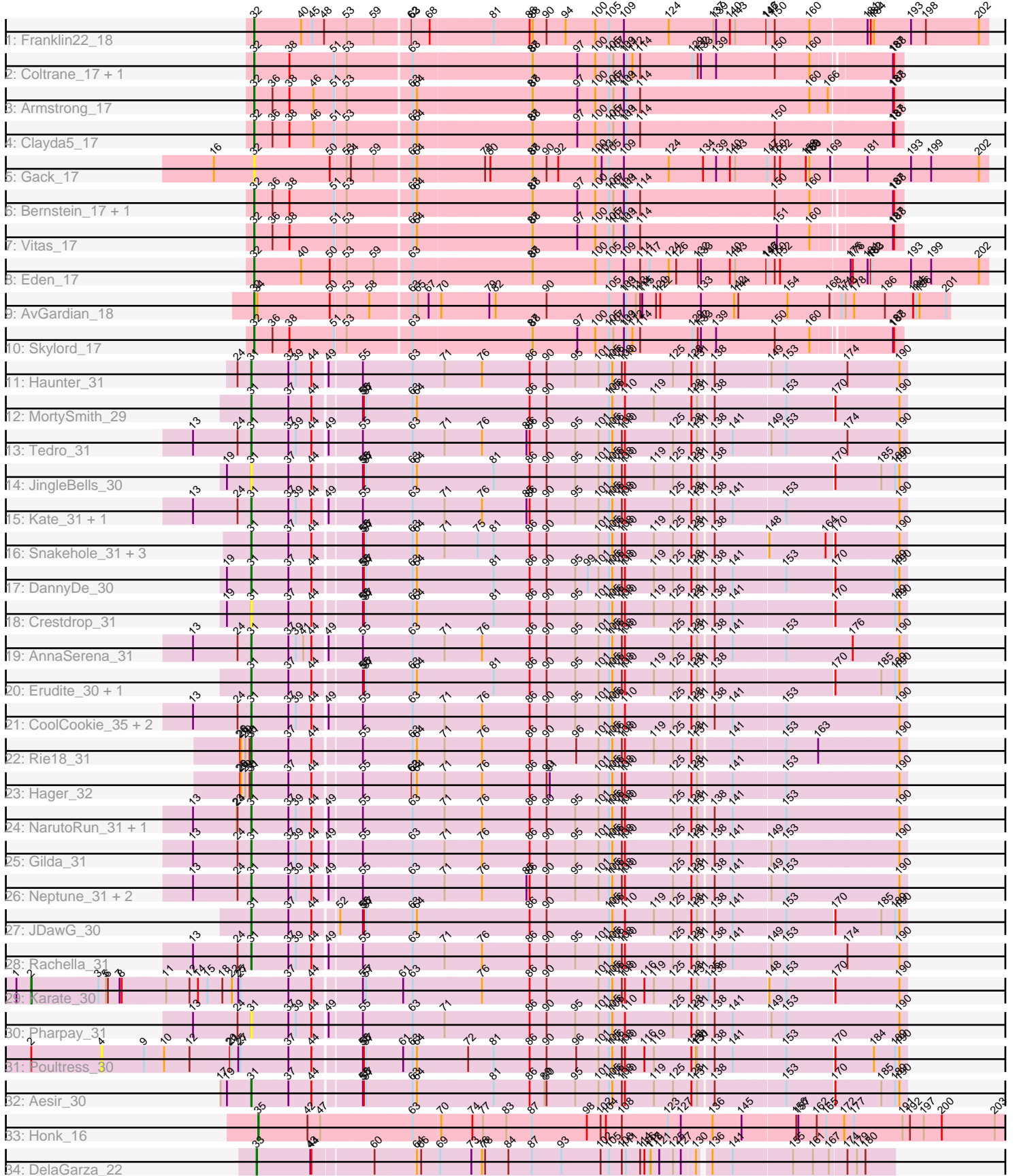


Pham 163700



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 163700 Report

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

Pham number 163700 has 46 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Franklin22_18
- Track 2 : Coltrane_17, Brahms_17
- Track 3 : Armstrong_17
- Track 4 : Clayda5_17
- Track 5 : Gack_17
- Track 6 : Bernstein_17, Rollins_17
- Track 7 : Vitas_17
- Track 8 : Eden_17
- Track 9 : AvGardian_18
- Track 10 : Skylord_17
- Track 11 : Haunter_31
- Track 12 : MortySmith_29
- Track 13 : Tedro_31
- Track 14 : JingleBells_30
- Track 15 : Kate_31, OverHedge_31
- Track 16 : Snakehole_31, Hiddenleaf_30, FreddieHg_30, Chivey_30
- Track 17 : DannyDe_30
- Track 18 : Crestdrop_31
- Track 19 : AnnaSerena_31
- Track 20 : Erudite_30, Dauntless_31
- Track 21 : CoolCookie_35, Potty_31, Krampus_31
- Track 22 : Rie18_31
- Track 23 : Hager_32
- Track 24 : NarutoRun_31, Anakin_31
- Track 25 : Gilda_31
- Track 26 : Neptune_31, PhunaPhoke_31, Cybele_31
- Track 27 : JDawG_30
- Track 28 : Rachella_31
- Track 29 : Karate_30
- Track 30 : Pharpay_31
- Track 31 : Poultruss_30
- Track 32 : Aesir_30
- Track 33 : Honk_16
- Track 34 : DelaGarza_22

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

The start number called the most often in the published annotations is 31, it was called in 23 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir_30, Anakin_31, AnnaSerena_31, Chivey_30, CoolCookie_35, Crestdrop_31, Cybele_31, DannyDe_30, Dauntless_31, 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, OverHedge_31, Pharpay_31, PhunaPhoke_31, Potty_31, Rachella_31, Rie18_31, 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, AvGardian_18, Bernstein_17, Brahms_17, Clayda5_17, Coltrane_17, DelaGarza_22, Eden_17, Franklin22_18, Gack_17, Honk_16, Karate_30, Poultruss_30, Rollins_17, Skylord_17, Vitas_17,

Summary by start number:

Start 2:

- Found in 2 of 46 (4.3%) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Karate_30 (EF),

Start 4:

- Found in 1 of 46 (2.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Poultruss_30 (EF),

Start 31:

- Found in 30 of 46 (65.2%) of genes in pham
- Manual Annotations of this start: 23 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aesir_30 (EF), Anakin_31 (EF), AnnaSerena_31 (EF), Chivey_30 (EF), CoolCookie_35 (EF), Crestdrop_31 (EF), Cybele_31 (EF), DannyDe_30 (EF), Dauntless_31 (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), OverHedge_31 (EF), Pharpay_31 (EF), PhunaPhoke_31 (EF), Potty_31 (EF), Rachella_31 (EF), Rie18_31 (EF), Snakehole_31 (EF), Tedro_31 (EF),

Start 32:

- Found in 12 of 46 (26.1%) of genes in pham
- Manual Annotations of this start: 11 of 37
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Armstrong_17 (EB), AvGardian_18 (EB), Bernstein_17 (EB), Brahms_17 (EB), Clayda5_17 (EB), Coltrane_17 (EB), Eden_17 (EB), Franklin22_18 (EB), Gack_17 (EB), Rollins_17 (EB), Skylord_17 (EB), Vitas_17 (EB),

Start 33:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DelaGarza_22 (GF),

Start 35:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 37
- 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 32 was manually annotated 11 times for cluster EB.

Info for manual annotations of cluster EF:

- Start number 2 was manually annotated 1 time for cluster EF.
- Start number 31 was manually annotated 23 times for cluster EF.

Info for manual annotations of cluster EH:

- Start number 35 was manually annotated 1 time for cluster EH.

Info for manual annotations of cluster GF:

- Start number 33 was manually annotated 1 time for cluster GF.

Gene Information:

Gene: Aesir_30 Start: 18424, Stop: 20193, Start Num: 31

Candidate Starts for Aesir_30:

(17, 18337), (19, 18355), (Start: 31 @18424 has 23 MA's), (37, 18526), (44, 18589), (55, 18712), (56, 18715), (57, 18721), (63, 18850), (64, 18862), (81, 19075), (86, 19177), (89, 19219), (90, 19225), (95, 19306), (101, 19372), (105, 19402), (106, 19411), (108, 19438), (110, 19447), (119, 19528), (125, 19582), (128, 19633), (131, 19648), (138, 19684), (153, 19867), (170, 19996), (185, 20122), (189, 20161), (190, 20173),

Gene: Anakin_31 Start: 18678, Stop: 20456, Start Num: 31

Candidate Starts for Anakin_31:

(13, 18513), (23, 18636), (24, 18639), (Start: 31 @18678 has 23 MA's), (37, 18780), (39, 18801), (44, 18843), (49, 18879), (55, 18966), (63, 19104), (71, 19194), (76, 19296), (86, 19431), (90, 19479), (95, 19560), (101, 19626), (105, 19656), (106, 19665), (108, 19692), (110, 19701), (125, 19836), (128, 19887), (131, 19902), (138, 19938), (141, 19986), (153, 20121), (190, 20436),

Gene: AnnaSerena_31 Start: 18687, Stop: 20465, Start Num: 31

Candidate Starts for AnnaSerena_31:

(13, 18522), (24, 18648), (Start: 31 @18687 has 23 MA's), (37, 18789), (39, 18810), (41, 18831), (44, 18852), (49, 18888), (55, 18975), (63, 19113), (71, 19203), (76, 19305), (86, 19440), (90, 19488), (95, 19569), (101, 19635), (105, 19665), (106, 19674), (108, 19701), (110, 19710), (125, 19845), (128, 19896), (131, 19911), (138, 19947), (141, 19995), (153, 20130), (176, 20316), (190, 20445),

Gene: Armstrong_17 Start: 12466, Stop: 14193, Start Num: 32

Candidate Starts for Armstrong_17:

(Start: 32 @12466 has 11 MA's), (36, 12514), (38, 12559), (46, 12625), (51, 12682), (53, 12712), (63, 12886), (64, 12898), (87, 13204), (88, 13207), (97, 13333), (100, 13384), (105, 13423), (107, 13435), (109, 13465), (111, 13471), (114, 13507), (160, 13963), (166, 14011), (187, 14167), (188, 14170),

Gene: AvGardian_18 Start: 13647, Stop: 15533, Start Num: 32

Candidate Starts for AvGardian_18:

(Start: 32 @13647 has 11 MA's), (34, 13656), (50, 13851), (53, 13893), (58, 13956), (63, 14067), (65, 14082), (67, 14109), (70, 14136), (79, 14265), (82, 14283), (90, 14427), (105, 14604), (109, 14646), (111, 14652), (113, 14676), (114, 14688), (115, 14694), (120, 14733), (122, 14745), (133, 14859), (142, 14949), (144, 14961), (154, 15096), (168, 15207), (171, 15234), (173, 15243), (178, 15267), (186, 15354), (194, 15429), (195, 15438), (196, 15447), (201, 15522),

Gene: Bernstein_17 Start: 12526, Stop: 14229, Start Num: 32

Candidate Starts for Bernstein_17:

(Start: 32 @12526 has 11 MA's), (36, 12574), (38, 12619), (51, 12742), (53, 12772), (63, 12946), (64, 12958), (87, 13264), (88, 13267), (97, 13393), (100, 13444), (105, 13483), (107, 13495), (109, 13525), (111, 13531), (114, 13567), (150, 13933), (160, 14023), (187, 14203), (188, 14206),

Gene: Brahms_17 Start: 12466, Stop: 14169, Start Num: 32

Candidate Starts for Brahms_17:

(Start: 32 @12466 has 11 MA's), (38, 12559), (51, 12682), (53, 12712), (63, 12886), (87, 13204), (88, 13207), (97, 13333), (100, 13384), (105, 13423), (107, 13435), (109, 13465), (111, 13471), (112, 13489), (114, 13507), (129, 13654), (132, 13669), (133, 13678), (139, 13717), (150, 13873), (160, 13963), (187, 14143), (188, 14146),

Gene: Chivey_30 Start: 17840, Stop: 19609, Start Num: 31

Candidate Starts for Chivey_30:

(Start: 31 @17840 has 23 MA's), (37, 17942), (44, 18005), (55, 18128), (56, 18131), (57, 18137), (63, 18266), (64, 18278), (71, 18356), (75, 18446), (81, 18491), (86, 18593), (90, 18641), (101, 18788), (105, 18818), (106, 18827), (108, 18854), (110, 18863), (119, 18944), (125, 18998), (128, 19049), (131, 19064), (138, 19100), (148, 19238), (164, 19394), (170, 19412), (190, 19589),

Gene: Clayda5_17 Start: 12466, Stop: 14199, Start Num: 32

Candidate Starts for Clayda5_17:

(Start: 32 @12466 has 11 MA's), (36, 12514), (38, 12559), (46, 12625), (51, 12682), (53, 12712), (63, 12886), (64, 12898), (87, 13204), (88, 13207), (97, 13333), (100, 13384), (105, 13423), (107, 13435), (109, 13465), (111, 13471), (114, 13507), (150, 13873), (187, 14173), (188, 14176),

Gene: Coltrane_17 Start: 12466, Stop: 14169, Start Num: 32

Candidate Starts for Coltrane_17:

(Start: 32 @12466 has 11 MA's), (38, 12559), (51, 12682), (53, 12712), (63, 12886), (87, 13204), (88, 13207), (97, 13333), (100, 13384), (105, 13423), (107, 13435), (109, 13465), (111, 13471), (112, 13489), (114, 13507), (129, 13654), (132, 13669), (133, 13678), (139, 13717), (150, 13873), (160, 13963), (187, 14143), (188, 14146),

Gene: CoolCookie_35 Start: 18685, Stop: 20463, Start Num: 31

Candidate Starts for CoolCookie_35:

(13, 18520), (24, 18646), (Start: 31 @18685 has 23 MA's), (37, 18787), (39, 18808), (44, 18850), (49, 18886), (55, 18973), (63, 19111), (71, 19201), (76, 19303), (86, 19438), (90, 19486), (95, 19567), (101, 19633), (105, 19663), (106, 19672), (110, 19708), (125, 19843), (128, 19894), (131, 19909), (138, 19945), (141, 19993), (153, 20128), (190, 20443),

Gene: Crestdrop_31 Start: 17749, Stop: 19518, Start Num: 31

Candidate Starts for Crestdrop_31:

(19, 17680), (Start: 31 @17749 has 23 MA's), (37, 17851), (44, 17914), (55, 18037), (56, 18040), (57, 18046), (63, 18175), (64, 18187), (81, 18400), (86, 18502), (90, 18550), (95, 18631), (101, 18697), (105, 18727), (106, 18736), (108, 18763), (110, 18772), (119, 18853), (125, 18907), (128, 18958), (131, 18973), (138, 19009), (141, 19057), (170, 19321), (189, 19486), (190, 19498),

Gene: Cybele_31 Start: 18655, Stop: 20433, Start Num: 31

Candidate Starts for Cybele_31:

(13, 18490), (24, 18616), (Start: 31 @18655 has 23 MA's), (37, 18757), (39, 18778), (44, 18820), (49, 18856), (55, 18943), (63, 19081), (71, 19171), (76, 19273), (85, 19399), (86, 19408), (90, 19456), (95, 19537), (101, 19603), (105, 19633), (106, 19642), (108, 19669), (110, 19678), (125, 19813), (128, 19864), (131, 19879), (138, 19915), (141, 19963), (149, 20059), (153, 20098), (190, 20413),

Gene: DannyDe_30 Start: 17832, Stop: 19601, Start Num: 31

Candidate Starts for DannyDe_30:

(19, 17763), (Start: 31 @17832 has 23 MA's), (37, 17934), (44, 17997), (55, 18120), (56, 18123), (57, 18129), (63, 18258), (64, 18270), (81, 18483), (86, 18585), (90, 18633), (95, 18714), (99, 18750), (101, 18780), (105, 18810), (106, 18819), (108, 18846), (110, 18855), (119, 18936), (125, 18990), (128, 19041), (131, 19056), (138, 19092), (141, 19140), (153, 19275), (170, 19404), (189, 19569), (190, 19581),

Gene: Dauntless_31 Start: 18392, Stop: 20161, Start Num: 31

Candidate Starts for Dauntless_31:

(Start: 31 @18392 has 23 MA's), (37, 18494), (44, 18557), (55, 18680), (56, 18683), (57, 18689), (63, 18818), (64, 18830), (81, 19043), (86, 19145), (90, 19193), (95, 19274), (101, 19340), (105, 19370), (106, 19379), (108, 19406), (110, 19415), (119, 19496), (125, 19550), (128, 19601), (131, 19616), (138, 19652), (170, 19964), (185, 20090), (189, 20129), (190, 20141),

Gene: DelaGarza_22 Start: 15128, Stop: 16816, Start Num: 33

Candidate Starts for DelaGarza_22:

(Start: 33 @15128 has 1 MA's), (43, 15275), (44, 15278), (60, 15440), (64, 15557), (66, 15569), (69, 15623), (73, 15710), (76, 15740), (78, 15749), (84, 15815), (87, 15881), (93, 15965), (102, 16073), (105, 16097), (108, 16133), (111, 16145), (114, 16181), (116, 16193), (117, 16208), (118, 16211), (121, 16235), (125, 16274), (127, 16295), (130, 16331), (136, 16352), (141, 16409), (155, 16556), (161, 16607), (167, 16652), (174, 16697), (179, 16721), (180, 16739),

Gene: Eden_17 Start: 12590, Stop: 14578, Start Num: 32

Candidate Starts for Eden_17:

(Start: 32 @12590 has 11 MA's), (40, 12713), (50, 12791), (53, 12833), (59, 12908), (63, 13007), (87, 13325), (88, 13328), (100, 13505), (105, 13544), (109, 13586), (114, 13628), (117, 13655), (124, 13709), (126, 13730), (132, 13790), (133, 13799), (140, 13877), (143, 13892), (146, 13976), (147, 13979), (150, 14000), (152, 14015), (175, 14192), (176, 14198), (181, 14240), (182, 14249), (183, 14252), (193, 14360), (199, 14417), (202, 14552),

Gene: Erudite_30 Start: 18392, Stop: 20161, Start Num: 31

Candidate Starts for Erudite_30:

(Start: 31 @18392 has 23 MA's), (37, 18494), (44, 18557), (55, 18680), (56, 18683), (57, 18689), (63, 18818), (64, 18830), (81, 19043), (86, 19145), (90, 19193), (95, 19274), (101, 19340), (105, 19370), (106, 19379), (108, 19406), (110, 19415), (119, 19496), (125, 19550), (128, 19601), (131, 19616), (138, 19652), (170, 19964), (185, 20090), (189, 20129), (190, 20141),

Gene: Franklin22_18 Start: 12769, Stop: 14757, Start Num: 32

Candidate Starts for Franklin22_18:

(Start: 32 @12769 has 11 MA's), (40, 12892), (45, 12922), (48, 12955), (53, 13015), (59, 13090), (62, 13186), (63, 13189), (68, 13234), (81, 13399), (86, 13501), (88, 13510), (90, 13549), (94, 13603), (100, 13687), (105, 13726), (109, 13768), (124, 13891), (137, 14014), (139, 14020), (140, 14059), (143, 14074), (146, 14158), (147, 14161), (150, 14182), (160, 14269), (181, 14419), (182, 14428), (184, 14437), (193, 14539), (198, 14581), (202, 14731),

Gene: FreddieHg_30 Start: 17856, Stop: 19625, Start Num: 31

Candidate Starts for FreddieHg_30:

(Start: 31 @17856 has 23 MA's), (37, 17958), (44, 18021), (55, 18144), (56, 18147), (57, 18153), (63, 18282), (64, 18294), (71, 18372), (75, 18462), (81, 18507), (86, 18609), (90, 18657), (101, 18804), (105, 18834), (106, 18843), (108, 18870), (110, 18879), (119, 18960), (125, 19014), (128, 19065), (131, 19080), (138, 19116), (148, 19254), (164, 19410), (170, 19428), (190, 19605),

Gene: Gack_17 Start: 12658, Stop: 14643, Start Num: 32

Candidate Starts for Gack_17:

(16, 12544), (Start: 32 @12658 has 11 MA's), (50, 12859), (53, 12901), (54, 12913), (59, 12976), (63, 13075), (64, 13087), (78, 13261), (80, 13276), (87, 13393), (88, 13396), (90, 13435), (92, 13468), (100, 13573), (103, 13591), (105, 13612), (109, 13654), (124, 13777), (134, 13873), (139, 13906), (140, 13945), (143, 13960), (147, 14047), (150, 14068), (152, 14083), (158, 14146), (159, 14152), (160, 14155), (169, 14209), (181, 14305), (193, 14425), (199, 14482), (202, 14617),

Gene: Gilda_31 Start: 18679, Stop: 20457, Start Num: 31

Candidate Starts for Gilda_31:

(13, 18514), (24, 18640), (Start: 31 @18679 has 23 MA's), (37, 18781), (39, 18802), (44, 18844), (49, 18880), (55, 18967), (63, 19105), (71, 19195), (76, 19297), (86, 19432), (90, 19480), (95, 19561), (101, 19627), (105, 19657), (106, 19666), (108, 19693), (110, 19702), (125, 19837), (128, 19888), (131, 19903), (138, 19939), (141, 19987), (149, 20083), (153, 20122), (190, 20437),

Gene: Hager_32 Start: 18239, Stop: 20017, Start Num: 31

Candidate Starts for Hager_32:

(26, 18209), (28, 18212), (29, 18224), (30, 18236), (Start: 31 @18239 has 23 MA's), (37, 18341), (44, 18404), (55, 18527), (62, 18662), (63, 18665), (64, 18677), (71, 18755), (76, 18857), (86, 18992), (90, 19040), (91, 19049), (101, 19187), (105, 19217), (106, 19226), (108, 19253), (110, 19262), (125, 19397), (128, 19448), (131, 19463), (141, 19547), (153, 19682), (190, 19997),

Gene: Haunter_31 Start: 18092, Stop: 19870, Start Num: 31

Candidate Starts for Haunter_31:

(24, 18053), (Start: 31 @18092 has 23 MA's), (37, 18194), (39, 18215), (44, 18257), (49, 18293), (55, 18380), (63, 18518), (71, 18608), (76, 18710), (86, 18845), (90, 18893), (95, 18974), (101, 19040), (105, 19070), (106, 19079), (108, 19106), (110, 19115), (125, 19250), (128, 19301), (131, 19316), (138, 19352), (149, 19496), (153, 19535), (174, 19706), (190, 19850),

Gene: Hiddenleaf_30 Start: 17840, Stop: 19609, Start Num: 31

Candidate Starts for Hiddenleaf_30:

(Start: 31 @17840 has 23 MA's), (37, 17942), (44, 18005), (55, 18128), (56, 18131), (57, 18137), (63, 18266), (64, 18278), (71, 18356), (75, 18446), (81, 18491), (86, 18593), (90, 18641), (101, 18788), (105, 18818), (106, 18827), (108, 18854), (110, 18863), (119, 18944), (125, 18998), (128, 19049), (131, 19064), (138, 19100), (148, 19238), (164, 19394), (170, 19412), (190, 19589),

Gene: Honk_16 Start: 12148, Stop: 14262, Start Num: 35

Candidate Starts for Honk_16:

(Start: 35 @12148 has 1 MA's), (42, 12286), (47, 12322), (63, 12580), (70, 12649), (74, 12733), (77, 12760), (83, 12826), (87, 12898), (98, 13054), (102, 13093), (104, 13108), (108, 13153), (123, 13279), (127, 13315), (136, 13405), (145, 13483), (156, 13627), (157, 13633), (162, 13684), (165, 13711), (172, 13762), (177, 13789), (191, 13927), (192, 13948), (197, 13987), (200, 14038), (203, 14188),

Gene: JDawG_30 Start: 18422, Stop: 20188, Start Num: 31

Candidate Starts for JDawG_30:

(Start: 31 @18422 has 23 MA's), (37, 18524), (44, 18587), (52, 18647), (55, 18710), (56, 18713), (57, 18719), (63, 18848), (64, 18860), (86, 19172), (90, 19220), (105, 19397), (106, 19406), (110, 19442), (119, 19523), (125, 19577), (128, 19628), (131, 19643), (138, 19679), (141, 19727), (153, 19862), (170, 19991), (185, 20117), (189, 20156), (190, 20168),

Gene: JingleBells_30 Start: 17956, Stop: 19725, Start Num: 31

Candidate Starts for JingleBells_30:

(19, 17887), (Start: 31 @17956 has 23 MA's), (37, 18058), (44, 18121), (55, 18244), (56, 18247), (57, 18253), (63, 18382), (64, 18394), (81, 18607), (86, 18709), (90, 18757), (95, 18838), (101, 18904), (105, 18934), (106, 18943), (108, 18970), (110, 18979), (119, 19060), (125, 19114), (128, 19165), (131, 19180), (138, 19216), (170, 19528), (185, 19654), (189, 19693), (190, 19705),

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

Candidate Starts for Karate_30:

(1, 18049), (Start: 2 @18091 has 1 MA's), (3, 18280), (5, 18301), (6, 18307), (7, 18340), (8, 18346), (11, 18466), (12, 18532), (14, 18556), (15, 18583), (18, 18625), (22, 18652), (25, 18670), (27, 18676), (37, 18808), (44, 18871), (55, 18994), (57, 19003), (61, 19105), (63, 19132), (76, 19321), (86, 19456), (90, 19504), (101, 19651), (105, 19681), (106, 19690), (108, 19717), (110, 19726), (116, 19780), (119, 19807), (125, 19861), (128, 19912), (131, 19927), (135, 19960), (138, 19975), (148, 20113), (153, 20158), (170, 20287), (190, 20464),

Gene: Kate_31 Start: 18687, Stop: 20465, Start Num: 31

Candidate Starts for Kate_31:

(13, 18522), (24, 18648), (Start: 31 @18687 has 23 MA's), (37, 18789), (39, 18810), (44, 18852), (49, 18888), (55, 18975), (63, 19113), (71, 19203), (76, 19305), (85, 19431), (86, 19440), (90, 19488), (95, 19569), (101, 19635), (105, 19665), (106, 19674), (108, 19701), (110, 19710), (125, 19845), (128, 19896), (131, 19911), (138, 19947), (141, 19995), (153, 20130), (190, 20445),

Gene: Krampus_31 Start: 18685, Stop: 20463, Start Num: 31

Candidate Starts for Krampus_31:

(13, 18520), (24, 18646), (Start: 31 @18685 has 23 MA's), (37, 18787), (39, 18808), (44, 18850), (49, 18886), (55, 18973), (63, 19111), (71, 19201), (76, 19303), (86, 19438), (90, 19486), (95, 19567), (101, 19633), (105, 19663), (106, 19672), (110, 19708), (125, 19843), (128, 19894), (131, 19909), (138, 19945), (141, 19993), (153, 20128), (190, 20443),

Gene: MortySmith_29 Start: 17815, Stop: 19581, Start Num: 31

Candidate Starts for MortySmith_29:

(Start: 31 @17815 has 23 MA's), (37, 17917), (44, 17980), (55, 18103), (56, 18106), (57, 18112), (63, 18241), (64, 18253), (86, 18565), (90, 18613), (105, 18790), (106, 18799), (110, 18835), (119, 18916),

(128, 19021), (131, 19036), (138, 19072), (153, 19255), (170, 19384), (190, 19561),

Gene: NarutoRun_31 Start: 18678, Stop: 20456, Start Num: 31

Candidate Starts for NarutoRun_31:

(13, 18513), (23, 18636), (24, 18639), (Start: 31 @18678 has 23 MA's), (37, 18780), (39, 18801), (44, 18843), (49, 18879), (55, 18966), (63, 19104), (71, 19194), (76, 19296), (86, 19431), (90, 19479), (95, 19560), (101, 19626), (105, 19656), (106, 19665), (108, 19692), (110, 19701), (125, 19836), (128, 19887), (131, 19902), (138, 19938), (141, 19986), (153, 20121), (190, 20436),

Gene: Neptune_31 Start: 18655, Stop: 20433, Start Num: 31

Candidate Starts for Neptune_31:

(13, 18490), (24, 18616), (Start: 31 @18655 has 23 MA's), (37, 18757), (39, 18778), (44, 18820), (49, 18856), (55, 18943), (63, 19081), (71, 19171), (76, 19273), (85, 19399), (86, 19408), (90, 19456), (95, 19537), (101, 19603), (105, 19633), (106, 19642), (108, 19669), (110, 19678), (125, 19813), (128, 19864), (131, 19879), (138, 19915), (141, 19963), (149, 20059), (153, 20098), (190, 20413),

Gene: OverHedge_31 Start: 18645, Stop: 20423, Start Num: 31

Candidate Starts for OverHedge_31:

(13, 18480), (24, 18606), (Start: 31 @18645 has 23 MA's), (37, 18747), (39, 18768), (44, 18810), (49, 18846), (55, 18933), (63, 19071), (71, 19161), (76, 19263), (85, 19389), (86, 19398), (90, 19446), (95, 19527), (101, 19593), (105, 19623), (106, 19632), (108, 19659), (110, 19668), (125, 19803), (128, 19854), (131, 19869), (138, 19905), (141, 19953), (153, 20088), (190, 20403),

Gene: Pharpay_31 Start: 18700, Stop: 20478, Start Num: 31

Candidate Starts for Pharpay_31:

(13, 18535), (24, 18661), (Start: 31 @18700 has 23 MA's), (37, 18802), (39, 18823), (44, 18865), (49, 18901), (55, 18988), (63, 19126), (71, 19216), (86, 19453), (90, 19501), (95, 19582), (101, 19648), (105, 19678), (106, 19687), (110, 19723), (125, 19858), (128, 19909), (131, 19924), (138, 19960), (141, 20008), (149, 20104), (153, 20143), (190, 20458),

Gene: PhunaPhoke_31 Start: 18673, Stop: 20451, Start Num: 31

Candidate Starts for PhunaPhoke_31:

(13, 18508), (24, 18634), (Start: 31 @18673 has 23 MA's), (37, 18775), (39, 18796), (44, 18838), (49, 18874), (55, 18961), (63, 19099), (71, 19189), (76, 19291), (85, 19417), (86, 19426), (90, 19474), (95, 19555), (101, 19621), (105, 19651), (106, 19660), (108, 19687), (110, 19696), (125, 19831), (128, 19882), (131, 19897), (138, 19933), (141, 19981), (149, 20077), (153, 20116), (190, 20431),

Gene: Potty_31 Start: 18678, Stop: 20456, Start Num: 31

Candidate Starts for Potty_31:

(13, 18513), (24, 18639), (Start: 31 @18678 has 23 MA's), (37, 18780), (39, 18801), (44, 18843), (49, 18879), (55, 18966), (63, 19104), (71, 19194), (76, 19296), (86, 19431), (90, 19479), (95, 19560), (101, 19626), (105, 19656), (106, 19665), (110, 19701), (125, 19836), (128, 19887), (131, 19902), (138, 19938), (141, 19986), (153, 20121), (190, 20436),

Gene: Poultruss_30 Start: 18637, Stop: 20820, Start Num: 4

Candidate Starts for Poultruss_30:

(Start: 2 @18442 has 1 MA's), (4, 18637), (9, 18751), (10, 18808), (12, 18880), (20, 18994), (21, 18997), (25, 19018), (27, 19024), (37, 19156), (44, 19219), (55, 19342), (56, 19345), (57, 19351), (61, 19453), (63, 19480), (64, 19492), (72, 19633), (81, 19702), (86, 19804), (90, 19852), (96, 19936), (101, 19999), (105, 20029), (106, 20038), (108, 20065), (110, 20074), (116, 20128), (119, 20155), (128, 20260), (130, 20272), (131, 20275), (138, 20311), (141, 20359), (153, 20494), (170, 20623), (184, 20728), (189, 20788), (190, 20800),

Gene: Rachella_31 Start: 18681, Stop: 20459, Start Num: 31

Candidate Starts for Rachella_31:

(13, 18516), (24, 18642), (Start: 31 @18681 has 23 MA's), (37, 18783), (39, 18804), (44, 18846), (49, 18882), (55, 18969), (63, 19107), (71, 19197), (76, 19299), (86, 19434), (90, 19482), (95, 19563), (101, 19629), (105, 19659), (106, 19668), (108, 19695), (110, 19704), (125, 19839), (128, 19890), (131, 19905), (138, 19941), (141, 19989), (149, 20085), (153, 20124), (174, 20295), (190, 20439),

Gene: Rie18_31 Start: 18192, Stop: 19970, Start Num: 31

Candidate Starts for Rie18_31:

(26, 18162), (28, 18165), (29, 18177), (30, 18189), (Start: 31 @18192 has 23 MA's), (37, 18294), (44, 18357), (55, 18480), (63, 18618), (64, 18630), (71, 18708), (76, 18810), (86, 18945), (90, 18993), (96, 19077), (101, 19140), (105, 19170), (106, 19179), (108, 19206), (110, 19215), (119, 19296), (125, 19350), (128, 19401), (131, 19416), (141, 19500), (153, 19635), (163, 19725), (190, 19950),

Gene: Rollins_17 Start: 12526, Stop: 14229, Start Num: 32

Candidate Starts for Rollins_17:

(Start: 32 @12526 has 11 MA's), (36, 12574), (38, 12619), (51, 12742), (53, 12772), (63, 12946), (64, 12958), (87, 13264), (88, 13267), (97, 13393), (100, 13444), (105, 13483), (107, 13495), (109, 13525), (111, 13531), (114, 13567), (150, 13933), (160, 14023), (187, 14203), (188, 14206),

Gene: Skylord_17 Start: 12466, Stop: 14169, Start Num: 32

Candidate Starts for Skylord_17:

(Start: 32 @12466 has 11 MA's), (36, 12514), (38, 12559), (51, 12682), (53, 12712), (63, 12886), (87, 13204), (88, 13207), (97, 13333), (100, 13384), (105, 13423), (107, 13435), (109, 13465), (111, 13471), (112, 13489), (114, 13507), (129, 13654), (132, 13669), (133, 13678), (139, 13717), (150, 13873), (160, 13963), (187, 14143), (188, 14146),

Gene: Snakehole_31 Start: 17937, Stop: 19706, Start Num: 31

Candidate Starts for Snakehole_31:

(Start: 31 @17937 has 23 MA's), (37, 18039), (44, 18102), (55, 18225), (56, 18228), (57, 18234), (63, 18363), (64, 18375), (71, 18453), (75, 18543), (81, 18588), (86, 18690), (90, 18738), (101, 18885), (105, 18915), (106, 18924), (108, 18951), (110, 18960), (119, 19041), (125, 19095), (128, 19146), (131, 19161), (138, 19197), (148, 19335), (164, 19491), (170, 19509), (190, 19686),

Gene: Tedro_31 Start: 18151, Stop: 19929, Start Num: 31

Candidate Starts for Tedro_31:

(13, 17986), (24, 18112), (Start: 31 @18151 has 23 MA's), (37, 18253), (39, 18274), (44, 18316), (49, 18352), (55, 18439), (63, 18577), (71, 18667), (76, 18769), (85, 18895), (86, 18904), (90, 18952), (95, 19033), (101, 19099), (105, 19129), (106, 19138), (108, 19165), (110, 19174), (125, 19309), (128, 19360), (131, 19375), (138, 19411), (141, 19459), (149, 19555), (153, 19594), (174, 19765), (190, 19909),

Gene: Vitas_17 Start: 12466, Stop: 14169, Start Num: 32

Candidate Starts for Vitas_17:

(Start: 32 @12466 has 11 MA's), (36, 12514), (38, 12559), (51, 12682), (53, 12712), (63, 12886), (64, 12898), (87, 13204), (88, 13207), (97, 13333), (100, 13384), (105, 13423), (107, 13435), (109, 13465), (111, 13471), (114, 13507), (151, 13879), (160, 13963), (187, 14143), (188, 14146),