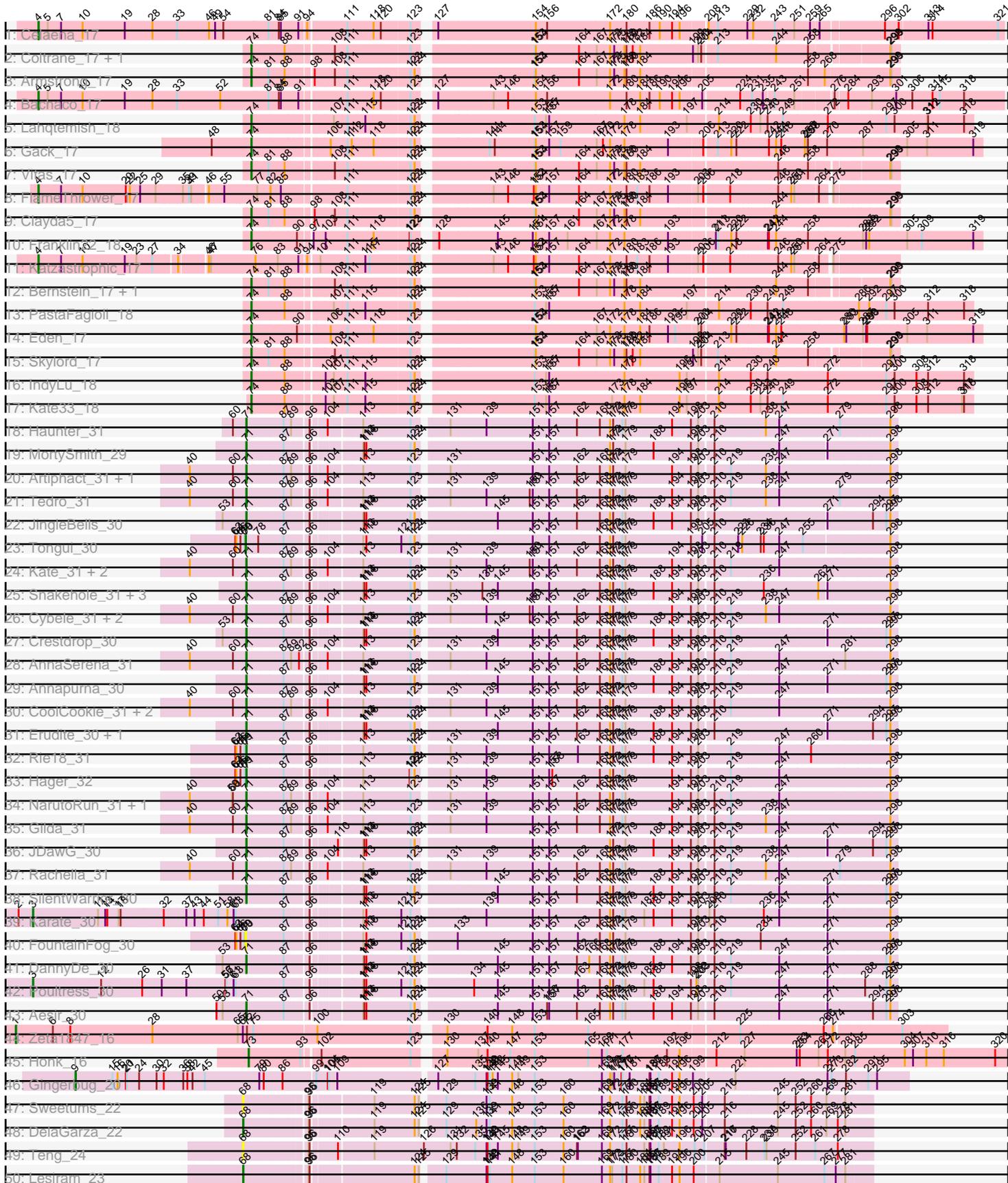


Pham 291159



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 291159 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291159 has 64 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Celaena_17
- Track 2 : Coltrane_17, Brahms_17
- Track 3 : Armstrong_17
- Track 4 : Bachaco_17
- Track 5 : Lahqtemish_18
- Track 6 : Gack_17
- Track 7 : Vitas_17
- Track 8 : FlameThrower_17
- Track 9 : Clayda5_17
- Track 10 : Franklin22_18
- Track 11 : Katzastrophic_17
- Track 12 : Bernstein_17, Rollins_17
- Track 13 : PastaFagioli_18
- Track 14 : Eden_17
- Track 15 : Skylord_17
- Track 16 : IndyLu_18
- Track 17 : Kate33_18
- Track 18 : Haunter_31
- Track 19 : MortySmith_29
- Track 20 : Artiphact_31, Pharpay_31
- Track 21 : Tedro_31
- Track 22 : JingleBells_30
- Track 23 : Tongui_30
- Track 24 : Kate_31, OverHedge_31, OhDear_31
- Track 25 : Snakehole_31, Chivey_30, Hiddenleaf_30, FreddieHg_30
- Track 26 : Cybele_31, Neptune_31, PhunaPhoke_31
- Track 27 : Crestdrop_30
- Track 28 : AnnaSerena_31
- Track 29 : Annapurna_30
- Track 30 : CoolCookie_31, Potty_31, Krampus_31
- Track 31 : Erudite_30, Dauntless_30
- Track 32 : Rie18_31
- Track 33 : Hager_32
- Track 34 : NarutoRun_31, Anakin_31
- Track 35 : Gilda_31
- Track 36 : JDawG_30
- Track 37 : Rachella_31

- Track 38 : SilentWarrior_30
- Track 39 : Karate_30
- Track 40 : FountainFog_30
- Track 41 : DannyDe_30
- Track 42 : Poultriss_30
- Track 43 : Aesir_30
- Track 44 : Zeta1847_16
- Track 45 : Honk_16
- Track 46 : Gingerbug_20
- Track 47 : Sweetums_22
- Track 48 : DelaGarza_22
- Track 49 : Teng_24
- Track 50 : Lesiram_23

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

The start number called the most often in the published annotations is 71, it was called in 31 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir_30, Anakin_31, AnnaSerena_31, Annapurna_30, Artiphact_31, Chivey_30, CoolCookie_31, Crestdrop_30, Cybele_31, DannyDe_30, Dauntless_30, Erudite_30, FreddieHg_30, Gilda_31, Hager_32, Haunter_31, Hiddenleaf_30, JDawG_30, JingleBells_30, Kate_31, Krampus_31, MortySmith_29, NarutoRun_31, Neptune_31, OhDear_31, OverHedge_31, Pharpay_31, PhunaPhoke_31, Potty_31, Rachella_31, Rie18_31, SilentWarrior_30, Snakehole_31, Tedro_31,

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

-

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

- Armstrong_17, Bachaco_17, Bernstein_17, Brahms_17, Celaena_17, Clayda5_17, Coltrane_17, DelaGarza_22, Eden_17, FlameThrower_17, FountainFog_30, Franklin22_18, Gack_17, Gingerbug_20, Honk_16, IndyLu_18, Karate_30, Kate33_18, Katzastrophic_17, Lahqtemish_18, Lesiram_23, PastaFagioli_18, Poultriss_30, Rollins_17, Skylord_17, Sweetums_22, Teng_24, Tongui_30, Vitas_17, Zeta1847_16,

Summary by start number:

Start 1:

- Found in 1 of 64 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Zeta1847_16 (EH),

Start 3:

- Found in 2 of 64 (3.1%) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Karate_30 (EF), Poultruss_30 (EF),

Start 4:

- Found in 4 of 64 (6.2%) of genes in pham
- Manual Annotations of this start: 4 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bachaco_17 (EB), Celaena_17 (EB), FlameThrower_17 (EB), Katzastrophic_17 (EB),

Start 9:

- Found in 1 of 64 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gingerbug_20 (GF),

Start 68:

- Found in 4 of 64 (6.2%) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DelaGarza_22 (GF), Lesiram_23 (GF), Sweetums_22 (GF), Teng_24 (GF),

Start 70:

- Found in 2 of 64 (3.1%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FountainFog_30 (EF), Tongui_30 (EF),

Start 71:

- Found in 34 of 64 (53.1%) of genes in pham
- Manual Annotations of this start: 31 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aesir_30 (EF), Anakin_31 (EF), AnnaSerena_31 (EF), Annapurna_30 (EF), Artiphact_31 (EF), Chivey_30 (EF), CoolCookie_31 (EF), Crestdrop_30 (EF), Cybele_31 (EF), DannyDe_30 (EF), Dauntless_30 (EF), Erudite_30 (EF), FreddieHg_30 (EF), Gilda_31 (EF), Hager_32 (EF), Haunter_31 (EF), Hiddenleaf_30 (EF), JDawG_30 (EF), JingleBells_30 (EF), Kate_31 (EF), Krampus_31 (EF), MortySmith_29 (EF), NarutoRun_31 (EF), Neptune_31 (EF), OhDear_31 (EF), OverHedge_31 (EF), Pharpay_31 (EF), PhunaPhoke_31 (EF), Potty_31 (EF), Rachella_31 (EF), Rie18_31 (EF), SilentWarrior_30 (EF), Snakehole_31 (EF), Tedro_31 (EF),

Start 73:

- Found in 1 of 64 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Honk_16 (EH),

Start 74:

- Found in 15 of 64 (23.4%) of genes in pham
- Manual Annotations of this start: 15 of 58
- Called 100.0% of time when present

• Phage (with cluster) where this start called: Armstrong_17 (EB), Bernstein_17 (EB), Brahms_17 (EB), Clayda5_17 (EB), Coltrane_17 (EB), Eden_17 (EB), Franklin22_18 (EB), Gack_17 (EB), IndyLu_18 (EB), Kate33_18 (EB), Lahqtemish_18 (EB), PastaFagioli_18 (EB), Rollins_17 (EB), Skylord_17 (EB), Vitas_17 (EB),

Summary by clusters:

There are 4 clusters represented in this pham: GF, EF, EH, EB,

Info for manual annotations of cluster EB:

- Start number 4 was manually annotated 4 times for cluster EB.
- Start number 74 was manually annotated 15 times for cluster EB.

Info for manual annotations of cluster EF:

- Start number 3 was manually annotated 2 times for cluster EF.
- Start number 70 was manually annotated 1 time for cluster EF.
- Start number 71 was manually annotated 31 times for cluster EF.

Info for manual annotations of cluster EH:

- Start number 1 was manually annotated 1 time for cluster EH.
- Start number 73 was manually annotated 1 time for cluster EH.

Info for manual annotations of cluster GF:

- Start number 9 was manually annotated 1 time for cluster GF.
- Start number 68 was manually annotated 2 times for cluster GF.

Gene Information:

Gene: Aesir_30 Start: 18424, Stop: 20193, Start Num: 71

Candidate Starts for Aesir_30:

(50, 18337), (53, 18355), (Start: 71 @18424 has 31 MA's), (87, 18526), (96, 18589), (113, 18712), (114, 18715), (116, 18721), (123, 18850), (124, 18862), (145, 19075), (151, 19177), (156, 19219), (157, 19225), (162, 19306), (168, 19372), (172, 19402), (174, 19411), (177, 19438), (179, 19447), (188, 19528), (194, 19582), (198, 19633), (203, 19648), (210, 19684), (247, 19867), (271, 19996), (294, 20122), (297, 20161), (298, 20173),

Gene: Anakin_31 Start: 18678, Stop: 20456, Start Num: 71

Candidate Starts for Anakin_31:

(40, 18513), (59, 18636), (60, 18639), (Start: 71 @18678 has 31 MA's), (87, 18780), (89, 18801), (96, 18843), (104, 18879), (113, 18966), (123, 19104), (131, 19194), (139, 19296), (151, 19431), (157, 19479), (162, 19560), (168, 19626), (172, 19656), (174, 19665), (177, 19692), (179, 19701), (194, 19836), (198, 19887), (203, 19902), (210, 19938), (219, 19986), (247, 20121), (298, 20436),

Gene: AnnaSerena_31 Start: 18687, Stop: 20465, Start Num: 71

Candidate Starts for AnnaSerena_31:

(40, 18522), (60, 18648), (Start: 71 @18687 has 31 MA's), (87, 18789), (89, 18810), (92, 18831), (96, 18852), (104, 18888), (113, 18975), (123, 19113), (131, 19203), (139, 19305), (151, 19440), (157, 19488), (162, 19569), (168, 19635), (172, 19665), (174, 19674), (177, 19701), (179, 19710), (194, 19845), (198, 19896), (203, 19911), (210, 19947), (219, 19995), (247, 20130), (281, 20316), (298, 20445),

Gene: Annapurna_30 Start: 17886, Stop: 19655, Start Num: 71

Candidate Starts for Annapurna_30:

(Start: 71 @17886 has 31 MA's), (87, 17988), (96, 18051), (113, 18174), (114, 18177), (116, 18183), (123, 18312), (124, 18324), (145, 18537), (151, 18639), (157, 18687), (162, 18768), (168, 18834), (172, 18864), (174, 18873), (177, 18900), (179, 18909), (188, 18990), (194, 19044), (198, 19095), (203, 19110), (210, 19146), (219, 19194), (247, 19329), (271, 19458), (297, 19623), (298, 19635),

Gene: Armstrong_17 Start: 12466, Stop: 14193, Start Num: 74

Candidate Starts for Armstrong_17:

(Start: 74 @12466 has 15 MA's), (81, 12514), (88, 12559), (98, 12625), (108, 12682), (111, 12712), (123, 12886), (124, 12898), (153, 13204), (154, 13207), (164, 13333), (167, 13384), (172, 13423), (175, 13435), (178, 13465), (180, 13471), (184, 13507), (258, 13963), (268, 14011), (298, 14167), (299, 14170),

Gene: Artiphact_31 Start: 18679, Stop: 20457, Start Num: 71

Candidate Starts for Artiphact_31:

(40, 18514), (60, 18640), (Start: 71 @18679 has 31 MA's), (87, 18781), (89, 18802), (96, 18844), (104, 18880), (113, 18967), (123, 19105), (131, 19195), (151, 19432), (157, 19480), (162, 19561), (168, 19627), (172, 19657), (174, 19666), (179, 19702), (194, 19837), (198, 19888), (203, 19903), (210, 19939), (219, 19987), (238, 20083), (247, 20122), (298, 20437),

Gene: Bachaco_17 Start: 13521, Stop: 16133, Start Num: 4

Candidate Starts for Bachaco_17:

(Start: 4 @13521 has 4 MA's), (5, 13548), (7, 13587), (10, 13650), (19, 13773), (28, 13854), (33, 13926), (52, 14052), (81, 14190), (84, 14217), (85, 14223), (91, 14271), (111, 14388), (118, 14463), (120, 14484), (123, 14562), (127, 14604), (143, 14760), (146, 14802), (154, 14883), (156, 14916), (172, 15099), (180, 15147), (184, 15183), (186, 15210), (190, 15240), (194, 15276), (196, 15297), (205, 15357), (224, 15453), (231, 15483), (235, 15507), (243, 15531), (251, 15585), (276, 15678), (284, 15708), (293, 15771), (301, 15834), (306, 15879), (314, 15936), (315, 15957), (318, 16023),

Gene: Bernstein_17 Start: 12526, Stop: 14229, Start Num: 74

Candidate Starts for Bernstein_17:

(Start: 74 @12526 has 15 MA's), (81, 12574), (88, 12619), (108, 12742), (111, 12772), (123, 12946), (124, 12958), (153, 13264), (154, 13267), (164, 13393), (167, 13444), (172, 13483), (175, 13495), (178, 13525), (180, 13531), (184, 13567), (244, 13933), (258, 14023), (298, 14203), (299, 14206),

Gene: Brahms_17 Start: 12466, Stop: 14169, Start Num: 74

Candidate Starts for Brahms_17:

(Start: 74 @12466 has 15 MA's), (88, 12559), (108, 12682), (111, 12712), (123, 12886), (153, 13204), (154, 13207), (164, 13333), (167, 13384), (172, 13423), (175, 13435), (178, 13465), (180, 13471), (182, 13489), (184, 13507), (199, 13654), (203, 13669), (204, 13678), (213, 13717), (244, 13873), (258, 13963), (298, 14143), (299, 14146),

Gene: Celaena_17 Start: 13457, Stop: 16075, Start Num: 4

Candidate Starts for Celaena_17:

(Start: 4 @13457 has 4 MA's), (5, 13484), (7, 13523), (10, 13586), (19, 13709), (28, 13790), (33, 13862), (46, 13955), (49, 13973), (54, 13997), (81, 14126), (84, 14153), (85, 14159), (91, 14207), (94, 14225), (111, 14324), (118, 14399), (120, 14420), (123, 14498), (127, 14540), (154, 14819), (156, 14852), (172, 15035), (180, 15083), (186, 15146), (190, 15176), (194, 15212), (196, 15233), (208, 15302), (213, 15329), (229, 15407), (232, 15422), (243, 15473), (251, 15527), (259, 15572), (265, 15593), (296, 15746), (302, 15779), (313, 15857), (314, 15869), (321, 16058),

Gene: Chivey_30 Start: 17840, Stop: 19609, Start Num: 71

Candidate Starts for Chivey_30:

(Start: 71 @17840 has 31 MA's), (87, 17942), (96, 18005), (113, 18128), (114, 18131), (116, 18137), (123, 18266), (124, 18278), (131, 18356), (138, 18446), (145, 18491), (151, 18593), (157, 18641), (168, 18788), (172, 18818), (174, 18827), (177, 18854), (179, 18863), (188, 18944), (194, 18998), (198, 19049), (203, 19064), (210, 19100), (236, 19238), (262, 19394), (271, 19412), (298, 19589),

Gene: Clayda5_17 Start: 12466, Stop: 14199, Start Num: 74

Candidate Starts for Clayda5_17:

(Start: 74 @12466 has 15 MA's), (81, 12514), (88, 12559), (98, 12625), (108, 12682), (111, 12712), (123, 12886), (124, 12898), (153, 13204), (154, 13207), (164, 13333), (167, 13384), (172, 13423), (175, 13435), (178, 13465), (180, 13471), (184, 13507), (244, 13873), (298, 14173), (299, 14176),

Gene: Coltrane_17 Start: 12466, Stop: 14169, Start Num: 74

Candidate Starts for Coltrane_17:

(Start: 74 @12466 has 15 MA's), (88, 12559), (108, 12682), (111, 12712), (123, 12886), (153, 13204), (154, 13207), (164, 13333), (167, 13384), (172, 13423), (175, 13435), (178, 13465), (180, 13471), (182, 13489), (184, 13507), (199, 13654), (203, 13669), (204, 13678), (213, 13717), (244, 13873), (258, 13963), (298, 14143), (299, 14146),

Gene: CoolCookie_31 Start: 18685, Stop: 20463, Start Num: 71

Candidate Starts for CoolCookie_31:

(40, 18520), (60, 18646), (Start: 71 @18685 has 31 MA's), (87, 18787), (89, 18808), (96, 18850), (104, 18886), (113, 18973), (123, 19111), (131, 19201), (139, 19303), (151, 19438), (157, 19486), (162, 19567), (168, 19633), (172, 19663), (174, 19672), (179, 19708), (194, 19843), (198, 19894), (203, 19909), (210, 19945), (219, 19993), (247, 20128), (298, 20443),

Gene: Crestdrop_30 Start: 17749, Stop: 19518, Start Num: 71

Candidate Starts for Crestdrop_30:

(53, 17680), (Start: 71 @17749 has 31 MA's), (87, 17851), (96, 17914), (113, 18037), (114, 18040), (116, 18046), (123, 18175), (124, 18187), (145, 18400), (151, 18502), (157, 18550), (162, 18631), (168, 18697), (172, 18727), (174, 18736), (177, 18763), (179, 18772), (188, 18853), (194, 18907), (198, 18958), (203, 18973), (210, 19009), (219, 19057), (271, 19321), (297, 19486), (298, 19498),

Gene: Cybele_31 Start: 18655, Stop: 20433, Start Num: 71

Candidate Starts for Cybele_31:

(40, 18490), (60, 18616), (Start: 71 @18655 has 31 MA's), (87, 18757), (89, 18778), (96, 18820), (104, 18856), (113, 18943), (123, 19081), (131, 19171), (139, 19273), (150, 19399), (151, 19408), (157, 19456), (162, 19537), (168, 19603), (172, 19633), (174, 19642), (177, 19669), (179, 19678), (194, 19813), (198, 19864), (203, 19879), (210, 19915), (219, 19963), (238, 20059), (247, 20098), (298, 20413),

Gene: DannyDe_30 Start: 17832, Stop: 19601, Start Num: 71

Candidate Starts for DannyDe_30:

(53, 17763), (Start: 71 @17832 has 31 MA's), (87, 17934), (96, 17997), (113, 18120), (114, 18123), (116, 18129), (123, 18258), (124, 18270), (145, 18483), (151, 18585), (157, 18633), (162, 18714), (166, 18750), (168, 18780), (172, 18810), (174, 18819), (177, 18846), (179, 18855), (188, 18936), (194, 18990), (198, 19041), (203, 19056), (210, 19092), (219, 19140), (247, 19275), (271, 19404), (297, 19569), (298, 19581),

Gene: Dauntless_30 Start: 18392, Stop: 20161, Start Num: 71

Candidate Starts for Dauntless_30:

(Start: 71 @18392 has 31 MA's), (87, 18494), (96, 18557), (113, 18680), (114, 18683), (116, 18689), (123, 18818), (124, 18830), (145, 19043), (151, 19145), (157, 19193), (162, 19274), (168, 19340),

(172, 19370), (174, 19379), (177, 19406), (179, 19415), (188, 19496), (194, 19550), (198, 19601), (203, 19616), (210, 19652), (271, 19964), (294, 20090), (297, 20129), (298, 20141),

Gene: DelaGarza_22 Start: 15128, Stop: 16816, Start Num: 68

Candidate Starts for DelaGarza_22:

(Start: 68 @15128 has 2 MA's), (95, 15275), (96, 15278), (119, 15440), (124, 15557), (125, 15569), (129, 15623), (136, 15710), (139, 15740), (141, 15749), (148, 15815), (153, 15881), (160, 15965), (169, 16073), (172, 16097), (177, 16133), (180, 16145), (184, 16181), (185, 16193), (186, 16208), (187, 16211), (189, 16235), (194, 16274), (196, 16295), (200, 16331), (205, 16352), (216, 16409), (245, 16556), (252, 16607), (260, 16652), (269, 16697), (278, 16721), (281, 16739),

Gene: Eden_17 Start: 12590, Stop: 14578, Start Num: 74

Candidate Starts for Eden_17:

(Start: 74 @12590 has 15 MA's), (90, 12713), (106, 12791), (111, 12833), (118, 12908), (123, 13007), (153, 13325), (154, 13328), (167, 13505), (172, 13544), (178, 13586), (184, 13628), (186, 13655), (193, 13709), (195, 13730), (203, 13790), (204, 13799), (220, 13877), (222, 13892), (241, 13976), (242, 13979), (244, 14000), (248, 14015), (280, 14192), (283, 14198), (287, 14240), (289, 14249), (290, 14252), (305, 14360), (311, 14417), (319, 14552),

Gene: Erudite_30 Start: 18392, Stop: 20161, Start Num: 71

Candidate Starts for Erudite_30:

(Start: 71 @18392 has 31 MA's), (87, 18494), (96, 18557), (113, 18680), (114, 18683), (116, 18689), (123, 18818), (124, 18830), (145, 19043), (151, 19145), (157, 19193), (162, 19274), (168, 19340), (172, 19370), (174, 19379), (177, 19406), (179, 19415), (188, 19496), (194, 19550), (198, 19601), (203, 19616), (210, 19652), (271, 19964), (294, 20090), (297, 20129), (298, 20141),

Gene: FlameThrower_17 Start: 13345, Stop: 15654, Start Num: 4

Candidate Starts for FlameThrower_17:

(Start: 4 @13345 has 4 MA's), (7, 13411), (10, 13474), (20, 13600), (22, 13612), (25, 13642), (29, 13687), (35, 13762), (39, 13780), (41, 13786), (46, 13825), (55, 13870), (77, 13957), (82, 13996), (85, 14026), (111, 14194), (123, 14368), (124, 14380), (143, 14566), (146, 14608), (152, 14683), (154, 14689), (157, 14728), (164, 14815), (172, 14905), (180, 14953), (183, 14980), (186, 15016), (193, 15070), (203, 15151), (206, 15166), (218, 15235), (246, 15358), (250, 15394), (251, 15403), (264, 15463), (275, 15490),

Gene: FountainFog_30 Start: 17995, Stop: 19764, Start Num: 70

Candidate Starts for FountainFog_30:

(62, 17965), (64, 17968), (66, 17980), (69, 17992), (Start: 70 @17995 has 1 MA's), (87, 18097), (96, 18160), (113, 18283), (116, 18292), (121, 18394), (123, 18421), (124, 18433), (133, 18532), (151, 18748), (157, 18796), (163, 18880), (168, 18943), (172, 18973), (174, 18982), (179, 19018), (198, 19204), (203, 19219), (210, 19255), (234, 19384), (271, 19567), (298, 19744),

Gene: Franklin22_18 Start: 12769, Stop: 14757, Start Num: 74

Candidate Starts for Franklin22_18:

(Start: 74 @12769 has 15 MA's), (90, 12892), (97, 12922), (103, 12955), (111, 13015), (118, 13090), (122, 13186), (123, 13189), (128, 13234), (145, 13399), (151, 13501), (154, 13510), (157, 13549), (161, 13603), (167, 13687), (172, 13726), (178, 13768), (193, 13891), (211, 14014), (213, 14020), (220, 14059), (222, 14074), (241, 14158), (242, 14161), (244, 14182), (258, 14269), (287, 14419), (289, 14428), (292, 14437), (305, 14539), (309, 14581), (319, 14731),

Gene: FreddieHg_30 Start: 17856, Stop: 19625, Start Num: 71

Candidate Starts for FreddieHg_30:

(Start: 71 @17856 has 31 MA's), (87, 17958), (96, 18021), (113, 18144), (114, 18147), (116, 18153), (123, 18282), (124, 18294), (131, 18372), (138, 18462), (145, 18507), (151, 18609), (157, 18657), (168, 18804), (172, 18834), (174, 18843), (177, 18870), (179, 18879), (188, 18960), (194, 19014), (198, 19065), (203, 19080), (210, 19116), (236, 19254), (262, 19410), (271, 19428), (298, 19605),

Gene: Gack_17 Start: 12658, Stop: 14643, Start Num: 74

Candidate Starts for Gack_17:

(48, 12544), (Start: 74 @12658 has 15 MA's), (106, 12859), (111, 12901), (112, 12913), (118, 12976), (123, 13075), (124, 13087), (141, 13261), (144, 13276), (153, 13393), (154, 13396), (157, 13435), (159, 13468), (167, 13573), (170, 13591), (172, 13612), (178, 13654), (193, 13777), (206, 13873), (213, 13906), (220, 13945), (222, 13960), (242, 14047), (244, 14068), (248, 14083), (256, 14146), (257, 14152), (258, 14155), (270, 14209), (287, 14305), (305, 14425), (311, 14482), (319, 14617),

Gene: Gilda_31 Start: 18679, Stop: 20457, Start Num: 71

Candidate Starts for Gilda_31:

(40, 18514), (60, 18640), (Start: 71 @18679 has 31 MA's), (87, 18781), (89, 18802), (96, 18844), (104, 18880), (113, 18967), (123, 19105), (131, 19195), (139, 19297), (151, 19432), (157, 19480), (162, 19561), (168, 19627), (172, 19657), (174, 19666), (177, 19693), (179, 19702), (194, 19837), (198, 19888), (203, 19903), (210, 19939), (219, 19987), (238, 20083), (247, 20122), (298, 20437),

Gene: Gingerbug_20 Start: 14337, Stop: 16679, Start Num: 9

Candidate Starts for Gingerbug_20:

(Start: 9 @14337 has 1 MA's), (15, 14445), (16, 14460), (20, 14484), (21, 14487), (24, 14523), (30, 14574), (32, 14595), (36, 14652), (38, 14664), (42, 14679), (45, 14715), (79, 14871), (80, 14883), (86, 14934), (99, 15018), (104, 15051), (105, 15054), (109, 15078), (127, 15345), (135, 15453), (139, 15486), (140, 15489), (141, 15495), (142, 15504), (145, 15519), (148, 15561), (149, 15579), (153, 15627), (169, 15819), (172, 15843), (173, 15849), (175, 15855), (176, 15876), (177, 15879), (181, 15900), (186, 15954), (187, 15957), (189, 15981), (194, 16020), (196, 16041), (199, 16074), (221, 16188), (271, 16452), (273, 16464), (282, 16503), (291, 16563), (295, 16587),

Gene: Hager_32 Start: 18239, Stop: 20017, Start Num: 71

Candidate Starts for Hager_32:

(62, 18209), (64, 18212), (66, 18224), (69, 18236), (Start: 71 @18239 has 31 MA's), (87, 18341), (96, 18404), (113, 18527), (122, 18662), (123, 18665), (124, 18677), (131, 18755), (139, 18857), (151, 18992), (157, 19040), (158, 19049), (168, 19187), (172, 19217), (174, 19226), (177, 19253), (179, 19262), (194, 19397), (198, 19448), (203, 19463), (219, 19547), (247, 19682), (298, 19997),

Gene: Haunter_31 Start: 18092, Stop: 19870, Start Num: 71

Candidate Starts for Haunter_31:

(60, 18053), (Start: 71 @18092 has 31 MA's), (87, 18194), (89, 18215), (96, 18257), (104, 18293), (113, 18380), (123, 18518), (131, 18608), (139, 18710), (151, 18845), (157, 18893), (162, 18974), (168, 19040), (172, 19070), (174, 19079), (177, 19106), (179, 19115), (194, 19250), (198, 19301), (203, 19316), (210, 19352), (238, 19496), (247, 19535), (279, 19706), (298, 19850),

Gene: Hiddenleaf_30 Start: 17840, Stop: 19609, Start Num: 71

Candidate Starts for Hiddenleaf_30:

(Start: 71 @17840 has 31 MA's), (87, 17942), (96, 18005), (113, 18128), (114, 18131), (116, 18137), (123, 18266), (124, 18278), (131, 18356), (138, 18446), (145, 18491), (151, 18593), (157, 18641), (168, 18788), (172, 18818), (174, 18827), (177, 18854), (179, 18863), (188, 18944), (194, 18998), (198, 19049), (203, 19064), (210, 19100), (236, 19238), (262, 19394), (271, 19412), (298, 19589),

Gene: Honk_16 Start: 12148, Stop: 14262, Start Num: 73

Candidate Starts for Honk_16:

(Start: 73 @12148 has 1 MA's), (93, 12286), (102, 12322), (123, 12580), (130, 12649), (137, 12733), (140, 12760), (147, 12826), (153, 12898), (165, 13054), (169, 13093), (171, 13108), (177, 13153), (192, 13279), (196, 13315), (212, 13405), (227, 13483), (253, 13627), (254, 13633), (263, 13684), (272, 13711), (281, 13762), (285, 13789), (304, 13927), (307, 13948), (310, 13987), (316, 14038), (320, 14188),

Gene: IndyLu_18 Start: 13944, Stop: 15914, Start Num: 74

Candidate Starts for IndyLu_18:

(Start: 74 @13944 has 15 MA's), (88, 14037), (103, 14133), (107, 14157), (111, 14190), (115, 14241), (123, 14364), (124, 14376), (153, 14682), (155, 14715), (157, 14724), (178, 14943), (196, 15099), (197, 15120), (214, 15204), (230, 15294), (240, 15339), (272, 15504), (297, 15663), (300, 15687), (308, 15750), (312, 15783), (318, 15888),

Gene: JDawG_30 Start: 18422, Stop: 20188, Start Num: 71

Candidate Starts for JDawG_30:

(Start: 71 @18422 has 31 MA's), (87, 18524), (96, 18587), (110, 18647), (113, 18710), (114, 18713), (116, 18719), (123, 18848), (124, 18860), (151, 19172), (157, 19220), (172, 19397), (174, 19406), (179, 19442), (188, 19523), (194, 19577), (198, 19628), (203, 19643), (210, 19679), (219, 19727), (247, 19862), (271, 19991), (294, 20117), (297, 20156), (298, 20168),

Gene: JingleBells_30 Start: 17956, Stop: 19725, Start Num: 71

Candidate Starts for JingleBells_30:

(53, 17887), (Start: 71 @17956 has 31 MA's), (87, 18058), (96, 18121), (113, 18244), (114, 18247), (116, 18253), (123, 18382), (124, 18394), (145, 18607), (151, 18709), (157, 18757), (162, 18838), (168, 18904), (172, 18934), (174, 18943), (177, 18970), (179, 18979), (188, 19060), (194, 19114), (198, 19165), (203, 19180), (210, 19216), (271, 19528), (294, 19654), (297, 19693), (298, 19705),

Gene: Karate_30 Start: 18091, Stop: 20484, Start Num: 3

Candidate Starts for Karate_30:

(2, 18049), (Start: 3 @18091 has 2 MA's), (11, 18280), (13, 18301), (14, 18307), (17, 18340), (18, 18346), (32, 18466), (37, 18532), (43, 18556), (44, 18583), (51, 18625), (58, 18652), (61, 18670), (63, 18676), (87, 18808), (96, 18871), (113, 18994), (116, 19003), (121, 19105), (123, 19132), (139, 19321), (151, 19456), (157, 19504), (168, 19651), (172, 19681), (174, 19690), (177, 19717), (179, 19726), (185, 19780), (188, 19807), (194, 19861), (198, 19912), (203, 19927), (209, 19960), (210, 19975), (236, 20113), (247, 20158), (271, 20287), (298, 20464),

Gene: Kate_31 Start: 18687, Stop: 20465, Start Num: 71

Candidate Starts for Kate_31:

(40, 18522), (60, 18648), (Start: 71 @18687 has 31 MA's), (87, 18789), (89, 18810), (96, 18852), (104, 18888), (113, 18975), (123, 19113), (131, 19203), (139, 19305), (150, 19431), (151, 19440), (157, 19488), (162, 19569), (168, 19635), (172, 19665), (174, 19674), (177, 19701), (179, 19710), (194, 19845), (198, 19896), (203, 19911), (210, 19947), (219, 19995), (247, 20130), (298, 20445),

Gene: Kate33_18 Start: 13943, Stop: 15916, Start Num: 74

Candidate Starts for Kate33_18:

(Start: 74 @13943 has 15 MA's), (88, 14036), (103, 14132), (107, 14156), (111, 14189), (115, 14240), (123, 14363), (124, 14375), (153, 14681), (155, 14714), (157, 14723), (173, 14906), (178, 14942), (184, 14984), (196, 15098), (197, 15119), (214, 15203), (230, 15296), (233, 15320), (240, 15341), (249, 15380), (272, 15506), (297, 15665), (300, 15689), (308, 15752), (312, 15785), (317, 15884), (318, 15890),

Gene: Katzastrophic_17 Start: 13520, Stop: 15796, Start Num: 4

Candidate Starts for Katzastrophic_17:

(Start: 4 @13520 has 4 MA's), (7, 13586), (10, 13649), (19, 13772), (23, 13805), (27, 13847), (34, 13910), (46, 13976), (47, 13982), (76, 14102), (83, 14159), (91, 14219), (94, 14237), (101, 14264), (111, 14336), (115, 14387), (117, 14399), (123, 14510), (124, 14522), (143, 14708), (146, 14750), (152, 14825), (154, 14831), (157, 14870), (164, 14957), (172, 15047), (180, 15095), (183, 15122), (186, 15158), (193, 15212), (203, 15293), (206, 15308), (218, 15377), (246, 15500), (250, 15536), (251, 15545), (264, 15605), (275, 15632),

Gene: Krampus_31 Start: 18685, Stop: 20463, Start Num: 71

Candidate Starts for Krampus_31:

(40, 18520), (60, 18646), (Start: 71 @18685 has 31 MA's), (87, 18787), (89, 18808), (96, 18850), (104, 18886), (113, 18973), (123, 19111), (131, 19201), (139, 19303), (151, 19438), (157, 19486), (162, 19567), (168, 19633), (172, 19663), (174, 19672), (179, 19708), (194, 19843), (198, 19894), (203, 19909), (210, 19945), (219, 19993), (247, 20128), (298, 20443),

Gene: Lahqtemish_18 Start: 13989, Stop: 15962, Start Num: 74

Candidate Starts for Lahqtemish_18:

(Start: 74 @13989 has 15 MA's), (107, 14202), (111, 14235), (115, 14286), (123, 14409), (124, 14421), (153, 14727), (155, 14760), (157, 14769), (178, 14988), (184, 15030), (197, 15165), (214, 15249), (230, 15342), (233, 15366), (240, 15387), (249, 15426), (272, 15552), (297, 15711), (300, 15735), (311, 15828), (312, 15831), (318, 15936),

Gene: Lesiram_23 Start: 15098, Stop: 16786, Start Num: 68

Candidate Starts for Lesiram_23:

(Start: 68 @15098 has 2 MA's), (95, 15245), (96, 15248), (124, 15527), (125, 15539), (129, 15593), (139, 15710), (140, 15713), (141, 15719), (148, 15785), (153, 15851), (160, 15935), (169, 16043), (172, 16067), (173, 16073), (177, 16103), (180, 16115), (184, 16151), (185, 16163), (186, 16178), (187, 16181), (189, 16205), (194, 16244), (196, 16265), (200, 16301), (215, 16364), (245, 16526), (267, 16661), (277, 16688), (281, 16712),

Gene: MortySmith_29 Start: 17815, Stop: 19581, Start Num: 71

Candidate Starts for MortySmith_29:

(Start: 71 @17815 has 31 MA's), (87, 17917), (96, 17980), (113, 18103), (114, 18106), (116, 18112), (123, 18241), (124, 18253), (151, 18565), (157, 18613), (172, 18790), (174, 18799), (179, 18835), (188, 18916), (198, 19021), (203, 19036), (210, 19072), (247, 19255), (271, 19384), (298, 19561),

Gene: NarutoRun_31 Start: 18678, Stop: 20456, Start Num: 71

Candidate Starts for NarutoRun_31:

(40, 18513), (59, 18636), (60, 18639), (Start: 71 @18678 has 31 MA's), (87, 18780), (89, 18801), (96, 18843), (104, 18879), (113, 18966), (123, 19104), (131, 19194), (139, 19296), (151, 19431), (157, 19479), (162, 19560), (168, 19626), (172, 19656), (174, 19665), (177, 19692), (179, 19701), (194, 19836), (198, 19887), (203, 19902), (210, 19938), (219, 19986), (247, 20121), (298, 20436),

Gene: Neptune_31 Start: 18655, Stop: 20433, Start Num: 71

Candidate Starts for Neptune_31:

(40, 18490), (60, 18616), (Start: 71 @18655 has 31 MA's), (87, 18757), (89, 18778), (96, 18820), (104, 18856), (113, 18943), (123, 19081), (131, 19171), (139, 19273), (150, 19399), (151, 19408), (157, 19456), (162, 19537), (168, 19603), (172, 19633), (174, 19642), (177, 19669), (179, 19678), (194, 19813), (198, 19864), (203, 19879), (210, 19915), (219, 19963), (238, 20059), (247, 20098), (298, 20413),

Gene: OhDear_31 Start: 18684, Stop: 20462, Start Num: 71

Candidate Starts for OhDear_31:

(40, 18519), (60, 18645), (Start: 71 @18684 has 31 MA's), (87, 18786), (89, 18807), (96, 18849), (104, 18885), (113, 18972), (123, 19110), (131, 19200), (139, 19302), (150, 19428), (151, 19437), (157, 19485), (162, 19566), (168, 19632), (172, 19662), (174, 19671), (177, 19698), (179, 19707), (194, 19842), (198, 19893), (203, 19908), (210, 19944), (219, 19992), (247, 20127), (298, 20442),

Gene: OverHedge_31 Start: 18645, Stop: 20423, Start Num: 71

Candidate Starts for OverHedge_31:

(40, 18480), (60, 18606), (Start: 71 @18645 has 31 MA's), (87, 18747), (89, 18768), (96, 18810), (104, 18846), (113, 18933), (123, 19071), (131, 19161), (139, 19263), (150, 19389), (151, 19398), (157, 19446), (162, 19527), (168, 19593), (172, 19623), (174, 19632), (177, 19659), (179, 19668), (194, 19803), (198, 19854), (203, 19869), (210, 19905), (219, 19953), (247, 20088), (298, 20403),

Gene: PastaFagioli_18 Start: 13977, Stop: 15950, Start Num: 74

Candidate Starts for PastaFagioli_18:

(Start: 74 @13977 has 15 MA's), (88, 14070), (107, 14190), (111, 14223), (115, 14274), (123, 14397), (124, 14409), (153, 14715), (155, 14748), (157, 14757), (178, 14976), (184, 15018), (197, 15153), (214, 15237), (230, 15330), (240, 15375), (249, 15414), (286, 15624), (292, 15654), (297, 15699), (300, 15723), (312, 15819), (318, 15924),

Gene: Pharpay_31 Start: 18700, Stop: 20478, Start Num: 71

Candidate Starts for Pharpay_31:

(40, 18535), (60, 18661), (Start: 71 @18700 has 31 MA's), (87, 18802), (89, 18823), (96, 18865), (104, 18901), (113, 18988), (123, 19126), (131, 19216), (151, 19453), (157, 19501), (162, 19582), (168, 19648), (172, 19678), (174, 19687), (179, 19723), (194, 19858), (198, 19909), (203, 19924), (210, 19960), (219, 20008), (238, 20104), (247, 20143), (298, 20458),

Gene: PhunaPhoke_31 Start: 18673, Stop: 20451, Start Num: 71

Candidate Starts for PhunaPhoke_31:

(40, 18508), (60, 18634), (Start: 71 @18673 has 31 MA's), (87, 18775), (89, 18796), (96, 18838), (104, 18874), (113, 18961), (123, 19099), (131, 19189), (139, 19291), (150, 19417), (151, 19426), (157, 19474), (162, 19555), (168, 19621), (172, 19651), (174, 19660), (177, 19687), (179, 19696), (194, 19831), (198, 19882), (203, 19897), (210, 19933), (219, 19981), (238, 20077), (247, 20116), (298, 20431),

Gene: Potty_31 Start: 18678, Stop: 20456, Start Num: 71

Candidate Starts for Potty_31:

(40, 18513), (60, 18639), (Start: 71 @18678 has 31 MA's), (87, 18780), (89, 18801), (96, 18843), (104, 18879), (113, 18966), (123, 19104), (131, 19194), (139, 19296), (151, 19431), (157, 19479), (162, 19560), (168, 19626), (172, 19656), (174, 19665), (179, 19701), (194, 19836), (198, 19887), (203, 19902), (210, 19938), (219, 19986), (247, 20121), (298, 20436),

Gene: Poultruss_30 Start: 18442, Stop: 20820, Start Num: 3

Candidate Starts for Poultruss_30:

(Start: 3 @18442 has 2 MA's), (12, 18637), (26, 18751), (31, 18808), (37, 18880), (56, 18994), (57, 18997), (61, 19018), (63, 19024), (87, 19156), (96, 19219), (113, 19342), (114, 19345), (116, 19351), (121, 19453), (123, 19480), (124, 19492), (134, 19633), (145, 19702), (151, 19804), (157, 19852), (163, 19936), (168, 19999), (172, 20029), (174, 20038), (177, 20065), (179, 20074), (185, 20128), (188, 20155), (198, 20260), (202, 20272), (203, 20275), (210, 20311), (219, 20359), (247, 20494), (271, 20623), (288, 20728), (297, 20788), (298, 20800),

Gene: Rachella_31 Start: 18681, Stop: 20459, Start Num: 71

Candidate Starts for Rachella_31:

(40, 18516), (60, 18642), (Start: 71 @18681 has 31 MA's), (87, 18783), (89, 18804), (96, 18846), (104, 18882), (113, 18969), (123, 19107), (131, 19197), (139, 19299), (151, 19434), (157, 19482), (162, 19563), (168, 19629), (172, 19659), (174, 19668), (177, 19695), (179, 19704), (194, 19839), (198, 19890), (203, 19905), (210, 19941), (219, 19989), (238, 20085), (247, 20124), (279, 20295), (298, 20439),

Gene: Rie18_31 Start: 18192, Stop: 19970, Start Num: 71

Candidate Starts for Rie18_31:

(62, 18162), (64, 18165), (66, 18177), (69, 18189), (Start: 71 @18192 has 31 MA's), (87, 18294), (96, 18357), (113, 18480), (123, 18618), (124, 18630), (131, 18708), (139, 18810), (151, 18945), (157, 18993), (163, 19077), (168, 19140), (172, 19170), (174, 19179), (177, 19206), (179, 19215), (188, 19296), (194, 19350), (198, 19401), (203, 19416), (219, 19500), (247, 19635), (260, 19725), (298, 19950),

Gene: Rollins_17 Start: 12526, Stop: 14229, Start Num: 74

Candidate Starts for Rollins_17:

(Start: 74 @12526 has 15 MA's), (81, 12574), (88, 12619), (108, 12742), (111, 12772), (123, 12946), (124, 12958), (153, 13264), (154, 13267), (164, 13393), (167, 13444), (172, 13483), (175, 13495), (178, 13525), (180, 13531), (184, 13567), (244, 13933), (258, 14023), (298, 14203), (299, 14206),

Gene: SilentWarrior_30 Start: 17848, Stop: 19617, Start Num: 71

Candidate Starts for SilentWarrior_30:

(Start: 71 @17848 has 31 MA's), (87, 17950), (96, 18013), (113, 18136), (114, 18139), (116, 18145), (123, 18274), (124, 18286), (145, 18499), (151, 18601), (157, 18649), (162, 18730), (168, 18796), (172, 18826), (174, 18835), (177, 18862), (179, 18871), (188, 18952), (194, 19006), (198, 19057), (203, 19072), (210, 19108), (219, 19156), (247, 19291), (271, 19420), (297, 19585), (298, 19597),

Gene: Skylord_17 Start: 12466, Stop: 14169, Start Num: 74

Candidate Starts for Skylord_17:

(Start: 74 @12466 has 15 MA's), (81, 12514), (88, 12559), (108, 12682), (111, 12712), (123, 12886), (153, 13204), (154, 13207), (164, 13333), (167, 13384), (172, 13423), (175, 13435), (178, 13465), (180, 13471), (182, 13489), (184, 13507), (199, 13654), (203, 13669), (204, 13678), (213, 13717), (244, 13873), (258, 13963), (298, 14143), (299, 14146),

Gene: Snakehole_31 Start: 17937, Stop: 19706, Start Num: 71

Candidate Starts for Snakehole_31:

(Start: 71 @17937 has 31 MA's), (87, 18039), (96, 18102), (113, 18225), (114, 18228), (116, 18234), (123, 18363), (124, 18375), (131, 18453), (138, 18543), (145, 18588), (151, 18690), (157, 18738), (168, 18885), (172, 18915), (174, 18924), (177, 18951), (179, 18960), (188, 19041), (194, 19095), (198, 19146), (203, 19161), (210, 19197), (236, 19335), (262, 19491), (271, 19509), (298, 19686),

Gene: Sweetums_22 Start: 15209, Stop: 16897, Start Num: 68

Candidate Starts for Sweetums_22:

(Start: 68 @15209 has 2 MA's), (95, 15356), (96, 15359), (119, 15521), (124, 15638), (125, 15650), (129, 15704), (139, 15821), (141, 15830), (148, 15896), (153, 15962), (160, 16046), (169, 16154), (172, 16178), (177, 16214), (180, 16226), (184, 16262), (185, 16274), (186, 16289), (187, 16292), (189, 16316), (194, 16355), (196, 16376), (200, 16412), (205, 16433), (216, 16490), (245, 16637), (252, 16688), (260, 16733), (269, 16778), (281, 16820),

Gene: Tedro_31 Start: 18151, Stop: 19929, Start Num: 71

Candidate Starts for Tedro_31:

(40, 17986), (60, 18112), (Start: 71 @18151 has 31 MA's), (87, 18253), (89, 18274), (96, 18316), (104, 18352), (113, 18439), (123, 18577), (131, 18667), (139, 18769), (150, 18895), (151, 18904), (157,

18952), (162, 19033), (168, 19099), (172, 19129), (174, 19138), (177, 19165), (179, 19174), (194, 19309), (198, 19360), (203, 19375), (210, 19411), (219, 19459), (238, 19555), (247, 19594), (279, 19765), (298, 19909),

Gene: Teng_24 Start: 15125, Stop: 16837, Start Num: 68

Candidate Starts for Teng_24:

(Start: 68 @15125 has 2 MA's), (95, 15272), (96, 15275), (110, 15341), (119, 15437), (126, 15581), (131, 15659), (132, 15677), (135, 15731), (139, 15764), (140, 15767), (141, 15773), (145, 15797), (148, 15839), (149, 15857), (153, 15905), (160, 15989), (162, 16028), (163, 16031), (169, 16097), (172, 16121), (177, 16157), (180, 16169), (185, 16217), (186, 16232), (187, 16235), (189, 16259), (191, 16274), (196, 16319), (201, 16358), (207, 16382), (216, 16433), (217, 16436), (228, 16490), (237, 16541), (239, 16547), (252, 16631), (261, 16688), (278, 16745),

Gene: Tongui_30 Start: 18184, Stop: 19953, Start Num: 70

Candidate Starts for Tongui_30:

(62, 18154), (64, 18157), (66, 18169), (69, 18181), (Start: 70 @18184 has 1 MA's), (78, 18217), (87, 18286), (96, 18349), (113, 18472), (116, 18481), (121, 18583), (123, 18610), (124, 18622), (151, 18937), (157, 18985), (168, 19132), (172, 19162), (174, 19171), (177, 19198), (179, 19207), (198, 19393), (205, 19420), (210, 19444), (223, 19513), (226, 19525), (234, 19573), (236, 19582), (247, 19627), (255, 19693), (298, 19933),

Gene: Vitas_17 Start: 12466, Stop: 14169, Start Num: 74

Candidate Starts for Vitas_17:

(Start: 74 @12466 has 15 MA's), (81, 12514), (88, 12559), (108, 12682), (111, 12712), (123, 12886), (124, 12898), (153, 13204), (154, 13207), (164, 13333), (167, 13384), (172, 13423), (175, 13435), (178, 13465), (180, 13471), (184, 13507), (246, 13879), (258, 13963), (298, 14143), (299, 14146),

Gene: Zeta1847_16 Start: 13524, Stop: 16088, Start Num: 1

Candidate Starts for Zeta1847_16:

(Start: 1 @13524 has 1 MA's), (6, 13632), (8, 13683), (28, 13923), (65, 14172), (67, 14187), (72, 14199), (75, 14217), (100, 14394), (123, 14664), (130, 14733), (140, 14844), (148, 14916), (153, 14982), (165, 15132), (225, 15552), (266, 15765), (274, 15792), (303, 15969),