodCrane_67, Jay2Jay_73, JimJam_70, Karimac_69, Larnav_73, Leo04_69, Liandry_67, LilMartin_65, Lululemon_69, Mildred21_66, MindFlayer_68, Mugiwara_71, MulchMansion_65, Navo_68, NootNoot_64, PacManQ_69, Paradiddles_64, Peebs_67, Pepperwood_68, Persimmon_64, PinkiePie_66, PumpkinSpice_69, Quarant19_70, SaltySpittoon_70, Samisti12_68, Sollertia_70, Spelly_70, Spilled_71, Squillum_67, Stanimal_70, Sushi23_68, Targaryen_69, Teutsch_68, TomSawyer_68, Tomas_72, Tribute_66, Warpy_72, Watermoore_68, WhereRU_67, Wofford_69, Yaboi_70,

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

- LukeCage_69, StarPlatinum_70,

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

- Annadreamy_45, Belfort_49, Beuffert_46, BillNye_43, Blueeyedbeauty_47, Circinus_45, Comrade_48, Emma1919_49, Faust_48, Forrest_50, Francob_47, Gilson_49, Jada_48, Karp_47, Kenrey_49, Limpid_45, MeganTheeKilla_47, Moab_48, Muntaha_44, Patelgo_48, Phredrick_47, SeresaTree_47, Sham_45, SparkleGoddess_48, Stigma_48, TunaTartare_47, Wakanda_44,

Summary by start number:

Start 8:

- Found in 23 of 88 (26.1%) of genes in pham
- Manual Annotations of this start: 1 of 77
- Called 4.3% of time when present
- Phage (with cluster) where this start called: TunaTartare_47 (BK1),

Start 9:

- Found in 22 of 88 (25.0%) of genes in pham
- No Manual Annotations of this start.
- Called 4.5% of time when present
- Phage (with cluster) where this start called: SeresaTree_47 (BK1),

Start 10:

- Found in 27 of 88 (30.7%) of genes in pham
- Manual Annotations of this start: 25 of 77
- Called 92.6% of time when present
- Phage (with cluster) where this start called: Annadreamy_45 (BK1), Belfort_49 (BK1), Beuffert_46 (BK1), BillNye_43 (BK2), Blueeyedbeauty_47 (BK1), Circinus_45 (BK2), Comrade_48 (BK1), Emma1919_49 (BK1), Faust_48 (BK1), Forrest_50 (BK1), Francob_47 (BK1), Gilson_49 (BK1), Jada_48 (BK1), Karp_47 (BK1), Kenrey_49

(BK1), Limpid_45 (BK1), MeganTheeKilla_47 (BK1), Moab_48 (BK1), Muntaha_44 (BK2), Patelgo_48 (BK1), Phredrick_47 (BK1), Sham_45 (BK1), SparkleGoddess_48 (BK1), Stigma_48 (BK1), Wakanda_44 (BK2),

Start 11:

- Found in 61 of 88 (69.3%) of genes in pham
- Manual Annotations of this start: 49 of 77
- Called 96.7% of time when present
- Phage (with cluster) where this start called: Amabiko_70 (BE2), Anedea_67 (BE1), Angela_65 (BE1), Bartholomune_66 (BE1), Birchlyn_67 (BE2), BlueOtter_70 (BE1), Bmoc_66 (BE1), BoomerJR_70 (BE2), Braelyn_67 (BE1), Cross_68 (BE1), Cursive_66 (BE1), Daubenski_69 (BE1), EGole_69 (BE1), Elmer_77 (BE2), Enygma_70 (BE2), Evy_69 (BE1), Genie2_70 (BE2), HangryHippo_70 (BE1), IchabodCrane_67 (BE2), Jay2Jay_73 (BE1), JimJam_70 (BE2), Karimac_69 (BE2), Larnav_73 (BE1), Leo04_69 (BE1), Liandry_67 (BE1), LilMartin_65 (BE1), Lululemon_69 (BE1), Mildred21_66 (BE1), MindFlayer_68 (BE2), Mugiwara_71 (BE2), MulchMansion_65 (BE1), Navo_68 (BE1), NootNoot_64 (BE1), PacManQ_69 (BE1), Paradiddles_64 (BE1), Peebs_67 (BE1), Pepperwood_68 (BE1), Persimmon_64 (BE1), PinkiePie_66 (BE1), PumpkinSpice_69 (BE2), Quarant19_70 (BE2), SaltySpittoon_70 (BE2), Samisti12_68 (BE1), Sollertia_70 (BE2), Spelly_70 (BE2), Spilled_71 (BE2), Squillum_67 (BE1), Stanimal_70 (BE2), Sushi23_68 (BE1), Targaryen_69 (BE1), Teutsch_68 (BE1), TomSawyer_68 (BE2), Tomas_72 (BE2), Tribute_66 (BE1), Warpy_72 (BE1), Watermoore_68 (BE1), WhereRU_67 (BE1), Wofford_69 (BE2), Yaboi_70 (BE2),

Start 12:

- Found in 31 of 88 (35.2%) of genes in pham
- Manual Annotations of this start: 2 of 77
- Called 6.5% of time when present
- Phage (with cluster) where this start called: LukeCage_69 (BE2), StarPlatinum_70 (BE2),

Summary by clusters:

There are 4 clusters represented in this pham: BE2, BE1, BK1, BK2,

Info for manual annotations of cluster BE1:

- Start number 11 was manually annotated 29 times for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 11 was manually annotated 20 times for cluster BE2.
- Start number 12 was manually annotated 2 times for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 8 was manually annotated 1 time for cluster BK1.
- Start number 10 was manually annotated 21 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 10 was manually annotated 4 times for cluster BK2.

Gene Information:

Gene: Amabiko_70 Start: 51992, Stop: 52276, Start Num: 11

Candidate Starts for Amabiko_70:

(Start: 11 @51992 has 49 MA's), (Start: 12 @52031 has 2 MA's), (18, 52115), (19, 52118), (21, 52142), (25, 52205), (29, 52262),

Gene: Anedea_67 Start: 51566, Stop: 51862, Start Num: 11

Candidate Starts for Anedea_67:

(Start: 11 @51566 has 49 MA's), (Start: 12 @51605 has 2 MA's), (16, 51632), (18, 51689), (19, 51692), (25, 51779), (28, 51830), (29, 51836),

Gene: Angela_65 Start: 51027, Stop: 51323, Start Num: 11

Candidate Starts for Angela_65:

(Start: 11 @51027 has 49 MA's), (Start: 12 @51066 has 2 MA's), (14, 51087), (18, 51150), (21, 51177), (28, 51291), (29, 51297), (31, 51315),

Gene: Annadreamy_45 Start: 40849, Stop: 41130, Start Num: 10

Candidate Starts for Annadreamy_45:

(5, 40807), (Start: 8 @40831 has 1 MA's), (9, 40843), (Start: 10 @40849 has 25 MA's), (20, 40993), (22, 41005), (27, 41110), (29, 41125),

Gene: Bartholomune_66 Start: 51292, Stop: 51570, Start Num: 11

Candidate Starts for Bartholomune_66:

(Start: 11 @51292 has 49 MA's), (18, 51415), (21, 51442), (29, 51556),

Gene: Belfort_49 Start: 43365, Stop: 43646, Start Num: 10

Candidate Starts for Belfort_49:

(5, 43323), (7, 43341), (Start: 8 @43347 has 1 MA's), (9, 43359), (Start: 10 @43365 has 25 MA's), (17, 43440), (20, 43509), (23, 43539), (27, 43626), (29, 43641),

Gene: Beuffert_46 Start: 41990, Stop: 42271, Start Num: 10

Candidate Starts for Beuffert_46:

(5, 41948), (Start: 8 @41972 has 1 MA's), (9, 41984), (Start: 10 @41990 has 25 MA's), (16, 42059), (20, 42134), (22, 42146), (27, 42251),

Gene: BillNye_43 Start: 44230, Stop: 44502, Start Num: 10

Candidate Starts for BillNye_43:

(Start: 10 @44230 has 25 MA's), (14, 44293), (19, 44359), (27, 44491),

Gene: Birchlyn_67 Start: 49849, Stop: 50133, Start Num: 11

Candidate Starts for Birchlyn_67:

(Start: 11 @49849 has 49 MA's), (Start: 12 @49888 has 2 MA's), (18, 49972), (19, 49975), (21, 49999), (25, 50062), (29, 50119),

Gene: BlueOtter_70 Start: 52672, Stop: 52950, Start Num: 11

Candidate Starts for BlueOtter_70:

(Start: 11 @52672 has 49 MA's), (14, 52732), (18, 52795), (29, 52936),

Gene: Blueeyedbeauty_47 Start: 41361, Stop: 41642, Start Num: 10

Candidate Starts for Blueeyedbeauty_47:

(5, 41319), (Start: 8 @41343 has 1 MA's), (9, 41355), (Start: 10 @41361 has 25 MA's), (20, 41505), (22, 41517), (27, 41622), (29, 41637),

Gene: Bmoc_66 Start: 51370, Stop: 51666, Start Num: 11

Candidate Starts for Bmoc_66:

(Start: 11 @51370 has 49 MA's), (Start: 12 @51409 has 2 MA's), (16, 51436), (18, 51493), (25, 51583), (28, 51634), (29, 51640),

Gene: BoomerJR_70 Start: 51846, Stop: 52130, Start Num: 11

Candidate Starts for BoomerJR_70:

(Start: 11 @51846 has 49 MA's), (Start: 12 @51885 has 2 MA's), (18, 51969), (19, 51972), (21, 51996), (25, 52059), (29, 52116),

Gene: Braelyn_67 Start: 52059, Stop: 52337, Start Num: 11

Candidate Starts for Braelyn_67:

(Start: 11 @52059 has 49 MA's), (18, 52182), (21, 52209), (29, 52323),

Gene: Circinus_45 Start: 44369, Stop: 44641, Start Num: 10

Candidate Starts for Circinus_45:

(Start: 10 @44369 has 25 MA's), (14, 44432), (19, 44498), (27, 44630),

Gene: Comrade_48 Start: 42980, Stop: 43261, Start Num: 10

Candidate Starts for Comrade_48:

(5, 42938), (7, 42956), (Start: 8 @42962 has 1 MA's), (9, 42974), (Start: 10 @42980 has 25 MA's), (17, 43055), (20, 43124), (23, 43154), (27, 43241), (29, 43256),

Gene: Cross_68 Start: 52673, Stop: 52951, Start Num: 11

Candidate Starts for Cross_68:

(Start: 11 @52673 has 49 MA's), (14, 52733), (18, 52796), (29, 52937),

Gene: Cursive_66 Start: 52198, Stop: 52476, Start Num: 11

Candidate Starts for Cursive_66:

(Start: 11 @52198 has 49 MA's), (14, 52258), (18, 52321), (29, 52462),

Gene: Daubenski_69 Start: 52439, Stop: 52735, Start Num: 11

Candidate Starts for Daubenski_69:

(Start: 11 @52439 has 49 MA's), (Start: 12 @52478 has 2 MA's), (15, 52502), (18, 52562), (28, 52703), (29, 52709), (31, 52727),

Gene: EGole_69 Start: 53619, Stop: 53897, Start Num: 11

Candidate Starts for EGole_69:

(Start: 11 @53619 has 49 MA's), (14, 53679), (18, 53742), (29, 53883),

Gene: Elmer_77 Start: 53059, Stop: 53343, Start Num: 11

Candidate Starts for Elmer_77:

(Start: 11 @53059 has 49 MA's), (Start: 12 @53098 has 2 MA's), (18, 53182), (19, 53185), (26, 53305), (29, 53329),

Gene: Emma1919_49 Start: 41770, Stop: 42051, Start Num: 10

Candidate Starts for Emma1919_49:

(3, 41668), (Start: 8 @41752 has 1 MA's), (9, 41764), (Start: 10 @41770 has 25 MA's), (15, 41836), (17, 41845), (20, 41914), (27, 42031),

Gene: Enygma_70 Start: 53784, Stop: 54068, Start Num: 11

Candidate Starts for Enygma_70:

(Start: 11 @53784 has 49 MA's), (Start: 12 @53823 has 2 MA's), (18, 53907), (19, 53910), (21, 53934), (22, 53937), (25, 53997), (29, 54054),

Gene: Evy_69 Start: 52662, Stop: 52958, Start Num: 11
Candidate Starts for Evy_69:
(Start: 11 @52662 has 49 MA's), (18, 52785), (28, 52926), (29, 52932),

Gene: Faust_48 Start: 42300, Stop: 42581, Start Num: 10
Candidate Starts for Faust_48:
(Start: 8 @42282 has 1 MA's), (9, 42294), (Start: 10 @42300 has 25 MA's), (15, 42366), (20, 42444),
(27, 42561),

Gene: Forrest_50 Start: 42467, Stop: 42748, Start Num: 10
Candidate Starts for Forrest_50:
(Start: 8 @42449 has 1 MA's), (9, 42461), (Start: 10 @42467 has 25 MA's), (15, 42533), (17, 42542),
(20, 42611), (27, 42728),

Gene: Francob_47 Start: 41839, Stop: 42120, Start Num: 10
Candidate Starts for Francob_47:
(6, 41803), (Start: 8 @41821 has 1 MA's), (9, 41833), (Start: 10 @41839 has 25 MA's), (15, 41905),
(17, 41914), (27, 42100), (29, 42115),

Gene: Genie2_70 Start: 51960, Stop: 52244, Start Num: 11
Candidate Starts for Genie2_70:
(Start: 11 @51960 has 49 MA's), (Start: 12 @51999 has 2 MA's), (18, 52083), (19, 52086), (21,
52110), (25, 52173), (29, 52230),

Gene: Gilson_49 Start: 41723, Stop: 42004, Start Num: 10
Candidate Starts for Gilson_49:
(3, 41621), (Start: 8 @41705 has 1 MA's), (9, 41717), (Start: 10 @41723 has 25 MA's), (15, 41789),
(17, 41798), (20, 41867), (27, 41984),

Gene: HangryHippo_70 Start: 52672, Stop: 52950, Start Num: 11
Candidate Starts for HangryHippo_70:
(Start: 11 @52672 has 49 MA's), (14, 52732), (18, 52795), (29, 52936),

Gene: IchabodCrane_67 Start: 51693, Stop: 51977, Start Num: 11
Candidate Starts for IchabodCrane_67:
(Start: 11 @51693 has 49 MA's), (Start: 12 @51732 has 2 MA's), (18, 51816), (19, 51819), (21,
51843), (25, 51906), (29, 51963),

Gene: Jada_48 Start: 41649, Stop: 41930, Start Num: 10
Candidate Starts for Jada_48:
(Start: 8 @41631 has 1 MA's), (9, 41643), (Start: 10 @41649 has 25 MA's), (15, 41715), (17, 41724),
(20, 41793), (27, 41910),

Gene: Jay2Jay_73 Start: 53515, Stop: 53811, Start Num: 11
Candidate Starts for Jay2Jay_73:
(Start: 11 @53515 has 49 MA's), (18, 53638), (28, 53779), (29, 53785),

Gene: JimJam_70 Start: 52067, Stop: 52351, Start Num: 11
Candidate Starts for JimJam_70:
(Start: 11 @52067 has 49 MA's), (Start: 12 @52106 has 2 MA's), (18, 52190), (19, 52193), (21,
52217), (25, 52280), (29, 52337),

Gene: Karimac_69 Start: 52098, Stop: 52382, Start Num: 11

Candidate Starts for Karimac_69:

(Start: 11 @52098 has 49 MA's), (Start: 12 @52137 has 2 MA's), (18, 52221), (19, 52224), (21, 52248), (23, 52269), (25, 52311), (29, 52368),

Gene: Karp_47 Start: 42580, Stop: 42861, Start Num: 10

Candidate Starts for Karp_47:

(5, 42538), (7, 42556), (Start: 8 @42562 has 1 MA's), (9, 42574), (Start: 10 @42580 has 25 MA's), (17, 42655), (20, 42724), (23, 42754), (27, 42841), (29, 42856),

Gene: Kenrey_49 Start: 41916, Stop: 42203, Start Num: 10

Candidate Starts for Kenrey_49:

(Start: 8 @41898 has 1 MA's), (9, 41910), (Start: 10 @41916 has 25 MA's), (15, 41982), (17, 41991), (20, 42060), (27, 42177), (29, 42192), (30, 42195),

Gene: Larnav_73 Start: 52657, Stop: 52935, Start Num: 11

Candidate Starts for Larnav_73:

(Start: 11 @52657 has 49 MA's), (14, 52717), (18, 52780), (29, 52921),

Gene: Leo04_69 Start: 53172, Stop: 53450, Start Num: 11

Candidate Starts for Leo04_69:

(Start: 11 @53172 has 49 MA's), (14, 53232), (18, 53295), (29, 53436),

Gene: Liandry_67 Start: 52041, Stop: 52319, Start Num: 11

Candidate Starts for Liandry_67:

(Start: 11 @52041 has 49 MA's), (18, 52164), (21, 52191), (29, 52305),

Gene: LilMartin_65 Start: 50975, Stop: 51271, Start Num: 11

Candidate Starts for LilMartin_65:

(Start: 11 @50975 has 49 MA's), (Start: 12 @51014 has 2 MA's), (14, 51035), (18, 51098), (21, 51125), (28, 51239), (29, 51245), (31, 51263),

Gene: Limpid_45 Start: 40848, Stop: 41129, Start Num: 10

Candidate Starts for Limpid_45:

(5, 40806), (Start: 8 @40830 has 1 MA's), (9, 40842), (Start: 10 @40848 has 25 MA's), (20, 40992), (22, 41004), (27, 41109), (29, 41124),

Gene: LukeCage_69 Start: 51891, Stop: 52136, Start Num: 12

Candidate Starts for LukeCage_69:

(Start: 11 @51852 has 49 MA's), (Start: 12 @51891 has 2 MA's), (18, 51975), (19, 51978), (21, 52002), (25, 52065), (29, 52122),

Gene: Lululemon_69 Start: 52053, Stop: 52331, Start Num: 11

Candidate Starts for Lululemon_69:

(Start: 11 @52053 has 49 MA's), (14, 52113), (18, 52176), (29, 52317),

Gene: MeganTheeKilla_47 Start: 41084, Stop: 41365, Start Num: 10

Candidate Starts for MeganTheeKilla_47:

(Start: 8 @41066 has 1 MA's), (9, 41078), (Start: 10 @41084 has 25 MA's), (15, 41150), (17, 41159), (20, 41228), (27, 41345),

Gene: Mildred21_66 Start: 51171, Stop: 51455, Start Num: 11

Candidate Starts for Mildred21_66:

(Start: 11 @51171 has 49 MA's), (Start: 12 @51210 has 2 MA's), (14, 51231), (18, 51294), (21, 51321), (24, 51357), (25, 51384), (28, 51435), (29, 51441),

Gene: MindFlayer_68 Start: 51600, Stop: 51884, Start Num: 11

Candidate Starts for MindFlayer_68:

(Start: 11 @51600 has 49 MA's), (Start: 12 @51639 has 2 MA's), (18, 51723), (19, 51726), (21, 51750), (25, 51813), (29, 51870),

Gene: Moab_48 Start: 42953, Stop: 43234, Start Num: 10

Candidate Starts for Moab_48:

(6, 42917), (Start: 8 @42935 has 1 MA's), (Start: 10 @42953 has 25 MA's), (15, 43019), (20, 43097), (23, 43127), (27, 43214), (29, 43229),

Gene: Mugiwara_71 Start: 52351, Stop: 52635, Start Num: 11

Candidate Starts for Mugiwara_71:

(Start: 11 @52351 has 49 MA's), (Start: 12 @52390 has 2 MA's), (18, 52474), (19, 52477), (21, 52501), (25, 52564), (29, 52621),

Gene: MulchMansion_65 Start: 50975, Stop: 51271, Start Num: 11

Candidate Starts for MulchMansion_65:

(Start: 11 @50975 has 49 MA's), (Start: 12 @51014 has 2 MA's), (14, 51035), (18, 51098), (21, 51125), (28, 51239), (29, 51245), (31, 51263),

Gene: Muntaha_44 Start: 42639, Stop: 42911, Start Num: 10

Candidate Starts for Muntaha_44:

(Start: 10 @42639 has 25 MA's), (16, 42708), (19, 42768), (27, 42900),

Gene: Navo_68 Start: 51963, Stop: 52241, Start Num: 11

Candidate Starts for Navo_68:

(Start: 11 @51963 has 49 MA's), (18, 52086), (21, 52113), (29, 52227),

Gene: NootNoot_64 Start: 50955, Stop: 51233, Start Num: 11

Candidate Starts for NootNoot_64:

(Start: 11 @50955 has 49 MA's), (18, 51078), (21, 51105), (29, 51219),

Gene: PacManQ_69 Start: 52053, Stop: 52331, Start Num: 11

Candidate Starts for PacManQ_69:

(Start: 11 @52053 has 49 MA's), (14, 52113), (18, 52176), (29, 52317),

Gene: Paradiddles_64 Start: 51219, Stop: 51497, Start Num: 11

Candidate Starts for Paradiddles_64:

(Start: 11 @51219 has 49 MA's), (18, 51342), (21, 51369), (29, 51483),

Gene: Patelgo_48 Start: 43140, Stop: 43421, Start Num: 10

Candidate Starts for Patelgo_48:

(6, 43104), (Start: 8 @43122 has 1 MA's), (9, 43134), (Start: 10 @43140 has 25 MA's), (15, 43206), (20, 43284), (23, 43314), (27, 43401), (29, 43416),

Gene: Peebs_67 Start: 52407, Stop: 52685, Start Num: 11

Candidate Starts for Peebs_67:

(Start: 11 @52407 has 49 MA's), (14, 52467), (18, 52530), (29, 52671),

Gene: Pepperwood_68 Start: 52540, Stop: 52818, Start Num: 11

Candidate Starts for Pepperwood_68:
(Start: 11 @52540 has 49 MA's), (14, 52600), (18, 52663), (29, 52804),

Gene: Persimmon_64 Start: 50888, Stop: 51166, Start Num: 11
Candidate Starts for Persimmon_64:
(Start: 11 @50888 has 49 MA's), (18, 51011), (21, 51038), (29, 51152),

Gene: Phredrick_47 Start: 40987, Stop: 41274, Start Num: 10
Candidate Starts for Phredrick_47:
(Start: 8 @40969 has 1 MA's), (9, 40981), (Start: 10 @40987 has 25 MA's), (15, 41053), (17, 41062),
(20, 41131), (27, 41248), (29, 41263), (30, 41266),

Gene: PinkiePie_66 Start: 52041, Stop: 52319, Start Num: 11
Candidate Starts for PinkiePie_66:
(Start: 11 @52041 has 49 MA's), (18, 52164), (21, 52191), (29, 52305),

Gene: PumpkinSpice_69 Start: 51992, Stop: 52276, Start Num: 11
Candidate Starts for PumpkinSpice_69:
(Start: 11 @51992 has 49 MA's), (Start: 12 @52031 has 2 MA's), (18, 52115), (19, 52118), (21,
52142), (25, 52205), (29, 52262),

Gene: Quaran19_70 Start: 51983, Stop: 52267, Start Num: 11
Candidate Starts for Quaran19_70:
(Start: 11 @51983 has 49 MA's), (Start: 12 @52022 has 2 MA's), (18, 52106), (19, 52109), (21,
52133), (25, 52196), (29, 52253),

Gene: SaltySpittoon_70 Start: 51992, Stop: 52276, Start Num: 11
Candidate Starts for SaltySpittoon_70:
(Start: 11 @51992 has 49 MA's), (Start: 12 @52031 has 2 MA's), (18, 52115), (19, 52118), (21,
52142), (25, 52205), (29, 52262),

Gene: Samisti12_68 Start: 53847, Stop: 54125, Start Num: 11
Candidate Starts for Samisti12_68:
(Start: 11 @53847 has 49 MA's), (14, 53907), (18, 53970), (29, 54111),

Gene: SeresaTree_47 Start: 41684, Stop: 41971, Start Num: 9
Candidate Starts for SeresaTree_47:
(Start: 8 @41672 has 1 MA's), (9, 41684), (Start: 10 @41690 has 25 MA's), (15, 41756), (20, 41834),
(27, 41951),

Gene: Sham_45 Start: 42846, Stop: 43127, Start Num: 10
Candidate Starts for Sham_45:
(4, 42747), (6, 42810), (Start: 8 @42828 has 1 MA's), (9, 42840), (Start: 10 @42846 has 25 MA's),
(17, 42921), (20, 42990), (23, 43020), (27, 43107), (29, 43122),

Gene: Sollertia_70 Start: 51960, Stop: 52244, Start Num: 11
Candidate Starts for Sollertia_70:
(Start: 11 @51960 has 49 MA's), (Start: 12 @51999 has 2 MA's), (18, 52083), (19, 52086), (21,
52110), (25, 52173), (29, 52230),

Gene: SparkleGoddess_48 Start: 42982, Stop: 43263, Start Num: 10
Candidate Starts for SparkleGoddess_48:

(5, 42940), (7, 42958), (Start: 8 @42964 has 1 MA's), (9, 42976), (Start: 10 @42982 has 25 MA's), (17, 43057), (20, 43126), (23, 43156), (27, 43243), (29, 43258),

Gene: Spelly_70 Start: 51947, Stop: 52231, Start Num: 11

Candidate Starts for Spelly_70:

(Start: 11 @51947 has 49 MA's), (Start: 12 @51986 has 2 MA's), (18, 52070), (19, 52073), (21, 52097), (25, 52160), (29, 52217),

Gene: Spilled_71 Start: 52064, Stop: 52348, Start Num: 11

Candidate Starts for Spilled_71:

(Start: 11 @52064 has 49 MA's), (Start: 12 @52103 has 2 MA's), (18, 52187), (19, 52190), (21, 52214), (25, 52277), (29, 52334),

Gene: Squillum_67 Start: 52042, Stop: 52320, Start Num: 11

Candidate Starts for Squillum_67:

(Start: 11 @52042 has 49 MA's), (18, 52165), (21, 52192), (29, 52306),

Gene: Stanimal_70 Start: 51849, Stop: 52133, Start Num: 11

Candidate Starts for Stanimal_70:

(Start: 11 @51849 has 49 MA's), (Start: 12 @51888 has 2 MA's), (18, 51972), (19, 51975), (21, 51999), (25, 52062), (29, 52119),

Gene: StarPlatinum_70 Start: 52531, Stop: 52776, Start Num: 12

Candidate Starts for StarPlatinum_70:

(Start: 11 @52492 has 49 MA's), (Start: 12 @52531 has 2 MA's), (18, 52615), (19, 52618), (21, 52642), (25, 52705), (29, 52762),

Gene: Stigma_48 Start: 42995, Stop: 43276, Start Num: 10

Candidate Starts for Stigma_48:

(5, 42953), (7, 42971), (Start: 8 @42977 has 1 MA's), (9, 42989), (Start: 10 @42995 has 25 MA's), (17, 43070), (20, 43139), (23, 43169), (27, 43256), (29, 43271),

Gene: Sushi23_68 Start: 52765, Stop: 53043, Start Num: 11

Candidate Starts for Sushi23_68:

(Start: 11 @52765 has 49 MA's), (14, 52825), (18, 52888), (29, 53029),

Gene: Targaryen_69 Start: 53564, Stop: 53860, Start Num: 11

Candidate Starts for Targaryen_69:

(Start: 11 @53564 has 49 MA's), (18, 53687), (28, 53828), (29, 53834),

Gene: Deutsch_68 Start: 53028, Stop: 53306, Start Num: 11

Candidate Starts for Deutsch_68:

(Start: 11 @53028 has 49 MA's), (14, 53088), (18, 53151), (29, 53292),

Gene: TomSawyer_68 Start: 51586, Stop: 51870, Start Num: 11

Candidate Starts for TomSawyer_68:

(Start: 11 @51586 has 49 MA's), (Start: 12 @51625 has 2 MA's), (18, 51709), (19, 51712), (21, 51736), (25, 51799), (29, 51856),

Gene: Tomas_72 Start: 54306, Stop: 54590, Start Num: 11

Candidate Starts for Tomas_72:

(1, 54165), (2, 54195), (Start: 11 @54306 has 49 MA's), (Start: 12 @54345 has 2 MA's), (13, 54348), (18, 54429), (19, 54432), (21, 54456), (29, 54576),

Gene: Tribute_66 Start: 52234, Stop: 52512, Start Num: 11
Candidate Starts for Tribute_66:
(Start: 11 @52234 has 49 MA's), (14, 52294), (18, 52357), (29, 52498),

Gene: TunaTartare_47 Start: 43126, Stop: 43425, Start Num: 8
Candidate Starts for TunaTartare_47:
(6, 43108), (Start: 8 @43126 has 1 MA's), (9, 43138), (Start: 10 @43144 has 25 MA's), (20, 43288),
(23, 43318), (27, 43405), (29, 43420),

Gene: Wakanda_44 Start: 42577, Stop: 42849, Start Num: 10
Candidate Starts for Wakanda_44:
(Start: 10 @42577 has 25 MA's), (16, 42646), (19, 42706), (27, 42838),

Gene: Warpy_72 Start: 53028, Stop: 53324, Start Num: 11
Candidate Starts for Warpy_72:
(Start: 11 @53028 has 49 MA's), (18, 53151), (28, 53292), (29, 53298),

Gene: Watermoore_68 Start: 53244, Stop: 53522, Start Num: 11
Candidate Starts for Watermoore_68:
(Start: 11 @53244 has 49 MA's), (14, 53304), (18, 53367), (29, 53508),

Gene: WhereRU_67 Start: 51479, Stop: 51757, Start Num: 11
Candidate Starts for WhereRU_67:
(Start: 11 @51479 has 49 MA's), (18, 51602), (21, 51629), (29, 51743),

Gene: Wofford_69 Start: 53022, Stop: 53306, Start Num: 11
Candidate Starts for Wofford_69:
(Start: 11 @53022 has 49 MA's), (Start: 12 @53061 has 2 MA's), (18, 53145), (19, 53148), (26, 53268), (29, 53292),

Gene: Yaboi_70 Start: 51937, Stop: 52221, Start Num: 11
Candidate Starts for Yaboi_70:
(Start: 11 @51937 has 49 MA's), (Start: 12 @51976 has 2 MA's), (18, 52060), (19, 52063), (21, 52087), (25, 52150), (29, 52207),