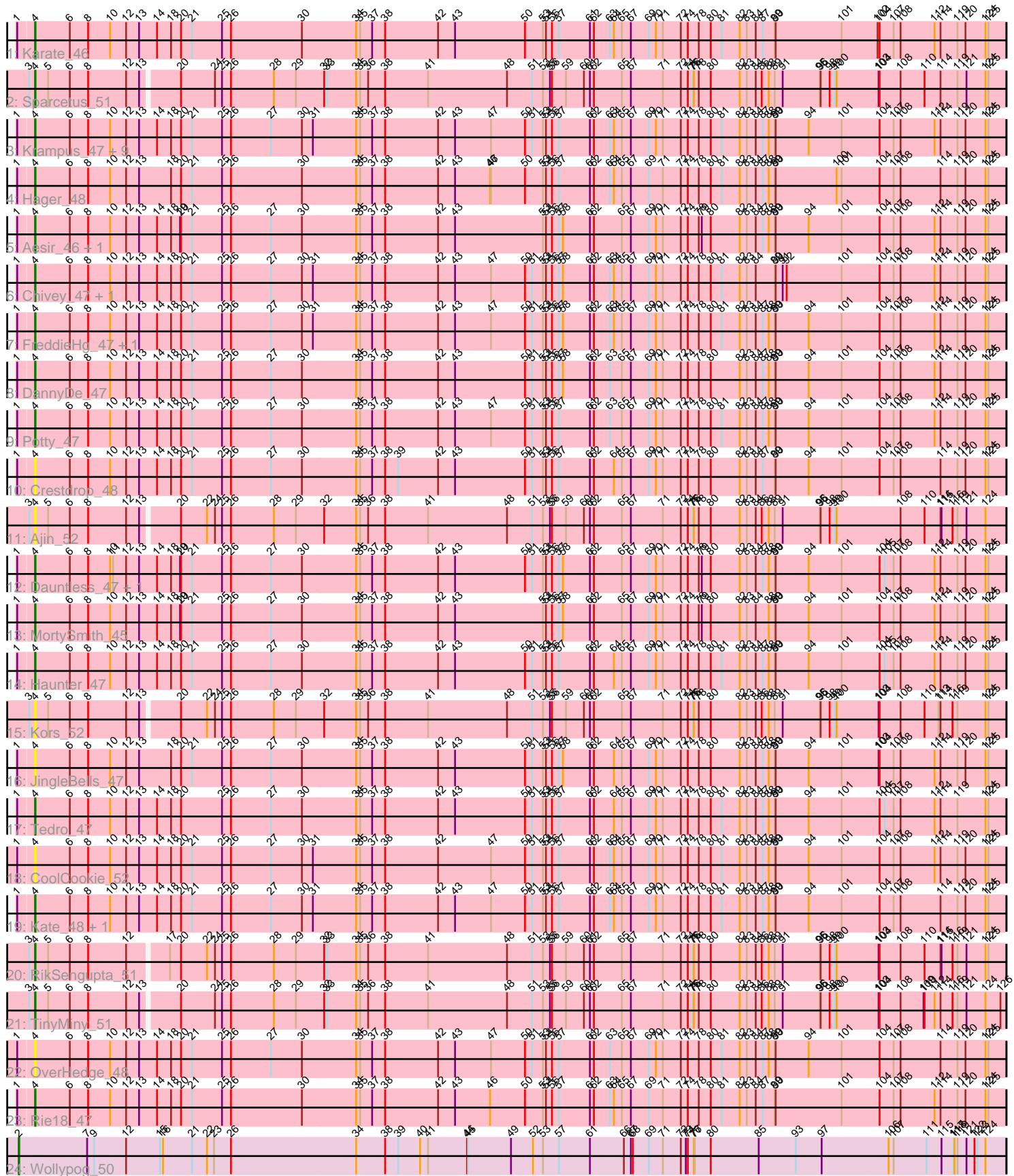


Pham 3095



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 3095 Report

This analysis was run 04/05/24 on database version 557.

Pham number 3095 has 38 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Karate_46
- Track 2 : Sparcetus_51
- Track 3 : Krampus_47, Pharpay_47, Anakin_47, Rachella_47, Poultress_47, NarutoRun_47, PhunaPhoke_47, Neptune_47, Cybele_47, AnnaSerena_47
- Track 4 : Hager_48
- Track 5 : Aesir_46, JDawG_46
- Track 6 : Chivey_47, Hiddenleaf_47
- Track 7 : FreddieHg_47, Snakehole_47
- Track 8 : DannyDe_47
- Track 9 : Potty_47
- Track 10 : Crestdrop_48
- Track 11 : Ajin_52
- Track 12 : Dauntless_47, Erudite_46
- Track 13 : MortySmith_45
- Track 14 : Haunter_47
- Track 15 : Kors_52
- Track 16 : JingleBells_47
- Track 17 : Tedro_47
- Track 18 : CoolCookie_52
- Track 19 : Kate_48, Gilda_47
- Track 20 : RikSengupta_51
- Track 21 : TinyMiny_51
- Track 22 : OverHedge_48
- Track 23 : Rie18_47
- Track 24 : Wollypog_50

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

The start number called the most often in the published annotations is 4, it was called in 27 of the 28 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir_46, Ajin_52, Anakin_47, AnnaSerena_47, Chivey_47, CoolCookie_52, Crestdrop_48, Cybele_47, DannyDe_47, Dauntless_47, Erudite_46, FreddieHg_47,

Gilda_47, Hager_48, Haunter_47, Hiddenleaf_47, JDawG_46, JingleBells_47, Karate_46, Kate_48, Kors_52, Krampus_47, MortySmith_45, NarutoRun_47, Neptune_47, OverHedge_48, Pharpay_47, PhunaPhoke_47, Potty_47, Poultress_47, Rachella_47, Rie18_47, RikSengupta_51, Snakehole_47, Sparcetus_51, Tedro_47, TinyMiny_51,

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

-

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

- Wollypog_50,

Summary by start number:

Start 2:

- Found in 1 of 38 (2.6%) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wollypog_50 (singleton),

Start 4:

- Found in 37 of 38 (97.4%) of genes in pham
- Manual Annotations of this start: 27 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aesir_46 (EF), Ajin_52 (EF), Anakin_47 (EF), AnnaSerena_47 (EF), Chivey_47 (EF), CoolCookie_52 (EF), Crestdrop_48 (EF), Cybele_47 (EF), DannyDe_47 (EF), Dauntless_47 (EF), Erudite_46 (EF), FreddieHg_47 (EF), Gilda_47 (EF), Hager_48 (EF), Haunter_47 (EF), Hiddenleaf_47 (EF), JDawG_46 (EF), JingleBells_47 (EF), Karate_46 (EF), Kate_48 (EF), Kors_52 (EF), Krampus_47 (EF), MortySmith_45 (EF), NarutoRun_47 (EF), Neptune_47 (EF), OverHedge_48 (EF), Pharpay_47 (EF), PhunaPhoke_47 (EF), Potty_47 (EF), Poultress_47 (EF), Rachella_47 (EF), Rie18_47 (EF), RikSengupta_51 (EF), Snakehole_47 (EF), Sparcetus_51 (EF), Tedro_47 (EF), TinyMiny_51 (EF),

Summary by clusters:

There are 2 clusters represented in this pham: singleton, EF,

Info for manual annotations of cluster EF:

- Start number 4 was manually annotated 27 times for cluster EF.

Gene Information:

Gene: Aesir_46 Start: 32155, Stop: 35040, Start Num: 4

Candidate Starts for Aesir_46:

(1, 32110), (Start: 4 @32155 has 27 MA's), (6, 32248), (8, 32302), (10, 32368), (12, 32416), (13, 32455), (14, 32509), (18, 32551), (19, 32578), (20, 32581), (21, 32614), (25, 32704), (26, 32728), (27, 32848), (30, 32941), (34, 33103), (35, 33115), (37, 33148), (38, 33187), (42, 33346), (43, 33397), (53, 33661), (54, 33670), (56, 33688), (57, 33709), (58, 33721), (61, 33799), (62, 33811), (65, 33895), (67, 33922), (69, 33976), (70, 33997), (71, 34018), (72, 34072), (74, 34093), (78, 34126), (79, 34135), (80, 34162), (82, 34249), (83, 34270), (84, 34297), (87, 34318), (88, 34336), (89, 34354), (90, 34357), (94,

(34456), (101, 34555), (104, 34666), (107, 34708), (108, 34729), (112, 34831), (114, 34849), (119, 34900), (120, 34924), (124, 34984), (125, 34993),

Gene: Ajin_52 Start: 33477, Stop: 36347, Start Num: 4

Candidate Starts for Ajin_52:

(3, 33459), (Start: 4 @33477 has 27 MA's), (5, 33516), (6, 33573), (8, 33627), (12, 33741), (13, 33780), (20, 33885), (22, 33963), (24, 33987), (25, 34008), (26, 34032), (28, 34161), (29, 34227), (32, 34311), (34, 34407), (35, 34419), (36, 34443), (38, 34494), (41, 34623), (48, 34860), (51, 34935), (53, 34968), (55, 34989), (56, 34995), (59, 35037), (60, 35088), (61, 35106), (62, 35118), (65, 35202), (67, 35229), (71, 35325), (72, 35379), (74, 35400), (75, 35415), (76, 35418), (78, 35433), (80, 35469), (82, 35556), (83, 35577), (84, 35604), (86, 35622), (88, 35643), (89, 35661), (91, 35685), (95, 35796), (96, 35799), (98, 35826), (99, 35841), (100, 35847), (108, 36036), (110, 36108), (114, 36156), (115, 36159), (116, 36192), (119, 36207), (121, 36234), (124, 36291),

Gene: Anakin_47 Start: 32514, Stop: 35399, Start Num: 4

Candidate Starts for Anakin_47:

(1, 32469), (Start: 4 @32514 has 27 MA's), (6, 32607), (8, 32661), (10, 32727), (12, 32775), (13, 32814), (14, 32868), (18, 32910), (20, 32940), (21, 32973), (25, 33063), (26, 33087), (27, 33207), (30, 33300), (31, 33333), (34, 33462), (35, 33474), (37, 33507), (38, 33546), (42, 33705), (43, 33756), (47, 33864), (50, 33966), (51, 33987), (53, 34020), (54, 34029), (56, 34047), (57, 34068), (61, 34158), (62, 34170), (63, 34218), (64, 34230), (65, 34254), (67, 34281), (69, 34335), (70, 34356), (71, 34377), (72, 34431), (74, 34452), (78, 34485), (80, 34521), (81, 34554), (82, 34608), (83, 34629), (84, 34656), (87, 34677), (88, 34695), (89, 34713), (90, 34716), (94, 34815), (101, 34914), (104, 35025), (107, 35067), (108, 35088), (112, 35190), (114, 35208), (119, 35259), (120, 35283), (124, 35343), (125, 35352),

Gene: AnnaSerena_47 Start: 32548, Stop: 35433, Start Num: 4

Candidate Starts for AnnaSerena_47:

(1, 32503), (Start: 4 @32548 has 27 MA's), (6, 32641), (8, 32695), (10, 32761), (12, 32809), (13, 32848), (14, 32902), (18, 32944), (20, 32974), (21, 33007), (25, 33097), (26, 33121), (27, 33241), (30, 33334), (31, 33367), (34, 33496), (35, 33508), (37, 33541), (38, 33580), (42, 33739), (43, 33790), (47, 33898), (50, 34000), (51, 34021), (53, 34054), (54, 34063), (56, 34081), (57, 34102), (61, 34192), (62, 34204), (63, 34252), (64, 34264), (65, 34288), (67, 34315), (69, 34369), (70, 34390), (71, 34411), (72, 34465), (74, 34486), (78, 34519), (80, 34555), (81, 34588), (82, 34642), (83, 34663), (84, 34690), (87, 34711), (88, 34729), (89, 34747), (90, 34750), (94, 34849), (101, 34948), (104, 35059), (107, 35101), (108, 35122), (112, 35224), (114, 35242), (119, 35293), (120, 35317), (124, 35377), (125, 35386),

Gene: Chivey_47 Start: 31745, Stop: 34630, Start Num: 4

Candidate Starts for Chivey_47:

(1, 31700), (Start: 4 @31745 has 27 MA's), (6, 31838), (8, 31892), (10, 31958), (12, 32006), (13, 32045), (14, 32099), (18, 32141), (20, 32171), (21, 32204), (25, 32294), (26, 32318), (27, 32438), (30, 32531), (31, 32564), (34, 32693), (35, 32705), (37, 32738), (38, 32777), (42, 32936), (43, 32987), (47, 33095), (50, 33197), (51, 33218), (53, 33251), (54, 33260), (56, 33278), (57, 33299), (58, 33311), (61, 33389), (62, 33401), (63, 33449), (64, 33461), (65, 33485), (67, 33512), (69, 33566), (70, 33587), (71, 33608), (72, 33662), (74, 33683), (78, 33716), (80, 33752), (81, 33785), (82, 33839), (83, 33860), (84, 33887), (89, 33944), (90, 33947), (91, 33968), (92, 33980), (101, 34145), (104, 34256), (107, 34298), (108, 34319), (112, 34421), (114, 34439), (119, 34490), (120, 34514), (124, 34574), (125, 34583),

Gene: CoolCookie_52 Start: 32541, Stop: 35426, Start Num: 4

Candidate Starts for CoolCookie_52:

(1, 32496), (Start: 4 @32541 has 27 MA's), (6, 32634), (8, 32688), (10, 32754), (12, 32802), (13, 32841), (14, 32895), (18, 32937), (20, 32967), (21, 33000), (25, 33090), (26, 33114), (27, 33234), (30, 33327), (31, 33360), (34, 33489), (35, 33501), (37, 33534), (38, 33573), (42, 33732), (47, 33891), (50, 33993), (51, 34014), (53, 34047), (54, 34056), (56, 34074), (57, 34095), (61, 34185), (62, 34197), (63,

(34245), (64, 34257), (65, 34281), (67, 34308), (69, 34362), (70, 34383), (71, 34404), (72, 34458), (74, 34479), (78, 34512), (80, 34548), (81, 34581), (82, 34635), (83, 34656), (84, 34683), (87, 34704), (88, 34722), (89, 34740), (90, 34743), (94, 34842), (101, 34941), (104, 35052), (107, 35094), (108, 35115), (112, 35217), (114, 35235), (119, 35286), (120, 35310), (124, 35370), (125, 35379),

Gene: Crestdrop_48 Start: 31764, Stop: 34649, Start Num: 4

Candidate Starts for Crestdrop_48:

(1, 31719), (Start: 4 @31764 has 27 MA's), (6, 31857), (8, 31911), (10, 31977), (12, 32025), (13, 32064), (14, 32118), (18, 32160), (20, 32190), (21, 32223), (25, 32313), (26, 32337), (27, 32457), (30, 32550), (34, 32712), (35, 32724), (37, 32757), (38, 32796), (39, 32835), (42, 32955), (43, 33006), (50, 33216), (51, 33237), (53, 33270), (54, 33279), (56, 33297), (57, 33318), (61, 33408), (62, 33420), (64, 33480), (65, 33504), (67, 33531), (69, 33585), (70, 33606), (71, 33627), (72, 33681), (74, 33702), (78, 33735), (80, 33771), (82, 33858), (83, 33879), (84, 33906), (87, 33927), (89, 33963), (90, 33966), (94, 34065), (101, 34164), (104, 34275), (107, 34317), (108, 34338), (114, 34458), (119, 34509), (120, 34533), (124, 34593), (125, 34602),

Gene: Cybele_47 Start: 32514, Stop: 35399, Start Num: 4

Candidate Starts for Cybele_47:

(1, 32469), (Start: 4 @32514 has 27 MA's), (6, 32607), (8, 32661), (10, 32727), (12, 32775), (13, 32814), (14, 32868), (18, 32910), (20, 32940), (21, 32973), (25, 33063), (26, 33087), (27, 33207), (30, 33300), (31, 33333), (34, 33462), (35, 33474), (37, 33507), (38, 33546), (42, 33705), (43, 33756), (47, 33864), (50, 33966), (51, 33987), (53, 34020), (54, 34029), (56, 34047), (57, 34068), (61, 34158), (62, 34170), (63, 34218), (64, 34230), (65, 34254), (67, 34281), (69, 34335), (70, 34356), (71, 34377), (72, 34431), (74, 34452), (78, 34485), (80, 34521), (81, 34554), (82, 34608), (83, 34629), (84, 34656), (87, 34677), (88, 34695), (89, 34713), (90, 34716), (94, 34815), (101, 34914), (104, 35025), (107, 35067), (108, 35088), (112, 35190), (114, 35208), (119, 35259), (120, 35283), (124, 35343), (125, 35352),

Gene: DannyDe_47 Start: 31739, Stop: 34624, Start Num: 4

Candidate Starts for DannyDe_47:

(1, 31694), (Start: 4 @31739 has 27 MA's), (6, 31832), (8, 31886), (10, 31952), (12, 32000), (13, 32039), (14, 32093), (18, 32135), (20, 32165), (21, 32198), (25, 32288), (26, 32312), (27, 32432), (30, 32525), (34, 32687), (35, 32699), (37, 32732), (38, 32771), (42, 32930), (43, 32981), (50, 33191), (51, 33212), (53, 33245), (54, 33254), (56, 33272), (57, 33293), (58, 33305), (61, 33383), (62, 33395), (63, 33443), (65, 33479), (67, 33506), (69, 33560), (70, 33581), (71, 33602), (72, 33656), (74, 33677), (78, 33710), (80, 33746), (82, 33833), (83, 33854), (84, 33881), (87, 33902), (88, 33920), (89, 33938), (90, 33941), (94, 34040), (101, 34139), (104, 34250), (107, 34292), (108, 34313), (112, 34415), (114, 34433), (119, 34484), (120, 34508), (124, 34568), (125, 34577),

Gene: Dauntless_47 Start: 32091, Stop: 34976, Start Num: 4

Candidate Starts for Dauntless_47:

(1, 32046), (Start: 4 @32091 has 27 MA's), (6, 32184), (8, 32238), (10, 32304), (11, 32313), (12, 32352), (13, 32391), (14, 32445), (18, 32487), (19, 32514), (20, 32517), (21, 32550), (25, 32640), (26, 32664), (27, 32784), (30, 32877), (34, 33039), (35, 33051), (37, 33084), (38, 33123), (42, 33282), (43, 33333), (50, 33543), (51, 33564), (53, 33597), (54, 33606), (56, 33624), (57, 33645), (58, 33657), (61, 33735), (62, 33747), (65, 33831), (67, 33858), (69, 33912), (70, 33933), (71, 33954), (72, 34008), (74, 34029), (78, 34062), (79, 34071), (80, 34098), (82, 34185), (83, 34206), (84, 34233), (87, 34254), (88, 34272), (89, 34290), (90, 34293), (94, 34392), (101, 34491), (104, 34602), (105, 34617), (107, 34644), (108, 34665), (112, 34767), (114, 34785), (119, 34836), (120, 34860), (124, 34920), (125, 34929),

Gene: Erudite_46 Start: 32091, Stop: 34976, Start Num: 4

Candidate Starts for Erudite_46:

(1, 32046), (Start: 4 @32091 has 27 MA's), (6, 32184), (8, 32238), (10, 32304), (11, 32313), (12, 32352), (13, 32391), (14, 32445), (18, 32487), (19, 32514), (20, 32517), (21, 32550), (25, 32640), (26,

32664), (27, 32784), (30, 32877), (34, 33039), (35, 33051), (37, 33084), (38, 33123), (42, 33282), (43, 33333), (50, 33543), (51, 33564), (53, 33597), (54, 33606), (56, 33624), (57, 33645), (58, 33657), (61, 33735), (62, 33747), (65, 33831), (67, 33858), (69, 33912), (70, 33933), (71, 33954), (72, 34008), (74, 34029), (78, 34062), (79, 34071), (80, 34098), (82, 34185), (83, 34206), (84, 34233), (87, 34254), (88, 34272), (89, 34290), (90, 34293), (94, 34392), (101, 34491), (104, 34602), (105, 34617), (107, 34644), (108, 34665), (112, 34767), (114, 34785), (119, 34836), (120, 34860), (124, 34920), (125, 34929),

Gene: FreddieHg_47 Start: 31755, Stop: 34640, Start Num: 4

Candidate Starts for FreddieHg_47:

(1, 31710), (Start: 4 @31755 has 27 MA's), (6, 31848), (8, 31902), (10, 31968), (12, 32016), (13, 32055), (14, 32109), (18, 32151), (20, 32181), (21, 32214), (25, 32304), (26, 32328), (27, 32448), (30, 32541), (31, 32574), (34, 32703), (35, 32715), (37, 32748), (38, 32787), (42, 32946), (43, 32997), (47, 33105), (50, 33207), (51, 33228), (53, 33261), (54, 33270), (56, 33288), (57, 33309), (58, 33321), (61, 33399), (62, 33411), (63, 33459), (64, 33471), (65, 33495), (67, 33522), (69, 33576), (70, 33597), (71, 33618), (72, 33672), (74, 33693), (78, 33726), (80, 33762), (81, 33795), (82, 33849), (83, 33870), (84, 33897), (87, 33918), (88, 33936), (89, 33954), (90, 33957), (94, 34056), (101, 34155), (104, 34266), (107, 34308), (108, 34329), (112, 34431), (114, 34449), (119, 34500), (120, 34524), (124, 34584), (125, 34593),

Gene: Gilda_47 Start: 32535, Stop: 35420, Start Num: 4

Candidate Starts for Gilda_47:

(1, 32490), (Start: 4 @32535 has 27 MA's), (6, 32628), (8, 32682), (10, 32748), (12, 32796), (13, 32835), (14, 32889), (18, 32931), (20, 32961), (21, 32994), (25, 33084), (26, 33108), (27, 33228), (30, 33321), (31, 33354), (34, 33483), (35, 33495), (37, 33528), (38, 33567), (42, 33726), (43, 33777), (47, 33885), (50, 33987), (51, 34008), (53, 34041), (54, 34050), (56, 34068), (57, 34089), (61, 34179), (62, 34191), (63, 34239), (64, 34251), (65, 34275), (67, 34302), (69, 34356), (70, 34377), (71, 34398), (72, 34452), (74, 34473), (78, 34506), (80, 34542), (81, 34575), (82, 34629), (83, 34650), (84, 34677), (87, 34698), (88, 34716), (89, 34734), (90, 34737), (94, 34836), (101, 34935), (104, 35046), (107, 35088), (108, 35109), (114, 35229), (119, 35280), (120, 35304), (124, 35364), (125, 35373),

Gene: Hager_48 Start: 31956, Stop: 34841, Start Num: 4

Candidate Starts for Hager_48:

(1, 31911), (Start: 4 @31956 has 27 MA's), (6, 32049), (8, 32103), (10, 32169), (12, 32217), (13, 32256), (18, 32352), (20, 32382), (21, 32415), (25, 32505), (26, 32529), (30, 32742), (34, 32904), (35, 32916), (37, 32949), (38, 32988), (42, 33147), (43, 33198), (46, 33303), (47, 33306), (50, 33408), (53, 33462), (54, 33471), (56, 33489), (57, 33510), (61, 33600), (62, 33612), (63, 33660), (64, 33672), (65, 33696), (67, 33723), (69, 33777), (71, 33819), (72, 33873), (74, 33894), (78, 33927), (80, 33963), (81, 33996), (82, 34050), (83, 34071), (84, 34098), (87, 34119), (88, 34137), (89, 34155), (90, 34158), (100, 34341), (101, 34356), (104, 34467), (107, 34509), (108, 34530), (114, 34650), (119, 34701), (120, 34725), (124, 34785), (125, 34794),

Gene: Haunter_47 Start: 31918, Stop: 34803, Start Num: 4

Candidate Starts for Haunter_47:

(1, 31873), (Start: 4 @31918 has 27 MA's), (6, 32011), (8, 32065), (10, 32131), (12, 32179), (13, 32218), (14, 32272), (18, 32314), (20, 32344), (21, 32377), (25, 32467), (26, 32491), (27, 32611), (30, 32704), (34, 32866), (35, 32878), (37, 32911), (38, 32950), (42, 33109), (43, 33160), (50, 33370), (51, 33391), (53, 33424), (54, 33433), (56, 33451), (57, 33472), (61, 33562), (62, 33574), (64, 33634), (65, 33658), (67, 33685), (69, 33739), (70, 33760), (71, 33781), (72, 33835), (74, 33856), (78, 33889), (80, 33925), (81, 33958), (82, 34012), (83, 34033), (84, 34060), (87, 34081), (88, 34099), (89, 34117), (90, 34120), (94, 34219), (101, 34318), (104, 34429), (105, 34444), (107, 34471), (108, 34492), (112, 34594), (114, 34612), (119, 34663), (120, 34687), (124, 34747), (125, 34756),

Gene: Hiddenleaf_47 Start: 31745, Stop: 34630, Start Num: 4

Candidate Starts for Hiddenleaf_47:

(1, 31700), (Start: 4 @31745 has 27 MA's), (6, 31838), (8, 31892), (10, 31958), (12, 32006), (13, 32045), (14, 32099), (18, 32141), (20, 32171), (21, 32204), (25, 32294), (26, 32318), (27, 32438), (30, 32531), (31, 32564), (34, 32693), (35, 32705), (37, 32738), (38, 32777), (42, 32936), (43, 32987), (47, 33095), (50, 33197), (51, 33218), (53, 33251), (54, 33260), (56, 33278), (57, 33299), (58, 33311), (61, 33389), (62, 33401), (63, 33449), (64, 33461), (65, 33485), (67, 33512), (69, 33566), (70, 33587), (71, 33608), (72, 33662), (74, 33683), (78, 33716), (80, 33752), (81, 33785), (82, 33839), (83, 33860), (84, 33887), (89, 33944), (90, 33947), (91, 33968), (92, 33980), (101, 34145), (104, 34256), (107, 34298), (108, 34319), (112, 34421), (114, 34439), (119, 34490), (120, 34514), (124, 34574), (125, 34583),

Gene: JDawG_46 Start: 32150, Stop: 35035, Start Num: 4

Candidate Starts for JDawG_46:

(1, 32105), (Start: 4 @32150 has 27 MA's), (6, 32243), (8, 32297), (10, 32363), (12, 32411), (13, 32450), (14, 32504), (18, 32546), (19, 32573), (20, 32576), (21, 32609), (25, 32699), (26, 32723), (27, 32843), (30, 32936), (34, 33098), (35, 33110), (37, 33143), (38, 33182), (42, 33341), (43, 33392), (53, 33656), (54, 33665), (56, 33683), (57, 33704), (58, 33716), (61, 33794), (62, 33806), (65, 33890), (67, 33917), (69, 33971), (70, 33992), (71, 34013), (72, 34067), (74, 34088), (78, 34121), (79, 34130), (80, 34157), (82, 34244), (83, 34265), (84, 34292), (87, 34313), (88, 34331), (89, 34349), (90, 34352), (94, 34451), (101, 34550), (104, 34661), (107, 34703), (108, 34724), (112, 34826), (114, 34844), (119, 34895), (120, 34919), (124, 34979), (125, 34988),

Gene: JingleBells_47 Start: 31881, Stop: 34766, Start Num: 4

Candidate Starts for JingleBells_47:

(1, 31836), (Start: 4 @31881 has 27 MA's), (6, 31974), (8, 32028), (10, 32094), (12, 32142), (13, 32181), (18, 32277), (20, 32307), (21, 32340), (25, 32430), (26, 32454), (27, 32574), (30, 32667), (34, 32829), (35, 32841), (37, 32874), (38, 32913), (42, 33072), (43, 33123), (50, 33333), (51, 33354), (53, 33387), (54, 33396), (56, 33414), (57, 33435), (58, 33447), (61, 33525), (62, 33537), (64, 33597), (65, 33621), (67, 33648), (69, 33702), (70, 33723), (71, 33744), (72, 33798), (74, 33819), (78, 33852), (80, 33888), (82, 33975), (83, 33996), (84, 34023), (87, 34044), (88, 34062), (89, 34080), (90, 34083), (94, 34182), (101, 34281), (103, 34389), (104, 34392), (107, 34434), (108, 34455), (112, 34557), (114, 34575), (119, 34626), (120, 34650), (124, 34710), (125, 34719),

Gene: Karate_46 Start: 32536, Stop: 35421, Start Num: 4

Candidate Starts for Karate_46:

(1, 32491), (Start: 4 @32536 has 27 MA's), (6, 32629), (8, 32683), (10, 32749), (12, 32797), (13, 32836), (14, 32890), (18, 32932), (20, 32962), (21, 32995), (25, 33085), (26, 33109), (30, 33322), (34, 33484), (35, 33496), (37, 33529), (38, 33568), (42, 33727), (43, 33778), (50, 33988), (53, 34042), (54, 34051), (56, 34069), (57, 34090), (61, 34180), (62, 34192), (63, 34240), (64, 34252), (65, 34276), (67, 34303), (69, 34357), (70, 34378), (71, 34399), (72, 34453), (74, 34474), (78, 34507), (80, 34543), (81, 34576), (82, 34630), (83, 34651), (84, 34678), (87, 34699), (89, 34735), (90, 34738), (101, 34936), (102, 35041), (104, 35047), (107, 35089), (108, 35110), (112, 35212), (114, 35230), (119, 35281), (120, 35305), (124, 35365), (125, 35374),

Gene: Kate_48 Start: 32546, Stop: 35431, Start Num: 4

Candidate Starts for Kate_48:

(1, 32501), (Start: 4 @32546 has 27 MA's), (6, 32639), (8, 32693), (10, 32759), (12, 32807), (13, 32846), (14, 32900), (18, 32942), (20, 32972), (21, 33005), (25, 33095), (26, 33119), (27, 33239), (30, 33332), (31, 33365), (34, 33494), (35, 33506), (37, 33539), (38, 33578), (42, 33737), (43, 33788), (47, 33896), (50, 33998), (51, 34019), (53, 34052), (54, 34061), (56, 34079), (57, 34100), (61, 34190), (62, 34202), (63, 34250), (64, 34262), (65, 34286), (67, 34313), (69, 34367), (70, 34388), (71, 34409), (72, 34463), (74, 34484), (78, 34517), (80, 34553), (81, 34586), (82, 34640), (83, 34661), (84, 34688), (87, 34709), (88, 34727), (89, 34745), (90, 34748), (94, 34847), (101, 34946), (104, 35057), (107, 35099), (108, 35120), (114, 35240), (119, 35291), (120, 35315), (124, 35375), (125, 35384),

Gene: Kors_52 Start: 33566, Stop: 36436, Start Num: 4

Candidate Starts for Kors_52:

(3, 33548), (Start: 4 @33566 has 27 MA's), (5, 33605), (6, 33662), (8, 33716), (12, 33830), (13, 33869), (20, 33974), (22, 34052), (24, 34076), (25, 34097), (26, 34121), (28, 34250), (29, 34316), (32, 34400), (34, 34496), (35, 34508), (36, 34532), (38, 34583), (41, 34712), (48, 34949), (51, 35024), (53, 35057), (55, 35078), (56, 35084), (59, 35126), (60, 35177), (61, 35195), (62, 35207), (65, 35291), (67, 35318), (71, 35414), (72, 35468), (74, 35489), (75, 35504), (76, 35507), (78, 35522), (80, 35558), (82, 35645), (83, 35666), (84, 35693), (86, 35711), (88, 35732), (89, 35750), (91, 35774), (95, 35885), (96, 35888), (98, 35915), (99, 35930), (100, 35936), (103, 36059), (104, 36062), (108, 36125), (110, 36197), (113, 36239), (114, 36245), (116, 36281), (119, 36296), (124, 36380), (125, 36389),

Gene: Krampus_47 Start: 32549, Stop: 35434, Start Num: 4

Candidate Starts for Krampus_47:

(1, 32504), (Start: 4 @32549 has 27 MA's), (6, 32642), (8, 32696), (10, 32762), (12, 32810), (13, 32849), (14, 32903), (18, 32945), (20, 32975), (21, 33008), (25, 33098), (26, 33122), (27, 33242), (30, 33335), (31, 33368), (34, 33497), (35, 33509), (37, 33542), (38, 33581), (42, 33740), (43, 33791), (47, 33899), (50, 34001), (51, 34022), (53, 34055), (54, 34064), (56, 34082), (57, 34103), (61, 34193), (62, 34205), (63, 34253), (64, 34265), (65, 34289), (67, 34316), (69, 34370), (70, 34391), (71, 34412), (72, 34466), (74, 34487), (78, 34520), (80, 34556), (81, 34589), (82, 34643), (83, 34664), (84, 34691), (87, 34712), (88, 34730), (89, 34748), (90, 34751), (94, 34850), (101, 34949), (104, 35060), (107, 35102), (108, 35123), (112, 35225), (114, 35243), (119, 35294), (120, 35318), (124, 35378), (125, 35387),

Gene: MortySmith_45 Start: 31568, Stop: 34453, Start Num: 4

Candidate Starts for MortySmith_45:

(1, 31523), (Start: 4 @31568 has 27 MA's), (6, 31661), (8, 31715), (10, 31781), (12, 31829), (13, 31868), (14, 31922), (18, 31964), (19, 31991), (20, 31994), (21, 32027), (25, 32117), (26, 32141), (27, 32261), (30, 32354), (34, 32516), (35, 32528), (37, 32561), (38, 32600), (42, 32759), (43, 32810), (53, 33074), (54, 33083), (56, 33101), (57, 33122), (58, 33134), (61, 33212), (62, 33224), (65, 33308), (67, 33335), (69, 33389), (70, 33410), (71, 33431), (72, 33485), (74, 33506), (78, 33539), (79, 33548), (80, 33575), (82, 33662), (83, 33683), (84, 33710), (88, 33749), (89, 33767), (90, 33770), (94, 33869), (101, 33968), (104, 34079), (107, 34121), (108, 34142), (112, 34244), (114, 34262), (119, 34313), (120, 34337), (124, 34397), (125, 34406),

Gene: NarutoRun_47 Start: 32514, Stop: 35399, Start Num: 4

Candidate Starts for NarutoRun_47:

(1, 32469), (Start: 4 @32514 has 27 MA's), (6, 32607), (8, 32661), (10, 32727), (12, 32775), (13, 32814), (14, 32868), (18, 32910), (20, 32940), (21, 32973), (25, 33063), (26, 33087), (27, 33207), (30, 33300), (31, 33333), (34, 33462), (35, 33474), (37, 33507), (38, 33546), (42, 33705), (43, 33756), (47, 33864), (50, 33966), (51, 33987), (53, 34020), (54, 34029), (56, 34047), (57, 34068), (61, 34158), (62, 34170), (63, 34218), (64, 34230), (65, 34254), (67, 34281), (69, 34335), (70, 34356), (71, 34377), (72, 34431), (74, 34452), (78, 34485), (80, 34521), (81, 34554), (82, 34608), (83, 34629), (84, 34656), (87, 34677), (88, 34695), (89, 34713), (90, 34716), (94, 34815), (101, 34914), (104, 35025), (107, 35067), (108, 35088), (112, 35190), (114, 35208), (119, 35259), (120, 35283), (124, 35343), (125, 35352),

Gene: Neptune_47 Start: 32514, Stop: 35399, Start Num: 4

Candidate Starts for Neptune_47:

(1, 32469), (Start: 4 @32514 has 27 MA's), (6, 32607), (8, 32661), (10, 32727), (12, 32775), (13, 32814), (14, 32868), (18, 32910), (20, 32940), (21, 32973), (25, 33063), (26, 33087), (27, 33207), (30, 33300), (31, 33333), (34, 33462), (35, 33474), (37, 33507), (38, 33546), (42, 33705), (43, 33756), (47, 33864), (50, 33966), (51, 33987), (53, 34020), (54, 34029), (56, 34047), (57, 34068), (61, 34158), (62, 34170), (63, 34218), (64, 34230), (65, 34254), (67, 34281), (69, 34335), (70, 34356), (71, 34377), (72, 34431), (74, 34452), (78, 34485), (80, 34521), (81, 34554), (82, 34608), (83, 34629), (84, 34656), (87,

(34677), (88, 34695), (89, 34713), (90, 34716), (94, 34815), (101, 34914), (104, 35025), (107, 35067), (108, 35088), (112, 35190), (114, 35208), (119, 35259), (120, 35283), (124, 35343), (125, 35352),

Gene: OverHedge_48 Start: 32504, Stop: 35389, Start Num: 4

Candidate Starts for OverHedge_48:

(1, 32459), (Start: 4 @32504 has 27 MA's), (6, 32597), (8, 32651), (10, 32717), (12, 32765), (13, 32804), (14, 32858), (18, 32900), (20, 32930), (21, 32963), (25, 33053), (26, 33077), (27, 33197), (30, 33290), (34, 33452), (35, 33464), (37, 33497), (38, 33536), (42, 33695), (43, 33746), (47, 33854), (50, 33956), (51, 33977), (53, 34010), (54, 34019), (56, 34037), (57, 34058), (61, 34148), (62, 34160), (63, 34208), (65, 34244), (67, 34271), (69, 34325), (70, 34346), (71, 34367), (72, 34421), (74, 34442), (78, 34475), (80, 34511), (81, 34544), (82, 34598), (83, 34619), (84, 34646), (87, 34667), (88, 34685), (89, 34703), (90, 34706), (94, 34805), (101, 34904), (104, 35015), (107, 35057), (108, 35078), (114, 35198), (119, 35249), (120, 35273), (124, 35333), (125, 35342),

Gene: Pharpay_47 Start: 32559, Stop: 35444, Start Num: 4

Candidate Starts for Pharpay_47:

(1, 32514), (Start: 4 @32559 has 27 MA's), (6, 32652), (8, 32706), (10, 32772), (12, 32820), (13, 32859), (14, 32913), (18, 32955), (20, 32985), (21, 33018), (25, 33108), (26, 33132), (27, 33252), (30, 33345), (31, 33378), (34, 33507), (35, 33519), (37, 33552), (38, 33591), (42, 33750), (43, 33801), (47, 33909), (50, 34011), (51, 34032), (53, 34065), (54, 34074), (56, 34092), (57, 34113), (61, 34203), (62, 34215), (63, 34263), (64, 34275), (65, 34299), (67, 34326), (69, 34380), (70, 34401), (71, 34422), (72, 34476), (74, 34497), (78, 34530), (80, 34566), (81, 34599), (82, 34653), (83, 34674), (84, 34701), (87, 34722), (88, 34740), (89, 34758), (90, 34761), (94, 34860), (101, 34959), (104, 35070), (107, 35112), (108, 35133), (112, 35235), (114, 35253), (119, 35304), (120, 35328), (124, 35388), (125, 35397),

Gene: PhunaPhoke_47 Start: 32529, Stop: 35414, Start Num: 4

Candidate Starts for PhunaPhoke_47:

(1, 32484), (Start: 4 @32529 has 27 MA's), (6, 32622), (8, 32676), (10, 32742), (12, 32790), (13, 32829), (14, 32883), (18, 32925), (20, 32955), (21, 32988), (25, 33078), (26, 33102), (27, 33222), (30, 33315), (31, 33348), (34, 33477), (35, 33489), (37, 33522), (38, 33561), (42, 33720), (43, 33771), (47, 33879), (50, 33981), (51, 34002), (53, 34035), (54, 34044), (56, 34062), (57, 34083), (61, 34173), (62, 34185), (63, 34233), (64, 34245), (65, 34269), (67, 34296), (69, 34350), (70, 34371), (71, 34392), (72, 34446), (74, 34467), (78, 34500), (80, 34536), (81, 34569), (82, 34623), (83, 34644), (84, 34671), (87, 34692), (88, 34710), (89, 34728), (90, 34731), (94, 34830), (101, 34929), (104, 35040), (107, 35082), (108, 35103), (112, 35205), (114, 35223), (119, 35274), (120, 35298), (124, 35358), (125, 35367),

Gene: Potty_47 Start: 32534, Stop: 35419, Start Num: 4

Candidate Starts for Potty_47:

(1, 32489), (Start: 4 @32534 has 27 MA's), (6, 32627), (8, 32681), (10, 32747), (12, 32795), (13, 32834), (14, 32888), (18, 32930), (20, 32960), (21, 32993), (25, 33083), (26, 33107), (27, 33227), (30, 33320), (34, 33482), (35, 33494), (37, 33527), (38, 33566), (42, 33725), (43, 33776), (47, 33884), (50, 33986), (51, 34007), (53, 34040), (54, 34049), (56, 34067), (57, 34088), (61, 34178), (62, 34190), (63, 34238), (65, 34274), (67, 34301), (69, 34355), (70, 34376), (71, 34397), (72, 34451), (74, 34472), (78, 34505), (80, 34541), (81, 34574), (82, 34628), (83, 34649), (84, 34676), (87, 34697), (88, 34715), (89, 34733), (90, 34736), (94, 34835), (101, 34934), (104, 35045), (107, 35087), (108, 35108), (112, 35210), (114, 35228), (119, 35279), (120, 35303), (124, 35363), (125, 35372),

Gene: Poultress_47 Start: 32852, Stop: 35737, Start Num: 4

Candidate Starts for Poultress_47:

(1, 32807), (Start: 4 @32852 has 27 MA's), (6, 32945), (8, 32999), (10, 33065), (12, 33113), (13, 33152), (14, 33206), (18, 33248), (20, 33278), (21, 33311), (25, 33401), (26, 33425), (27, 33545), (30, 33638), (31, 33671), (34, 33800), (35, 33812), (37, 33845), (38, 33884), (42, 34043), (43, 34094), (47, 34202), (50, 34304), (51, 34325), (53, 34358), (54, 34367), (56, 34385), (57, 34406), (61, 34496), (62,

(34508), (63, 34556), (64, 34568), (65, 34592), (67, 34619), (69, 34673), (70, 34694), (71, 34715), (72, 34769), (74, 34790), (78, 34823), (80, 34859), (81, 34892), (82, 34946), (83, 34967), (84, 34994), (87, 35015), (88, 35033), (89, 35051), (90, 35054), (94, 35153), (101, 35252), (104, 35363), (107, 35405), (108, 35426), (112, 35528), (114, 35546), (119, 35597), (120, 35621), (124, 35681), (125, 35690),

Gene: Rachella_47 Start: 32540, Stop: 35425, Start Num: 4

Candidate Starts for Rachella_47:

(1, 32495), (Start: 4 @32540 has 27 MA's), (6, 32633), (8, 32687), (10, 32753), (12, 32801), (13, 32840), (14, 32894), (18, 32936), (20, 32966), (21, 32999), (25, 33089), (26, 33113), (27, 33233), (30, 33326), (31, 33359), (34, 33488), (35, 33500), (37, 33533), (38, 33572), (42, 33731), (43, 33782), (47, 33890), (50, 33992), (51, 34013), (53, 34046), (54, 34055), (56, 34073), (57, 34094), (61, 34184), (62, 34196), (63, 34244), (64, 34256), (65, 34280), (67, 34307), (69, 34361), (70, 34382), (71, 34403), (72, 34457), (74, 34478), (78, 34511), (80, 34547), (81, 34580), (82, 34634), (83, 34655), (84, 34682), (87, 34703), (88, 34721), (89, 34739), (90, 34742), (94, 34841), (101, 34940), (104, 35051), (107, 35093), (108, 35114), (112, 35216), (114, 35234), (119, 35285), (120, 35309), (124, 35369), (125, 35378),

Gene: Rie18_47 Start: 32040, Stop: 34925, Start Num: 4

Candidate Starts for Rie18_47:

(1, 31995), (Start: 4 @32040 has 27 MA's), (6, 32133), (8, 32187), (10, 32253), (12, 32301), (13, 32340), (14, 32394), (18, 32436), (20, 32466), (21, 32499), (25, 32589), (26, 32613), (30, 32826), (34, 32988), (35, 33000), (37, 33033), (38, 33072), (42, 33231), (43, 33282), (46, 33387), (50, 33492), (53, 33546), (54, 33555), (56, 33573), (57, 33594), (61, 33684), (62, 33696), (63, 33744), (64, 33756), (65, 33780), (67, 33807), (69, 33861), (71, 33903), (72, 33957), (74, 33978), (78, 34011), (80, 34047), (81, 34080), (82, 34134), (83, 34155), (84, 34182), (87, 34203), (89, 34239), (90, 34242), (101, 34440), (104, 34551), (107, 34593), (108, 34614), (112, 34716), (114, 34734), (119, 34785), (120, 34809), (124, 34869), (125, 34878),

Gene: RikSengupta_51 Start: 33591, Stop: 36461, Start Num: 4

Candidate Starts for RikSengupta_51:

(3, 33573), (Start: 4 @33591 has 27 MA's), (5, 33630), (6, 33687), (8, 33741), (12, 33855), (17, 33966), (20, 33999), (22, 34077), (24, 34101), (25, 34122), (26, 34146), (28, 34275), (29, 34341), (32, 34425), (33, 34434), (34, 34521), (35, 34533), (36, 34557), (38, 34608), (41, 34737), (48, 34974), (51, 35049), (53, 35082), (55, 35103), (56, 35109), (59, 35151), (60, 35202), (61, 35220), (62, 35232), (65, 35316), (67, 35343), (71, 35439), (72, 35493), (74, 35514), (75, 35529), (76, 35532), (78, 35547), (80, 35583), (82, 35670), (83, 35691), (84, 35718), (86, 35736), (88, 35757), (89, 35775), (91, 35799), (95, 35910), (96, 35913), (98, 35940), (99, 35955), (100, 35961), (103, 36084), (104, 36087), (108, 36150), (110, 36222), (114, 36270), (115, 36273), (116, 36306), (119, 36321), (121, 36348), (124, 36405), (125, 36414),

Gene: Snakehole_47 Start: 31723, Stop: 34608, Start Num: 4

Candidate Starts for Snakehole_47:

(1, 31678), (Start: 4 @31723 has 27 MA's), (6, 31816), (8, 31870), (10, 31936), (12, 31984), (13, 32023), (14, 32077), (18, 32119), (20, 32149), (21, 32182), (25, 32272), (26, 32296), (27, 32416), (30, 32509), (31, 32542), (34, 32671), (35, 32683), (37, 32716), (38, 32755), (42, 32914), (43, 32965), (47, 33073), (50, 33175), (51, 33196), (53, 33229), (54, 33238), (56, 33256), (57, 33277), (58, 33289), (61, 33367), (62, 33379), (63, 33427), (64, 33439), (65, 33463), (67, 33490), (69, 33544), (70, 33565), (71, 33586), (72, 33640), (74, 33661), (78, 33694), (80, 33730), (81, 33763), (82, 33817), (83, 33838), (84, 33865), (87, 33886), (88, 33904), (89, 33922), (90, 33925), (94, 34024), (101, 34123), (104, 34234), (107, 34276), (108, 34297), (112, 34399), (114, 34417), (119, 34468), (120, 34492), (124, 34552), (125, 34561),

Gene: Sparcetus_51 Start: 33468, Stop: 36338, Start Num: 4

Candidate Starts for Sparcetus_51:

(3, 33450), (Start: 4 @33468 has 27 MA's), (5, 33507), (6, 33564), (8, 33618), (12, 33732), (13, 33771), (20, 33876), (24, 33978), (25, 33999), (26, 34023), (28, 34152), (29, 34218), (32, 34302), (33, 34311), (34, 34398), (35, 34410), (36, 34434), (38, 34485), (41, 34614), (48, 34851), (51, 34926), (53, 34959), (55, 34980), (56, 34986), (59, 35028), (60, 35079), (61, 35097), (62, 35109), (65, 35193), (67, 35220), (71, 35316), (72, 35370), (74, 35391), (75, 35406), (76, 35409), (78, 35424), (80, 35460), (82, 35547), (83, 35568), (84, 35595), (86, 35613), (88, 35634), (89, 35652), (91, 35676), (95, 35787), (96, 35790), (98, 35817), (99, 35832), (100, 35838), (103, 35961), (104, 35964), (108, 36027), (110, 36099), (114, 36147), (119, 36198), (121, 36225), (124, 36282), (125, 36291),

Gene: Tedro_47 Start: 31974, Stop: 34859, Start Num: 4

Candidate Starts for Tedro_47:

(1, 31929), (Start: 4 @31974 has 27 MA's), (6, 32067), (8, 32121), (10, 32187), (12, 32235), (13, 32274), (14, 32328), (18, 32370), (20, 32400), (25, 32523), (26, 32547), (27, 32667), (30, 32760), (34, 32922), (35, 32934), (37, 32967), (38, 33006), (42, 33165), (43, 33216), (50, 33426), (51, 33447), (53, 33480), (54, 33489), (56, 33507), (57, 33528), (61, 33618), (62, 33630), (64, 33690), (65, 33714), (67, 33741), (69, 33795), (70, 33816), (71, 33837), (72, 33891), (74, 33912), (78, 33945), (80, 33981), (81, 34014), (82, 34068), (83, 34089), (84, 34116), (87, 34137), (88, 34155), (89, 34173), (90, 34176), (94, 34275), (101, 34374), (104, 34485), (105, 34500), (107, 34527), (108, 34548), (112, 34650), (114, 34668), (119, 34719), (124, 34803), (125, 34812),

Gene: TinyMiny_51 Start: 33489, Stop: 36359, Start Num: 4

Candidate Starts for TinyMiny_51:

(3, 33471), (Start: 4 @33489 has 27 MA's), (5, 33528), (6, 33585), (8, 33639), (12, 33753), (13, 33792), (20, 33897), (24, 33999), (25, 34020), (26, 34044), (28, 34173), (29, 34239), (32, 34323), (33, 34332), (34, 34419), (35, 34431), (36, 34455), (38, 34506), (41, 34635), (48, 34872), (51, 34947), (53, 34980), (55, 35001), (56, 35007), (59, 35049), (60, 35100), (61, 35118), (62, 35130), (65, 35214), (67, 35241), (71, 35337), (72, 35391), (74, 35412), (75, 35427), (76, 35430), (78, 35445), (80, 35481), (82, 35568), (83, 35589), (84, 35616), (86, 35634), (88, 35655), (89, 35673), (91, 35697), (95, 35808), (96, 35811), (98, 35838), (99, 35853), (100, 35859), (103, 35982), (104, 35985), (108, 36048), (109, 36117), (110, 36120), (112, 36150), (114, 36168), (116, 36204), (119, 36219), (121, 36246), (124, 36303), (126, 36348),

Gene: Wollypog_50 Start: 37034, Stop: 39988, Start Num: 2

Candidate Starts for Wollypog_50:

(Start: 2 @37034 has 1 MA's), (7, 37235), (9, 37256), (12, 37352), (15, 37451), (16, 37460), (21, 37547), (22, 37592), (23, 37613), (26, 37664), (34, 38039), (38, 38126), (39, 38165), (40, 38231), (41, 38255), (44, 38372), (45, 38375), (49, 38504), (52, 38570), (53, 38600), (57, 38648), (61, 38741), (66, 38843), (67, 38864), (68, 38870), (69, 38918), (71, 38960), (72, 39014), (73, 39029), (74, 39035), (76, 39053), (77, 39056), (80, 39104), (85, 39248), (93, 39359), (97, 39437), (106, 39635), (107, 39650), (111, 39749), (115, 39794), (117, 39830), (118, 39833), (119, 39842), (121, 39869), (122, 39893), (123, 39902), (124, 39926),