

Pham 296657

1: Franklin22_18				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
2: Gack_17				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
3: Shayna_17 + 1				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
4: FlameThrower_17				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
5: Katastrophic_17				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
6: Eden_17				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
7: Haunter_31				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
8: MortySmith_29				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
9: Artiphact_31 + 1				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
10: Tedro_31				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
11: JingleBells_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
12: Tongui_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
13: Snakehole_31 + 3				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
14: Cybele_31 + 2				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
15: Kate_31 + 2				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
16: Crestdrop_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
17: AnnaSerena_31				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
18: Annapurna_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
19: CoolCookie_31 + 2				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
20: Erudite_30 + 1				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
21: Rie18_31				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
22: Hager_32				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
23: NarutoRun_31 + 1				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
24: Gilda_31				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
25: JDawG_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
26: SilentWarrior_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
27: Karate_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
28: Rachella_31				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
29: FountainFog_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
30: DannyDe_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
31: Poultress_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
32: Aesir_30				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
33: Honk_16				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
34: Sweetums_22				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
35: DelaGarza_22				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
36: Teng_24				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237
37: Lesiram_23				18		62	68	72	71	84	88	92		108	114	119	123	129	134	138	151		165	170	178	183	191	204		218	225	233	234	237

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 296657 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296657 has 50 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Franklin22_18
- Track 2 : Gack_17
- Track 3 : Shayna_17, SunnyD_17
- Track 4 : FlameThrower_17
- Track 5 : Katzastrophic_17
- Track 6 : Eden_17
- Track 7 : Haunter_31
- Track 8 : MortySmith_29
- Track 9 : Artiphact_31, Pharpay_31
- Track 10 : Tedro_31
- Track 11 : JingleBells_30
- Track 12 : Tongui_30
- Track 13 : Snakehole_31, Chivey_30, Hiddenleaf_30, FreddieHg_30
- Track 14 : Cybele_31, Neptune_31, PhunaPhoke_31
- Track 15 : Kate_31, OverHedge_31, OhDear_31
- Track 16 : Crestdrop_30
- Track 17 : AnnaSerena_31
- Track 18 : Annapurna_30
- Track 19 : CoolCookie_31, Potty_31, Krampus_31
- Track 20 : Erudite_30, Dauntless_30
- Track 21 : Rie18_31
- Track 22 : Hager_32
- Track 23 : NarutoRun_31, Anakin_31
- Track 24 : Gilda_31
- Track 25 : JDawG_30
- Track 26 : SilentWarrior_30
- Track 27 : Karate_30
- Track 28 : Rachella_31
- Track 29 : FountainFog_30
- Track 30 : DannyDe_30
- Track 31 : Poultruss_30
- Track 32 : Aesir_30
- Track 33 : Honk_16
- Track 34 : Sweetums_22
- Track 35 : DelaGarza_22
- Track 36 : Teng_24
- Track 37 : 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 47, it was called in 32 of the 45 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:

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

- DelaGarza_22, Eden_17, FlameThrower_17, FountainFog_30, Franklin22_18, Gack_17, Honk_16, Karate_30, Katzastrophic_17, Lesiram_23, Poultruss_30, Shayna_17, SunnyD_17, Sweetums_22, Teng_24, Tongui_30,

Summary by start number:

Start 2:

- Found in 2 of 50 (4.0%) of genes in pham
- Manual Annotations of this start: 2 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Karate_30 (EF), Poultruss_30 (EF),

Start 3:

- Found in 2 of 50 (4.0%) of genes in pham
- Manual Annotations of this start: 2 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FlameThrower_17 (EB), Katzastrophic_17 (EB),

Start 46:

- Found in 2 of 50 (4.0%) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FountainFog_30 (EF), Tongui_30 (EF),

Start 47:

- Found in 34 of 50 (68.0%) of genes in pham
- Manual Annotations of this start: 32 of 45
- 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 48:

- Found in 3 of 50 (6.0%) of genes in pham
- Manual Annotations of this start: 3 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Eden_17 (EB), Franklin22_18 (EB), Gack_17 (EB),

Start 49:

- Found in 2 of 50 (4.0%) of genes in pham
- Manual Annotations of this start: 2 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shayna_17 (EB), SunnyD_17 (EB),

Start 51:

- Found in 4 of 50 (8.0%) of genes in pham
- Manual Annotations of this start: 2 of 45
- 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 52:

- Found in 1 of 50 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Honk_16 (EH),

Summary by clusters:

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

Info for manual annotations of cluster EB:

- Start number 3 was manually annotated 2 times for cluster EB.
- Start number 48 was manually annotated 3 times for cluster EB.
- Start number 49 was manually annotated 2 times for cluster EB.

Info for manual annotations of cluster EF:

- Start number 2 was manually annotated 2 times for cluster EF.
- Start number 46 was manually annotated 1 time for cluster EF.
- Start number 47 was manually annotated 32 times for cluster EF.

Info for manual annotations of cluster EH:

- Start number 52 was manually annotated 1 time for cluster EH.

Info for manual annotations of cluster GF:

- Start number 51 was manually annotated 2 times for cluster GF.

Gene Information:

Gene: Aesir_30 Start: 18424, Stop: 20193, Start Num: 47

Candidate Starts for Aesir_30:

(31, 18337), (33, 18355), (Start: 47 @18424 has 32 MA's), (58, 18526), (67, 18589), (79, 18712), (80, 18715), (82, 18721), (88, 18850), (89, 18862), (108, 19075), (114, 19177), (118, 19219), (119, 19225), (124, 19306), (130, 19372), (134, 19402), (136, 19411), (138, 19438), (140, 19447), (147, 19528), (152, 19582), (155, 19633), (159, 19648), (167, 19684), (190, 19867), (208, 19996), (221, 20122), (227, 20161), (229, 20173),

Gene: Anakin_31 Start: 18678, Stop: 20456, Start Num: 47

Candidate Starts for Anakin_31:

(23, 18513), (38, 18636), (39, 18639), (Start: 47 @18678 has 32 MA's), (58, 18780), (61, 18801), (67, 18843), (73, 18879), (79, 18966), (88, 19104), (95, 19194), (103, 19296), (114, 19431), (119, 19479), (124, 19560), (130, 19626), (134, 19656), (136, 19665), (138, 19692), (140, 19701), (152, 19836), (155, 19887), (159, 19902), (167, 19938), (173, 19986), (190, 20121), (229, 20436),

Gene: AnnaSerena_31 Start: 18687, Stop: 20465, Start Num: 47

Candidate Starts for AnnaSerena_31:

(23, 18522), (39, 18648), (Start: 47 @18687 has 32 MA's), (58, 18789), (61, 18810), (63, 18831), (67, 18852), (73, 18888), (79, 18975), (88, 19113), (95, 19203), (103, 19305), (114, 19440), (119, 19488), (124, 19569), (130, 19635), (134, 19665), (136, 19674), (138, 19701), (140, 19710), (152, 19845), (155, 19896), (159, 19911), (167, 19947), (173, 19995), (190, 20130), (216, 20316), (229, 20445),

Gene: Annapurna_30 Start: 17886, Stop: 19655, Start Num: 47

Candidate Starts for Annapurna_30:

(Start: 47 @17886 has 32 MA's), (58, 17988), (67, 18051), (79, 18174), (80, 18177), (82, 18183), (88, 18312), (89, 18324), (108, 18537), (114, 18639), (119, 18687), (124, 18768), (130, 18834), (134, 18864), (136, 18873), (138, 18900), (140, 18909), (147, 18990), (152, 19044), (155, 19095), (159, 19110), (167, 19146), (173, 19194), (190, 19329), (208, 19458), (227, 19623), (229, 19635),

Gene: Artiphact_31 Start: 18679, Stop: 20457, Start Num: 47

Candidate Starts for Artiphact_31:

(23, 18514), (39, 18640), (Start: 47 @18679 has 32 MA's), (58, 18781), (61, 18802), (67, 18844), (73, 18880), (79, 18967), (88, 19105), (95, 19195), (114, 19432), (119, 19480), (124, 19561), (130, 19627), (134, 19657), (136, 19666), (140, 19702), (152, 19837), (155, 19888), (159, 19903), (167, 19939), (173, 19987), (185, 20083), (190, 20122), (229, 20437),

Gene: Chivey_30 Start: 17840, Stop: 19609, Start Num: 47

Candidate Starts for Chivey_30:

(Start: 47 @17840 has 32 MA's), (58, 17942), (67, 18005), (79, 18128), (80, 18131), (82, 18137), (88, 18266), (89, 18278), (95, 18356), (102, 18446), (108, 18491), (114, 18593), (119, 18641), (130, 18788), (134, 18818), (136, 18827), (138, 18854), (140, 18863), (147, 18944), (152, 18998), (155, 19049), (159, 19064), (167, 19100), (183, 19238), (205, 19394), (208, 19412), (229, 19589),

Gene: CoolCookie_31 Start: 18685, Stop: 20463, Start Num: 47

Candidate Starts for CoolCookie_31:

(23, 18520), (39, 18646), (Start: 47 @18685 has 32 MA's), (58, 18787), (61, 18808), (67, 18850), (73, 18886), (79, 18973), (88, 19111), (95, 19201), (103, 19303), (114, 19438), (119, 19486), (124, 19567), (130, 19633), (134, 19663), (136, 19672), (140, 19708), (152, 19843), (155, 19894), (159, 19909), (167, 19945), (173, 19993), (190, 20128), (229, 20443),

Gene: Crestdrop_30 Start: 17749, Stop: 19518, Start Num: 47

Candidate Starts for Crestdrop_30:

(33, 17680), (Start: 47 @17749 has 32 MA's), (58, 17851), (67, 17914), (79, 18037), (80, 18040), (82, 18046), (88, 18175), (89, 18187), (108, 18400), (114, 18502), (119, 18550), (124, 18631), (130, 18697), (134, 18727), (136, 18736), (138, 18763), (140, 18772), (147, 18853), (152, 18907), (155, 18958), (159, 18973), (167, 19009), (173, 19057), (208, 19321), (227, 19486), (229, 19498),

Gene: Cybele_31 Start: 18655, Stop: 20433, Start Num: 47

Candidate Starts for Cybele_31:

(23, 18490), (39, 18616), (Start: 47 @18655 has 32 MA's), (58, 18757), (61, 18778), (67, 18820), (73, 18856), (79, 18943), (88, 19081), (95, 19171), (103, 19273), (113, 19399), (114, 19408), (119, 19456), (124, 19537), (130, 19603), (134, 19633), (136, 19642), (138, 19669), (140, 19678), (152, 19813), (155, 19864), (159, 19879), (167, 19915), (173, 19963), (185, 20059), (190, 20098), (229, 20413),

Gene: DannyDe_30 Start: 17832, Stop: 19601, Start Num: 47

Candidate Starts for DannyDe_30:

(33, 17763), (Start: 47 @17832 has 32 MA's), (58, 17934), (67, 17997), (79, 18120), (80, 18123), (82, 18129), (88, 18258), (89, 18270), (108, 18483), (114, 18585), (119, 18633), (124, 18714), (128, 18750), (130, 18780), (134, 18810), (136, 18819), (138, 18846), (140, 18855), (147, 18936), (152, 18990), (155, 19041), (159, 19056), (167, 19092), (173, 19140), (190, 19275), (208, 19404), (227, 19569), (229, 19581),

Gene: Dauntless_30 Start: 18392, Stop: 20161, Start Num: 47

Candidate Starts for Dauntless_30:

(Start: 47 @18392 has 32 MA's), (58, 18494), (67, 18557), (79, 18680), (80, 18683), (82, 18689), (88, 18818), (89, 18830), (108, 19043), (114, 19145), (119, 19193), (124, 19274), (130, 19340), (134, 19370), (136, 19379), (138, 19406), (140, 19415), (147, 19496), (152, 19550), (155, 19601), (159, 19616), (167, 19652), (208, 19964), (221, 20090), (227, 20129), (229, 20141),

Gene: DelaGarza_22 Start: 15128, Stop: 16816, Start Num: 51

Candidate Starts for DelaGarza_22:

(Start: 51 @15128 has 2 MA's), (66, 15275), (67, 15278), (85, 15440), (89, 15557), (90, 15569), (93, 15623), (100, 15710), (103, 15740), (105, 15749), (111, 15815), (116, 15881), (122, 15965), (131, 16073), (134, 16097), (138, 16133), (141, 16145), (143, 16181), (144, 16193), (145, 16208), (146, 16211), (148, 16235), (152, 16274), (154, 16295), (156, 16331), (161, 16352), (171, 16409), (189, 16556), (195, 16607), (201, 16652), (209, 16697), (214, 16721), (216, 16739),

Gene: Eden_17 Start: 12590, Stop: 14578, Start Num: 48

Candidate Starts for Eden_17:

(Start: 48 @12590 has 3 MA's), (62, 12713), (75, 12791), (77, 12833), (84, 12908), (88, 13007), (116, 13325), (117, 13328), (129, 13505), (134, 13544), (139, 13586), (143, 13628), (145, 13655), (151, 13709), (153, 13730), (160, 13790), (163, 13799), (175, 13877), (178, 13892), (187, 13976), (188, 13979), (191, 14000), (194, 14015), (217, 14192), (218, 14198), (222, 14240), (223, 14249), (224, 14252), (233, 14360), (235, 14417), (237, 14552),

Gene: Erudite_30 Start: 18392, Stop: 20161, Start Num: 47

Candidate Starts for Erudite_30:

(Start: 47 @18392 has 32 MA's), (58, 18494), (67, 18557), (79, 18680), (80, 18683), (82, 18689), (88, 18818), (89, 18830), (108, 19043), (114, 19145), (119, 19193), (124, 19274), (130, 19340), (134, 19370), (136, 19379), (138, 19406), (140, 19415), (147, 19496), (152, 19550), (155, 19601), (159, 19616), (167, 19652), (208, 19964), (221, 20090), (227, 20129), (229, 20141),

Gene: FlameThrower_17 Start: 13345, Stop: 15654, Start Num: 3

Candidate Starts for FlameThrower_17:

(Start: 3 @13345 has 2 MA's), (4, 13411), (5, 13474), (13, 13600), (15, 13612), (17, 13642), (21, 13687), (25, 13762), (26, 13780), (27, 13786), (30, 13825), (37, 13870), (56, 13957), (57, 13996), (60, 14026), (77, 14194), (88, 14368), (89, 14380), (106, 14566), (109, 14608), (115, 14683), (117, 14689), (119, 14728), (126, 14815), (134, 14905), (141, 14953), (142, 14980), (145, 15016), (151, 15070), (160, 15151), (165, 15166), (174, 15235), (193, 15358), (197, 15394), (199, 15403), (207, 15463), (213, 15490),

Gene: FountainFog_30 Start: 17995, Stop: 19764, Start Num: 46

Candidate Starts for FountainFog_30:

(41, 17965), (43, 17968), (44, 17980), (45, 17992), (Start: 46 @17995 has 1 MA's), (58, 18097), (67, 18160), (79, 18283), (82, 18292), (86, 18394), (88, 18421), (89, 18433), (97, 18532), (114, 18748), (119, 18796), (125, 18880), (130, 18943), (134, 18973), (136, 18982), (140, 19018), (155, 19204), (159, 19219), (167, 19255), (182, 19384), (208, 19567), (229, 19744),

Gene: Franklin22_18 Start: 12769, Stop: 14757, Start Num: 48

Candidate Starts for Franklin22_18:

(Start: 48 @12769 has 3 MA's), (62, 12892), (68, 12922), (72, 12955), (77, 13015), (84, 13090), (87, 13186), (88, 13189), (92, 13234), (108, 13399), (114, 13501), (117, 13510), (119, 13549), (123, 13603), (129, 13687), (134, 13726), (139, 13768), (151, 13891), (168, 14014), (170, 14020), (175, 14059), (178, 14074), (187, 14158), (188, 14161), (191, 14182), (204, 14269), (222, 14419), (223, 14428), (225, 14437), (233, 14539), (234, 14581), (237, 14731),

Gene: FreddieHg_30 Start: 17856, Stop: 19625, Start Num: 47

Candidate Starts for FreddieHg_30:

(Start: 47 @17856 has 32 MA's), (58, 17958), (67, 18021), (79, 18144), (80, 18147), (82, 18153), (88, 18282), (89, 18294), (95, 18372), (102, 18462), (108, 18507), (114, 18609), (119, 18657), (130, 18804), (134, 18834), (136, 18843), (138, 18870), (140, 18879), (147, 18960), (152, 19014), (155, 19065), (159, 19080), (167, 19116), (183, 19254), (205, 19410), (208, 19428), (229, 19605),

Gene: Gack_17 Start: 12658, Stop: 14643, Start Num: 48

Candidate Starts for Gack_17:

(29, 12544), (Start: 48 @12658 has 3 MA's), (75, 12859), (77, 12901), (78, 12913), (84, 12976), (88, 13075), (89, 13087), (105, 13261), (107, 13276), (116, 13393), (117, 13396), (119, 13435), (121, 13468), (129, 13573), (132, 13591), (134, 13612), (139, 13654), (151, 13777), (165, 13873), (170, 13906), (175, 13945), (178, 13960), (188, 14047), (191, 14068), (194, 14083), (202, 14146), (203, 14152), (204, 14155), (211, 14209), (222, 14305), (233, 14425), (235, 14482), (237, 14617),

Gene: Gilda_31 Start: 18679, Stop: 20457, Start Num: 47

Candidate Starts for Gilda_31:

(23, 18514), (39, 18640), (Start: 47 @18679 has 32 MA's), (58, 18781), (61, 18802), (67, 18844), (73, 18880), (79, 18967), (88, 19105), (95, 19195), (103, 19297), (114, 19432), (119, 19480), (124, 19561), (130, 19627), (134, 19657), (136, 19666), (138, 19693), (140, 19702), (152, 19837), (155, 19888), (159, 19903), (167, 19939), (173, 19987), (185, 20083), (190, 20122), (229, 20437),

Gene: Hager_32 Start: 18239, Stop: 20017, Start Num: 47

Candidate Starts for Hager_32:

(41, 18209), (43, 18212), (44, 18224), (45, 18236), (Start: 47 @18239 has 32 MA's), (58, 18341), (67, 18404), (79, 18527), (87, 18662), (88, 18665), (89, 18677), (95, 18755), (103, 18857), (114, 18992), (119, 19040), (120, 19049), (130, 19187), (134, 19217), (136, 19226), (138, 19253), (140, 19262), (152, 19397), (155, 19448), (159, 19463), (173, 19547), (190, 19682), (229, 19997),

Gene: Haunter_31 Start: 18092, Stop: 19870, Start Num: 47

Candidate Starts for Haunter_31:

(39, 18053), (Start: 47 @18092 has 32 MA's), (58, 18194), (61, 18215), (67, 18257), (73, 18293), (79, 18380), (88, 18518), (95, 18608), (103, 18710), (114, 18845), (119, 18893), (124, 18974), (130, 19040), (134, 19070), (136, 19079), (138, 19106), (140, 19115), (152, 19250), (155, 19301), (159, 19316), (167, 19352), (185, 19496), (190, 19535), (215, 19706), (229, 19850),

Gene: Hiddenleaf_30 Start: 17840, Stop: 19609, Start Num: 47

Candidate Starts for Hiddenleaf_30:

(Start: 47 @17840 has 32 MA's), (58, 17942), (67, 18005), (79, 18128), (80, 18131), (82, 18137), (88, 18266), (89, 18278), (95, 18356), (102, 18446), (108, 18491), (114, 18593), (119, 18641), (130, 18788), (134, 18818), (136, 18827), (138, 18854), (140, 18863), (147, 18944), (152, 18998), (155, 19049), (159, 19064), (167, 19100), (183, 19238), (205, 19394), (208, 19412), (229, 19589),

Gene: Honk_16 Start: 12148, Stop: 14262, Start Num: 52

Candidate Starts for Honk_16:

(Start: 52 @12148 has 1 MA's), (64, 12286), (70, 12322), (88, 12580), (94, 12649), (101, 12733), (104, 12760), (110, 12826), (116, 12898), (127, 13054), (131, 13093), (133, 13108), (138, 13153), (150, 13279), (154, 13315), (166, 13405), (176, 13483), (191, 13627), (192, 13633), (196, 13684), (200, 13711), (206, 13762), (210, 13789), (226, 13927), (228, 13948), (230, 13987), (232, 14038), (236, 14188),

Gene: JDawG_30 Start: 18422, Stop: 20188, Start Num: 47

Candidate Starts for JDawG_30:

(Start: 47 @18422 has 32 MA's), (58, 18524), (67, 18587), (76, 18647), (79, 18710), (80, 18713), (82, 18719), (88, 18848), (89, 18860), (114, 19172), (119, 19220), (134, 19397), (136, 19406), (140, 19442), (147, 19523), (152, 19577), (155, 19628), (159, 19643), (167, 19679), (173, 19727), (190, 19862), (208, 19991), (221, 20117), (227, 20156), (229, 20168),

Gene: JingleBells_30 Start: 17956, Stop: 19725, Start Num: 47

Candidate Starts for JingleBells_30:

(33, 17887), (Start: 47 @17956 has 32 MA's), (58, 18058), (67, 18121), (79, 18244), (80, 18247), (82, 18253), (88, 18382), (89, 18394), (108, 18607), (114, 18709), (119, 18757), (124, 18838), (130, 18904), (134, 18934), (136, 18943), (138, 18970), (140, 18979), (147, 19060), (152, 19114), (155, 19165), (159, 19180), (167, 19216), (208, 19528), (221, 19654), (227, 19693), (229, 19705),

Gene: Karate_30 Start: 18091, Stop: 20484, Start Num: 2

Candidate Starts for Karate_30:

(1, 18049), (Start: 2 @18091 has 2 MA's), (6, 18280), (8, 18301), (9, 18307), (10, 18340), (11, 18346), (19, 18466), (22, 18532), (25, 18556), (28, 18583), (32, 18625), (36, 18652), (40, 18670), (42, 18676), (58, 18808), (67, 18871), (79, 18994), (82, 19003), (86, 19105), (88, 19132), (103, 19321), (114, 19456), (119, 19504), (130, 19651), (134, 19681), (136, 19690), (138, 19717), (140, 19726), (144, 19780), (147, 19807), (152, 19861), (155, 19912), (159, 19927), (165, 19960), (167, 19975), (183, 20113), (190, 20158), (208, 20287), (229, 20464),

Gene: Kate_31 Start: 18687, Stop: 20465, Start Num: 47

Candidate Starts for Kate_31:

(23, 18522), (39, 18648), (Start: 47 @18687 has 32 MA's), (58, 18789), (61, 18810), (67, 18852), (73, 18888), (79, 18975), (88, 19113), (95, 19203), (103, 19305), (113, 19431), (114, 19440), (119, 19488), (124, 19569), (130, 19635), (134, 19665), (136, 19674), (138, 19701), (140, 19710), (152, 19845), (155, 19896), (159, 19911), (167, 19947), (173, 19995), (190, 20130), (229, 20445),

Gene: Katzastrophic_17 Start: 13520, Stop: 15796, Start Num: 3

Candidate Starts for Katzastrophic_17:

(Start: 3 @13520 has 2 MA's), (4, 13586), (5, 13649), (12, 13772), (16, 13805), (20, 13847), (24, 13910), (30, 13976), (32, 13982), (55, 14102), (59, 14159), (65, 14219), (69, 14237), (71, 14264), (77, 14336), (81, 14387), (83, 14399), (88, 14510), (89, 14522), (106, 14708), (109, 14750), (115, 14825), (117, 14831), (119, 14870), (126, 14957), (134, 15047), (141, 15095), (142, 15122), (145, 15158), (151, 15212), (160, 15293), (165, 15308), (174, 15377), (193, 15500), (197, 15536), (199, 15545), (207, 15605), (213, 15632),

Gene: Krampus_31 Start: 18685, Stop: 20463, Start Num: 47

Candidate Starts for Krampus_31:

(23, 18520), (39, 18646), (Start: 47 @18685 has 32 MA's), (58, 18787), (61, 18808), (67, 18850), (73, 18886), (79, 18973), (88, 19111), (95, 19201), (103, 19303), (114, 19438), (119, 19486), (124, 19567), (130, 19633), (134, 19663), (136, 19672), (140, 19708), (152, 19843), (155, 19894), (159, 19909), (167, 19945), (173, 19993), (190, 20128), (229, 20443),

Gene: Lesiram_23 Start: 15098, Stop: 16786, Start Num: 51

Candidate Starts for Lesiram_23:

(Start: 51 @15098 has 2 MA's), (66, 15245), (67, 15248), (89, 15527), (90, 15539), (93, 15593), (103, 15710), (104, 15713), (105, 15719), (111, 15785), (116, 15851), (122, 15935), (131, 16043), (134, 16067), (135, 16073), (138, 16103), (141, 16115), (143, 16151), (144, 16163), (145, 16178), (146, 16181), (148, 16205), (152, 16244), (154, 16265), (156, 16301), (169, 16364), (189, 16526), (208, 16661), (212, 16688), (216, 16712),

Gene: MortySmith_29 Start: 17815, Stop: 19581, Start Num: 47

Candidate Starts for MortySmith_29:

(Start: 47 @17815 has 32 MA's), (58, 17917), (67, 17980), (79, 18103), (80, 18106), (82, 18112), (88, 18241), (89, 18253), (114, 18565), (119, 18613), (134, 18790), (136, 18799), (140, 18835), (147, 18916), (155, 19021), (159, 19036), (167, 19072), (190, 19255), (208, 19384), (229, 19561),

Gene: NarutoRun_31 Start: 18678, Stop: 20456, Start Num: 47

Candidate Starts for NarutoRun_31:

(23, 18513), (38, 18636), (39, 18639), (Start: 47 @18678 has 32 MA's), (58, 18780), (61, 18801), (67, 18843), (73, 18879), (79, 18966), (88, 19104), (95, 19194), (103, 19296), (114, 19431), (119, 19479), (124, 19560), (130, 19626), (134, 19656), (136, 19665), (138, 19692), (140, 19701), (152, 19836), (155, 19887), (159, 19902), (167, 19938), (173, 19986), (190, 20121), (229, 20436),

Gene: Neptune_31 Start: 18655, Stop: 20433, Start Num: 47

Candidate Starts for Neptune_31:

(23, 18490), (39, 18616), (Start: 47 @18655 has 32 MA's), (58, 18757), (61, 18778), (67, 18820), (73, 18856), (79, 18943), (88, 19081), (95, 19171), (103, 19273), (113, 19399), (114, 19408), (119, 19456), (124, 19537), (130, 19603), (134, 19633), (136, 19642), (138, 19669), (140, 19678), (152, 19813), (155, 19864), (159, 19879), (167, 19915), (173, 19963), (185, 20059), (190, 20098), (229, 20413),

Gene: OhDear_31 Start: 18684, Stop: 20462, Start Num: 47

Candidate Starts for OhDear_31:

(23, 18519), (39, 18645), (Start: 47 @18684 has 32 MA's), (58, 18786), (61, 18807), (67, 18849), (73, 18885), (79, 18972), (88, 19110), (95, 19200), (103, 19302), (113, 19428), (114, 19437), (119, 19485), (124, 19566), (130, 19632), (134, 19662), (136, 19671), (138, 19698), (140, 19707), (152, 19842), (155, 19893), (159, 19908), (167, 19944), (173, 19992), (190, 20127), (229, 20442),

Gene: OverHedge_31 Start: 18645, Stop: 20423, Start Num: 47

Candidate Starts for OverHedge_31:

(23, 18480), (39, 18606), (Start: 47 @18645 has 32 MA's), (58, 18747), (61, 18768), (67, 18810), (73, 18846), (79, 18933), (88, 19071), (95, 19161), (103, 19263), (113, 19389), (114, 19398), (119, 19446), (124, 19527), (130, 19593), (134, 19623), (136, 19632), (138, 19659), (140, 19668), (152, 19803), (155, 19854), (159, 19869), (167, 19905), (173, 19953), (190, 20088), (229, 20403),

Gene: Pharpay_31 Start: 18700, Stop: 20478, Start Num: 47

Candidate Starts for Pharpay_31:

(23, 18535), (39, 18661), (Start: 47 @18700 has 32 MA's), (58, 18802), (61, 18823), (67, 18865), (73, 18901), (79, 18988), (88, 19126), (95, 19216), (114, 19453), (119, 19501), (124, 19582), (130, 19648), (134, 19678), (136, 19687), (140, 19723), (152, 19858), (155, 19909), (159, 19924), (167, 19960), (173, 20008), (185, 20104), (190, 20143), (229, 20458),

Gene: PhunaPhoke_31 Start: 18673, Stop: 20451, Start Num: 47

Candidate Starts for PhunaPhoke_31:

(23, 18508), (39, 18634), (Start: 47 @18673 has 32 MA's), (58, 18775), (61, 18796), (67, 18838), (73, 18874), (79, 18961), (88, 19099), (95, 19189), (103, 19291), (113, 19417), (114, 19426), (119, 19474), (124, 19555), (130, 19621), (134, 19651), (136, 19660), (138, 19687), (140, 19696), (152, 19831), (155, 19882), (159, 19897), (167, 19933), (173, 19981), (185, 20077), (190, 20116), (229, 20431),

Gene: Potty_31 Start: 18678, Stop: 20456, Start Num: 47

Candidate Starts for Potty_31:

(23, 18513), (39, 18639), (Start: 47 @18678 has 32 MA's), (58, 18780), (61, 18801), (67, 18843), (73, 18879), (79, 18966), (88, 19104), (95, 19194), (103, 19296), (114, 19431), (119, 19479), (124, 19560), (130, 19626), (134, 19656), (136, 19665), (140, 19701), (152, 19836), (155, 19887), (159, 19902), (167, 19938), (173, 19986), (190, 20121), (229, 20436),

Gene: Poultruss_30 Start: 18442, Stop: 20820, Start Num: 2

Candidate Starts for Poultruss_30:

(Start: 2 @18442 has 2 MA's), (7, 18637), (14, 18751), (18, 18808), (22, 18880), (34, 18994), (35, 18997), (40, 19018), (42, 19024), (58, 19156), (67, 19219), (79, 19342), (80, 19345), (82, 19351), (86, 19453), (88, 19480), (89, 19492), (98, 19633), (108, 19702), (114, 19804), (119, 19852), (125, 19936), (130, 19999), (134, 20029), (136, 20038), (138, 20065), (140, 20074), (144, 20128), (147, 20155), (155, 20260), (158, 20272), (159, 20275), (167, 20311), (173, 20359), (190, 20494), (208, 20623), (219, 20728), (227, 20788), (229, 20800),

Gene: Rachella_31 Start: 18681, Stop: 20459, Start Num: 47

Candidate Starts for Rachella_31:

(23, 18516), (39, 18642), (Start: 47 @18681 has 32 MA's), (58, 18783), (61, 18804), (67, 18846), (73, 18882), (79, 18969), (88, 19107), (95, 19197), (103, 19299), (114, 19434), (119, 19482), (124, 19563), (130, 19629), (134, 19659), (136, 19668), (138, 19695), (140, 19704), (152, 19839), (155, 19890), (159, 19905), (167, 19941), (173, 19989), (185, 20085), (190, 20124), (215, 20295), (229, 20439),

Gene: Rie18_31 Start: 18192, Stop: 19970, Start Num: 47

Candidate Starts for Rie18_31:

(41, 18162), (43, 18165), (44, 18177), (45, 18189), (Start: 47 @18192 has 32 MA's), (58, 18294), (67, 18357), (79, 18480), (88, 18618), (89, 18630), (95, 18708), (103, 18810), (114, 18945), (119, 18993), (125, 19077), (130, 19140), (134, 19170), (136, 19179), (138, 19206), (140, 19215), (147, 19296), (152, 19350), (155, 19401), (159, 19416), (173, 19500), (190, 19635), (201, 19725), (229, 19950),

Gene: Shayna_17 Start: 13717, Stop: 15447, Start Num: 49

Candidate Starts for Shayna_17:

(Start: 49 @13717 has 2 MA's), (50, 13720), (53, 13741), (54, 13759), (74, 13918), (77, 13948), (78, 13960), (88, 14122), (92, 14167), (137, 14692), (181, 15013), (220, 15313), (223, 15337), (231,

15409),

Gene: SilentWarrior_30 Start: 17848, Stop: 19617, Start Num: 47

Candidate Starts for SilentWarrior_30:

(Start: 47 @17848 has 32 MA's), (58, 17950), (67, 18013), (79, 18136), (80, 18139), (82, 18145), (88, 18274), (89, 18286), (108, 18499), (114, 18601), (119, 18649), (124, 18730), (130, 18796), (134, 18826), (136, 18835), (138, 18862), (140, 18871), (147, 18952), (152, 19006), (155, 19057), (159, 19072), (167, 19108), (173, 19156), (190, 19291), (208, 19420), (227, 19585), (229, 19597),

Gene: Snakehole_31 Start: 17937, Stop: 19706, Start Num: 47

Candidate Starts for Snakehole_31:

(Start: 47 @17937 has 32 MA's), (58, 18039), (67, 18102), (79, 18225), (80, 18228), (82, 18234), (88, 18363), (89, 18375), (95, 18453), (102, 18543), (108, 18588), (114, 18690), (119, 18738), (130, 18885), (134, 18915), (136, 18924), (138, 18951), (140, 18960), (147, 19041), (152, 19095), (155, 19146), (159, 19161), (167, 19197), (183, 19335), (205, 19491), (208, 19509), (229, 19686),

Gene: SunnyD_17 Start: 13717, Stop: 15447, Start Num: 49

Candidate Starts for SunnyD_17:

(Start: 49 @13717 has 2 MA's), (50, 13720), (53, 13741), (54, 13759), (74, 13918), (77, 13948), (78, 13960), (88, 14122), (92, 14167), (137, 14692), (181, 15013), (220, 15313), (223, 15337), (231, 15409),

Gene: Sweetums_22 Start: 15209, Stop: 16897, Start Num: 51

Candidate Starts for Sweetums_22:

(Start: 51 @15209 has 2 MA's), (66, 15356), (67, 15359), (85, 15521), (89, 15638), (90, 15650), (93, 15704), (103, 15821), (105, 15830), (111, 15896), (116, 15962), (122, 16046), (131, 16154), (134, 16178), (138, 16214), (141, 16226), (143, 16262), (144, 16274), (145, 16289), (146, 16292), (148, 16316), (152, 16355), (154, 16376), (156, 16412), (161, 16433), (171, 16490), (189, 16637), (195, 16688), (201, 16733), (209, 16778), (216, 16820),

Gene: Tedro_31 Start: 18151, Stop: 19929, Start Num: 47

Candidate Starts for Tedro_31:

(23, 17986), (39, 18112), (Start: 47 @18151 has 32 MA's), (58, 18253), (61, 18274), (67, 18316), (73, 18352), (79, 18439), (88, 18577), (95, 18667), (103, 18769), (113, 18895), (114, 18904), (119, 18952), (124, 19033), (130, 19099), (134, 19129), (136, 19138), (138, 19165), (140, 19174), (152, 19309), (155, 19360), (159, 19375), (167, 19411), (173, 19459), (185, 19555), (190, 19594), (215, 19765), (229, 19909),

Gene: Teng_24 Start: 15125, Stop: 16837, Start Num: 51

Candidate Starts for Teng_24:

(Start: 51 @15125 has 2 MA's), (66, 15272), (67, 15275), (76, 15341), (85, 15437), (91, 15581), (95, 15659), (96, 15677), (99, 15731), (103, 15764), (104, 15767), (105, 15773), (108, 15797), (111, 15839), (112, 15857), (116, 15905), (122, 15989), (124, 16028), (125, 16031), (131, 16097), (134, 16121), (138, 16157), (141, 16169), (144, 16217), (145, 16232), (146, 16235), (148, 16259), (149, 16274), (154, 16319), (157, 16358), (164, 16382), (171, 16433), (172, 16436), (180, 16490), (184, 16541), (186, 16547), (195, 16631), (204, 16688), (214, 16745),

Gene: Tongui_30 Start: 18184, Stop: 19953, Start Num: 46

Candidate Starts for Tongui_30:

(41, 18154), (43, 18157), (44, 18169), (45, 18181), (Start: 46 @18184 has 1 MA's), (53, 18217), (58, 18286), (67, 18349), (79, 18472), (82, 18481), (86, 18583), (88, 18610), (89, 18622), (114, 18937), (119, 18985), (130, 19132), (134, 19162), (136, 19171), (138, 19198), (140, 19207), (155, 19393), (162, 19420), (167, 19444), (177, 19513), (179, 19525), (182, 19573), (183, 19582), (190, 19627),

(198, 19693), (229, 19933),