

1: Euratis_10	10	37	41	48	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
2: IG1_12	10	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
3: phiB11_10	10	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
4: Samora_10	10	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
5: Libboob_10	10	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
6: Vash_10	10	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
7: Shawly_12	12	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
8: Sebastiaurus_12	12	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
9: RemusPopin_12	12	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
10: Heather_10	10	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
11: JaRealMias_16	16	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
12: JoJo_16	16	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
13: Jv_16	16	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
14: Kaleb_16	16	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
15: KalyaSalad_16	16	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
16: Kshia_16+1	16	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
17: Kids_mdwang_16	16	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
18: Kead_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
19: Kiyas_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
20: Kpouer_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
21: KalaNica_19	19	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
22: Antuna_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
23: Drops_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
24: NCRodriguez_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
25: Phingu_24	24	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
26: Mariel_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
27: Brett_22	22	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
28: Carmio_23	23	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
29: Phoneygl_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
30: Jakelyne_24	24	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
31: PhillyJax_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
32: Bush_24	24	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
33: Warren_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
34: Winchester_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
35: CookieLog_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
36: Guzman_23	23	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
37: Pickles_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
38: Teng_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
39: Sweetur_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
40: DelaGara_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
41: Lesiram_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
42: Gingerb_21	21	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
43: Wracklin_26	26	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329
44: Parvaparticeps_45	45	37	41	49	93	88	75	80	86	94	6	108	143	154	174	184	203	228	231	241	249	275	289	286	294	301	329

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 278274 Report

This analysis was run 02/07/26 on database version 634.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 278274 has 51 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Euratis_12
- Track 2 : TG1_12
- Track 3 : phiBT1_43
- Track 4 : Samora_12
- Track 5 : Lilbooboo_12
- Track 6 : Vash_12
- Track 7 : Shawty_12
- Track 8 : Sebastisaurus_12
- Track 9 : RemusLoopin_12
- Track 10 : Heather_12
- Track 11 : DaRealMyers_16, Tubberson_16
- Track 12 : SoJo_16
- Track 13 : SV1_16
- Track 14 : Raleigh_16
- Track 15 : PapayaSalad_16
- Track 16 : Lishka_16, Austintatious_16
- Track 17 : Ididsumtinwong_16, Bioscum_16
- Track 18 : Keanu_21
- Track 19 : Hiya_21
- Track 20 : Spocter_21
- Track 21 : Galactica_19
- Track 22 : Antuna_22, Losacky_23, MenE_22, Violeta_23
- Track 23 : Dropshot_21, Appa_21
- Track 24 : NCRodriguez_23
- Track 25 : Phingu_24
- Track 26 : Mariel_25
- Track 27 : Blett_22
- Track 28 : Carrillo_23
- Track 29 : Phonegingi_21
- Track 30 : Jakelyne_24
- Track 31 : PhillyJawn_22
- Track 32 : Bush_22
- Track 33 : Warren_22

- Track 34 : Winchester007_37
- Track 35 : CookieDog_22
- Track 36 : Guzman_23
- Track 37 : Pickles13_21
- Track 38 : Teng_22
- Track 39 : Sweetums_20
- Track 40 : DelaGarza_20
- Track 41 : Lesiram_21
- Track 42 : Gingerbug_18
- Track 43 : Wrackline_26
- Track 44 : Parvaparticeps_35

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

The start number called the most often in the published annotations is 9, it was called in 15 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antuna_22, Appa_21, Blett_22, Bush_22, Carrillo_23, CookieDog_22, DelaGarza_20, Dropshot_21, Gingerbug_18, Guzman_23, Jakelyne_24, Lesiram_21, Losacky_23, Mariel_25, MenE_22, NCRodriguez_23, Parvaparticeps_35, PhillyJawn_22, Phingu_24, Phonegingi_21, Pickles13_21, Sweetums_20, Teng_22, Violeta_23, Warren_22, Winchester007_37, Wrackline_26,

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

- Raleigh_16,

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

- Austintatious_16, Bioscum_16, DaRealMyers_16, Euratis_12, Galactica_19, Heather_12, Hiya_21, Ididsumtinwong_16, Keanu_21, Lilbooboo_12, Lishka_16, PapayaSalad_16, RemusLoopin_12, SV1_16, Samora_12, Sebastisaurus_12, Shawty_12, SoJo_16, Spocter_21, TG1_12, Tubberson_16, Vash_12, phiBT1_43,

Summary by start number:

Start 2:

- Found in 14 of 51 (27.5%) of genes in pham
- Manual Annotations of this start: 13 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Austintatious_16 (BC3), Bioscum_16 (BC3), DaRealMyers_16 (BC1), Galactica_19 (BQ), Hiya_21 (BQ), Ididsumtinwong_16 (BC3), Keanu_21 (BQ), Lishka_16 (BC3), PapayaSalad_16 (BC3), Raleigh_16 (BC2), SV1_16 (BC1), SoJo_16 (BC1), Spocter_21 (BQ), Tubberson_16 (BC1),

Start 8:

- Found in 10 of 51 (19.6%) of genes in pham
- Manual Annotations of this start: 9 of 37
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Euratis_12 (BB1), Heather_12 (BB2), Lilbooboo_12 (BB1), RemusLoopin_12 (BB2), Samora_12 (BB1), Sebastisaurus_12 (BB2), Shawty_12 (BB1), TG1_12 (BB1), Vash_12 (BB1), phiBT1_43 (BB1),

Start 9:

- Found in 28 of 51 (54.9%) of genes in pham
- Manual Annotations of this start: 15 of 37
- Called 96.4% of time when present
- Phage (with cluster) where this start called: Antuna_22 (GA), Appa_21 (GA), Blett_22 (GA), Bush_22 (GA), Carrillo_23 (GA), CookieDog_22 (GA), DelaGarza_20 (GF), Dropshot_21 (GA), Gingerbug_18 (GF), Guzman_23 (GA), Jakelyne_24 (GA), Lesiram_21 (GF), Losacky_23 (GA), Mariel_25 (GA), MenE_22 (GA), NCRodriguez_23 (GA), Parvaparticeps_35 (UNK), PhillyJawn_22 (GA), Phingu_24 (GA), Phonegingi_21 (GA), Pickles13_21 (GA), Sweetums_20 (GF), Teng_22 (GF), Violeta_23 (GA), Warren_22 (GA), Winchester007_37 (GA), Wrackline_26 (GF),

Summary by clusters:

There are 9 clusters represented in this pham: BQ, BB2, GF, BB1, GA, UNK, BC1, BC2, BC3,

Info for manual annotations of cluster BB1:

- Start number 8 was manually annotated 6 times for cluster BB1.

Info for manual annotations of cluster BB2:

- Start number 8 was manually annotated 3 times for cluster BB2.

Info for manual annotations of cluster BC1:

- Start number 2 was manually annotated 3 times for cluster BC1.

Info for manual annotations of cluster BC2:

- Start number 2 was manually annotated 1 time for cluster BC2.

Info for manual annotations of cluster BC3:

- Start number 2 was manually annotated 5 times for cluster BC3.

Info for manual annotations of cluster BQ:

- Start number 2 was manually annotated 4 times for cluster BQ.

Info for manual annotations of cluster GA:

- Start number 9 was manually annotated 11 times for cluster GA.

Info for manual annotations of cluster GF:

- Start number 9 was manually annotated 4 times for cluster GF.

Gene Information:

Gene: Antuna_22 Start: 11505, Stop: 13703, Start Num: 9

Candidate Starts for Antuna_22:

(Start: 9 @11505 has 15 MA's), (18, 11580), (24, 11631), (27, 11658), (39, 11751), (42, 11808), (47, 11850), (50, 11883), (52, 11895), (60, 11946), (61, 11949), (63, 11958), (64, 11961), (66, 11997), (67, 12003), (68, 12006), (70, 12018), (72, 12027), (74, 12051), (85, 12150), (91, 12210), (95, 12249), (96, 12264), (100, 12321), (112, 12459), (114, 12489), (116, 12501), (119, 12525), (121, 12534), (125, 12555), (126, 12558), (129, 12570), (133, 12588), (142, 12630), (148, 12660), (175, 12801), (185, 12858), (197, 12924), (213, 12984), (215, 12993), (231, 13056), (243, 13122), (321, 13473), (326, 13497), (334, 13536), (337, 13557),

Gene: Appa_21 Start: 11367, Stop: 13565, Start Num: 9

Candidate Starts for Appa_21:

(Start: 9 @11367 has 15 MA's), (18, 11442), (24, 11493), (27, 11520), (39, 11613), (42, 11670), (47, 11712), (50, 11745), (52, 11757), (60, 11808), (61, 11811), (63, 11820), (64, 11823), (66, 11859), (67, 11865), (68, 11868), (70, 11880), (72, 11889), (74, 11913), (85, 12012), (91, 12072), (95, 12111), (96, 12126), (100, 12183), (112, 12321), (114, 12351), (116, 12363), (119, 12387), (121, 12396), (125, 12417), (126, 12420), (129, 12432), (133, 12450), (142, 12492), (148, 12522), (175, 12663), (185, 12720), (197, 12786), (213, 12846), (215, 12855), (231, 12918), (243, 12984), (258, 13017), (321, 13335), (326, 13359), (334, 13398), (337, 13419),

Gene: Austintatious_16 Start: 9780, Stop: 12197, Start Num: 2

Candidate Starts for Austintatious_16:

(Start: 2 @9780 has 13 MA's), (4, 9792), (5, 9846), (6, 9867), (28, 10041), (31, 10062), (38, 10119), (40, 10152), (49, 10254), (56, 10296), (63, 10338), (64, 10341), (65, 10353), (75, 10431), (80, 10494), (87, 10557), (89, 10575), (91, 10587), (96, 10641), (97, 10650), (99, 10695), (100, 10698), (108, 10779), (115, 10866), (116, 10869), (123, 10917), (128, 10935), (132, 10953), (134, 10965), (157, 11076), (165, 11133), (171, 11169), (174, 11190), (181, 11223), (182, 11229), (188, 11262), (194, 11283), (196, 11316), (203, 11340), (240, 11538), (282, 11796), (285, 11817), (290, 11841), (292, 11862), (304, 11916), (316, 11982), (321, 11994), (331, 12039),

Gene: Bioscum_16 Start: 9816, Stop: 12233, Start Num: 2

Candidate Starts for Bioscum_16:

(Start: 2 @9816 has 13 MA's), (4, 9828), (5, 9882), (6, 9903), (28, 10077), (31, 10098), (38, 10155), (40, 10188), (49, 10290), (56, 10332), (63, 10374), (64, 10377), (65, 10389), (75, 10467), (80, 10530), (87, 10593), (89, 10611), (91, 10623), (96, 10677), (97, 10686), (99, 10731), (100, 10734), (108, 10815), (115, 10902), (116, 10905), (123, 10953), (128, 10971), (132, 10989), (134, 11001), (157, 11112), (165, 11169), (171, 11205), (174, 11226), (181, 11259), (182, 11265), (194, 11319), (196, 11352), (203, 11376), (240, 11574), (282, 11832), (285, 11853), (290, 11877), (292, 11898), (304, 11952), (316, 12018), (321, 12030), (331, 12075),

Gene: Blett_22 Start: 11520, Stop: 13718, Start Num: 9

Candidate Starts for Blett_22:

(Start: 9 @11520 has 15 MA's), (18, 11595), (24, 11646), (27, 11673), (39, 11766), (42, 11823), (47, 11865), (50, 11898), (52, 11910), (60, 11961), (61, 11964), (63, 11973), (64, 11976), (66, 12012), (67, 12018), (68, 12021), (70, 12033), (72, 12042), (74, 12066), (85, 12165), (91, 12225), (95, 12264), (96, 12279), (100, 12336), (112, 12474), (114, 12504), (116, 12516), (119, 12540), (121, 12549), (125, 12570), (126, 12573), (129, 12585), (133, 12603), (142, 12645), (148, 12675), (173, 12804), (185, 12873), (197, 12939), (213, 12999), (215, 13008), (231, 13071), (243, 13137), (258, 13170), (321, 13488), (326, 13512), (334, 13551), (337, 13572),

Gene: Bush_22 Start: 11501, Stop: 13699, Start Num: 9

Candidate Starts for Bush_22:

(Start: 9 @11501 has 15 MA's), (18, 11576), (24, 11627), (27, 11654), (39, 11747), (42, 11804), (47, 11846), (50, 11879), (52, 11891), (60, 11942), (61, 11945), (63, 11954), (64, 11957), (66, 11993), (67, 11999), (68, 12002), (70, 12014), (72, 12023), (74, 12047), (85, 12146), (91, 12206), (95, 12245), (96,

12260), (107, 12398), (108, 12404), (112, 12455), (114, 12485), (116, 12497), (119, 12521), (121, 12530), (125, 12551), (126, 12554), (129, 12566), (133, 12584), (142, 12626), (148, 12656), (175, 12797), (185, 12854), (197, 12920), (213, 12980), (215, 12989), (231, 13052), (243, 13118), (258, 13151), (321, 13469), (326, 13493), (334, 13532), (337, 13553),

Gene: Carrillo_23 Start: 11474, Stop: 13672, Start Num: 9

Candidate Starts for Carrillo_23:

(Start: 9 @11474 has 15 MA's), (18, 11549), (24, 11600), (27, 11627), (39, 11720), (42, 11777), (47, 11819), (50, 11852), (52, 11864), (60, 11915), (61, 11918), (63, 11927), (64, 11930), (66, 11966), (67, 11972), (68, 11975), (70, 11987), (72, 11996), (74, 12020), (85, 12119), (91, 12179), (95, 12218), (96, 12233), (100, 12290), (112, 12428), (114, 12458), (116, 12470), (119, 12494), (121, 12503), (125, 12524), (126, 12527), (129, 12539), (133, 12557), (142, 12599), (148, 12629), (175, 12770), (185, 12827), (197, 12893), (213, 12953), (215, 12962), (231, 13025), (243, 13091), (267, 13172), (321, 13442), (326, 13466), (334, 13505), (337, 13526),

Gene: CookieDog_22 Start: 11501, Stop: 13699, Start Num: 9

Candidate Starts for CookieDog_22:

(Start: 9 @11501 has 15 MA's), (18, 11576), (24, 11627), (27, 11654), (39, 11747), (47, 11846), (50, 11879), (52, 11891), (60, 11942), (61, 11945), (63, 11954), (64, 11957), (66, 11993), (67, 11999), (68, 12002), (70, 12014), (72, 12023), (74, 12047), (85, 12146), (91, 12206), (95, 12245), (96, 12260), (107, 12398), (108, 12404), (112, 12455), (114, 12485), (116, 12497), (119, 12521), (121, 12530), (125, 12551), (126, 12554), (129, 12566), (133, 12584), (142, 12626), (148, 12656), (175, 12797), (185, 12854), (197, 12920), (213, 12980), (215, 12989), (231, 13052), (243, 13118), (267, 13199), (321, 13469), (326, 13493), (334, 13532), (337, 13553),

Gene: DaRealMyers_16 Start: 10050, Stop: 12278, Start Num: 2

Candidate Starts for DaRealMyers_16:

(Start: 2 @10050 has 13 MA's), (3, 10056), (4, 10062), (13, 10239), (16, 10260), (28, 10377), (40, 10488), (45, 10548), (63, 10674), (72, 10743), (78, 10806), (82, 10839), (90, 10914), (96, 10977), (101, 11043), (108, 11115), (114, 11193), (123, 11253), (140, 11319), (153, 11373), (154, 11382), (163, 11427), (165, 11445), (167, 11451), (202, 11586), (224, 11685), (233, 11742), (246, 11808), (248, 11820), (266, 11928), (270, 11952), (282, 12027), (295, 12108), (306, 12159), (312, 12189),

Gene: DelaGarza_20 Start: 12031, Stop: 14265, Start Num: 9

Candidate Starts for DelaGarza_20:

(Start: 9 @12031 has 15 MA's), (11, 12037), (19, 12118), (20, 12130), (22, 12148), (25, 12157), (31, 12199), (32, 12205), (47, 12367), (48, 12382), (51, 12403), (52, 12412), (63, 12475), (73, 12556), (74, 12568), (79, 12616), (80, 12634), (85, 12667), (91, 12727), (96, 12781), (100, 12838), (112, 12976), (114, 13006), (116, 13018), (122, 13063), (139, 13132), (147, 13171), (151, 13195), (156, 13216), (169, 13282), (186, 13372), (190, 13381), (191, 13384), (200, 13435), (238, 13579), (250, 13675), (256, 13711), (259, 13732), (265, 13783), (267, 13798), (294, 13963), (297, 13972), (310, 14008), (321, 14065), (324, 14083), (328, 14098), (330, 14107),

Gene: Dropshot_21 Start: 11367, Stop: 13565, Start Num: 9

Candidate Starts for Dropshot_21:

(Start: 9 @11367 has 15 MA's), (18, 11442), (24, 11493), (27, 11520), (39, 11613), (42, 11670), (47, 11712), (50, 11745), (52, 11757), (60, 11808), (61, 11811), (63, 11820), (64, 11823), (66, 11859), (67, 11865), (68, 11868), (70, 11880), (72, 11889), (74, 11913), (85, 12012), (91, 12072), (95, 12111), (96, 12126), (100, 12183), (112, 12321), (114, 12351), (116, 12363), (119, 12387), (121, 12396), (125, 12417), (126, 12420), (129, 12432), (133, 12450), (142, 12492), (148, 12522), (175, 12663), (185, 12720), (197, 12786), (213, 12846), (215, 12855), (231, 12918), (243, 12984), (258, 13017), (321, 13335), (326, 13359), (334, 13398), (337, 13419),

Gene: Euratis_12 Start: 8185, Stop: 10374, Start Num: 8

Candidate Starts for Euratis_12:

(Start: 8 @8185 has 9 MA's), (10, 8212), (15, 8242), (37, 8392), (40, 8443), (41, 8470), (46, 8518), (49, 8545), (53, 8569), (62, 8626), (63, 8629), (65, 8644), (75, 8722), (80, 8785), (86, 8836), (94, 8911), (96, 8932), (108, 9070), (113, 9127), (116, 9160), (127, 9220), (143, 9295), (154, 9355), (157, 9367), (165, 9424), (167, 9430), (168, 9439), (171, 9460), (174, 9481), (184, 9538), (192, 9568), (194, 9574), (195, 9589), (196, 9607), (203, 9631), (207, 9664), (210, 9673), (212, 9679), (213, 9685), (226, 9748), (231, 9778), (241, 9862), (249, 9895), (252, 9907), (275, 10048), (279, 10081), (281, 10093), (286, 10132), (294, 10177), (307, 10231), (311, 10255), (329, 10342),

Gene: Galactica_19 Start: 14849, Stop: 17671, Start Num: 2

Candidate Starts for Galactica_19:

(Start: 2 @14849 has 13 MA's), (6, 14936), (7, 14957), (23, 15179), (28, 15212), (30, 15221), (45, 15383), (52, 15446), (64, 15512), (66, 15548), (71, 15575), (72, 15578), (78, 15641), (82, 15674), (96, 15812), (101, 15878), (108, 15950), (112, 15998), (114, 16028), (120, 16070), (127, 16100), (129, 16109), (131, 16121), (134, 16136), (140, 16163), (154, 16235), (158, 16250), (171, 16340), (174, 16361), (178, 16376), (188, 16433), (194, 16454), (195, 16469), (196, 16487), (203, 16511), (218, 16598), (229, 16637), (252, 16787), (263, 16862), (266, 16883), (272, 16916), (279, 16961), (282, 16982), (287, 17015), (292, 17048), (296, 17063), (308, 17117), (311, 17138), (314, 17159), (320, 17183), (325, 17207), (335, 17258), (337, 17270), (339, 17291), (346, 17453), (347, 17498), (348, 17555), (349, 17579),

Gene: Gingerbug_18 Start: 11192, Stop: 13474, Start Num: 9

Candidate Starts for Gingerbug_18:

(Start: 9 @11192 has 15 MA's), (19, 11273), (20, 11285), (37, 11393), (41, 11471), (42, 11480), (44, 11501), (47, 11522), (48, 11537), (51, 11558), (63, 11630), (65, 11645), (73, 11711), (75, 11726), (76, 11735), (79, 11771), (80, 11789), (85, 11822), (91, 11882), (96, 11936), (99, 11990), (104, 12023), (108, 12080), (113, 12140), (114, 12161), (116, 12173), (117, 12185), (124, 12224), (126, 12230), (130, 12251), (133, 12260), (142, 12302), (144, 12314), (148, 12332), (164, 12428), (170, 12449), (175, 12473), (176, 12476), (180, 12497), (186, 12533), (197, 12596), (201, 12620), (226, 12752), (231, 12761), (250, 12884), (256, 12920), (263, 12983), (271, 13034), (274, 13046), (280, 13091), (301, 13190), (310, 13217), (328, 13307), (341, 13376),

Gene: Guzman_23 Start: 11782, Stop: 13980, Start Num: 9

Candidate Starts for Guzman_23:

(Start: 9 @11782 has 15 MA's), (18, 11857), (24, 11908), (27, 11935), (39, 12028), (42, 12085), (47, 12127), (50, 12160), (52, 12172), (60, 12223), (61, 12226), (63, 12235), (64, 12238), (66, 12274), (67, 12280), (68, 12283), (70, 12295), (72, 12304), (74, 12328), (85, 12427), (91, 12487), (95, 12526), (96, 12541), (100, 12598), (112, 12736), (114, 12766), (116, 12778), (119, 12802), (121, 12811), (125, 12832), (126, 12835), (129, 12847), (133, 12865), (142, 12907), (148, 12937), (175, 13078), (185, 13135), (197, 13201), (213, 13261), (215, 13270), (231, 13333), (243, 13399), (267, 13480), (310, 13693), (321, 13750), (326, 13774), (334, 13813), (337, 13834),

Gene: Heather_12 Start: 8215, Stop: 10404, Start Num: 8

Candidate Starts for Heather_12:

(Start: 8 @8215 has 9 MA's), (29, 8365), (31, 8383), (37, 8422), (40, 8473), (41, 8500), (49, 8575), (53, 8599), (63, 8659), (75, 8752), (80, 8815), (86, 8866), (87, 8878), (96, 8962), (103, 9037), (105, 9070), (108, 9100), (113, 9157), (116, 9190), (187, 9580), (194, 9604), (196, 9637), (203, 9661), (207, 9694), (211, 9706), (252, 9937), (268, 10045), (275, 10078), (279, 10111), (294, 10207), (299, 10228), (318, 10324),

Gene: Hiya_21 Start: 15882, Stop: 18707, Start Num: 2

Candidate Starts for Hiya_21:

(1, 15810), (Start: 2 @15882 has 13 MA's), (6, 15969), (7, 15990), (23, 16212), (28, 16245), (40, 16356), (45, 16416), (64, 16545), (66, 16581), (67, 16587), (70, 16602), (72, 16611), (78, 16674), (82, 16707), (88, 16773), (96, 16845), (108, 16983), (114, 17061), (120, 17103), (123, 17121), (128, 17139), (129, 17142), (134, 17169), (135, 17175), (140, 17196), (150, 17247), (154, 17268), (161, 17304), (171, 17373), (176, 17400), (188, 17466), (194, 17487), (195, 17502), (196, 17520), (199, 17535), (203, 17544), (206, 17574), (222, 17649), (232, 17697), (236, 17718), (241, 17775), (242, 17778), (252, 17820), (253, 17823), (262, 17883), (263, 17895), (266, 17916), (276, 17973), (279, 17994), (283, 18027), (293, 18084), (305, 18138), (311, 18171), (324, 18237), (335, 18291), (338, 18315), (349, 18615), (350, 18696),

Gene: Ididsumtinwong_16 Start: 9816, Stop: 12233, Start Num: 2

Candidate Starts for Ididsumtinwong_16:

(Start: 2 @9816 has 13 MA's), (4, 9828), (5, 9882), (6, 9903), (28, 10077), (31, 10098), (38, 10155), (40, 10188), (49, 10290), (56, 10332), (63, 10374), (64, 10377), (65, 10389), (75, 10467), (80, 10530), (87, 10593), (89, 10611), (91, 10623), (96, 10677), (97, 10686), (99, 10731), (100, 10734), (108, 10815), (115, 10902), (116, 10905), (123, 10953), (128, 10971), (132, 10989), (134, 11001), (157, 11112), (165, 11169), (171, 11205), (174, 11226), (181, 11259), (182, 11265), (194, 11319), (196, 11352), (203, 11376), (240, 11574), (282, 11832), (285, 11853), (290, 11877), (292, 11898), (304, 11952), (316, 12018), (321, 12030), (331, 12075),

Gene: Jakelyne_24 Start: 11520, Stop: 13781, Start Num: 9

Candidate Starts for Jakelyne_24:

(Start: 9 @11520 has 15 MA's), (18, 11595), (24, 11646), (27, 11673), (39, 11766), (42, 11823), (47, 11865), (50, 11898), (52, 11910), (60, 11961), (61, 11964), (63, 11973), (64, 11976), (66, 12012), (67, 12018), (68, 12021), (70, 12033), (72, 12042), (74, 12066), (85, 12165), (91, 12225), (95, 12264), (96, 12279), (100, 12336), (112, 12474), (114, 12504), (116, 12516), (119, 12540), (121, 12549), (125, 12570), (126, 12573), (129, 12585), (133, 12603), (142, 12645), (148, 12675), (173, 12804), (185, 12873), (194, 12906), (197, 12939), (213, 12999), (215, 13008), (222, 13038), (235, 13098), (258, 13170), (267, 13218), (273, 13251), (280, 13302), (285, 13335), (288, 13368), (289, 13371), (301, 13446), (319, 13545), (321, 13551), (326, 13575), (334, 13614), (337, 13635),

Gene: Keanu_21 Start: 15925, Stop: 18747, Start Num: 2

Candidate Starts for Keanu_21:

(1, 15853), (Start: 2 @15925 has 13 MA's), (6, 16012), (7, 16033), (17, 16168), (23, 16255), (28, 16288), (30, 16297), (40, 16399), (45, 16459), (64, 16588), (66, 16624), (67, 16630), (68, 16633), (71, 16651), (72, 16654), (78, 16717), (82, 16750), (96, 16888), (99, 16942), (105, 16996), (108, 17026), (109, 17038), (114, 17104), (122, 17161), (123, 17164), (129, 17185), (134, 17212), (144, 17260), (159, 17338), (161, 17347), (176, 17443), (183, 17491), (188, 17509), (192, 17524), (193, 17527), (194, 17530), (195, 17545), (196, 17563), (203, 17587), (206, 17617), (222, 17692), (230, 17725), (232, 17740), (242, 17821), (247, 17839), (253, 17866), (257, 17893), (263, 17938), (268, 17971), (278, 18025), (279, 18037), (282, 18058), (283, 18070), (293, 18127), (308, 18193), (311, 18214), (324, 18280), (335, 18334), (337, 18346), (338, 18358),

Gene: Lesiram_21 Start: 12001, Stop: 14235, Start Num: 9

Candidate Starts for Lesiram_21:

(Start: 9 @12001 has 15 MA's), (11, 12007), (19, 12088), (20, 12100), (22, 12118), (25, 12127), (31, 12169), (32, 12175), (47, 12337), (48, 12352), (51, 12373), (52, 12382), (63, 12445), (73, 12526), (74, 12538), (79, 12586), (80, 12604), (85, 12637), (91, 12697), (96, 12751), (100, 12808), (112, 12946), (114, 12976), (116, 12988), (122, 13033), (139, 13102), (147, 13141), (151, 13165), (156, 13186), (169, 13252), (186, 13342), (191, 13354), (200, 13405), (204, 13438), (250, 13645), (256, 13681), (259, 13702), (265, 13753), (267, 13768), (294, 13933), (297, 13942), (310, 13978), (321, 14035), (324, 14053), (328, 14068), (330, 14077),

Gene: Lilbooboo_12 Start: 8195, Stop: 10384, Start Num: 8

Candidate Starts for Lilbooboo_12:

(Start: 8 @8195 has 9 MA's), (10, 8222), (12, 8240), (31, 8363), (37, 8402), (40, 8453), (46, 8528), (49, 8555), (53, 8579), (54, 8585), (62, 8636), (63, 8639), (65, 8654), (75, 8732), (80, 8795), (86, 8846), (90, 8879), (92, 8900), (94, 8921), (96, 8942), (108, 9080), (116, 9170), (126, 9227), (131, 9251), (133, 9260), (143, 9305), (147, 9326), (165, 9434), (171, 9470), (174, 9491), (193, 9581), (194, 9584), (196, 9617), (203, 9641), (208, 9680), (211, 9686), (236, 9815), (241, 9872), (249, 9905), (251, 9908), (255, 9926), (260, 9959), (279, 10091), (294, 10187), (307, 10241), (329, 10352),

Gene: Lishka_16 Start: 9780, Stop: 12197, Start Num: 2

Candidate Starts for Lishka_16:

(Start: 2 @9780 has 13 MA's), (4, 9792), (5, 9846), (6, 9867), (28, 10041), (31, 10062), (38, 10119), (40, 10152), (49, 10254), (56, 10296), (63, 10338), (64, 10341), (65, 10353), (75, 10431), (80, 10494), (87, 10557), (89, 10575), (91, 10587), (96, 10641), (97, 10650), (99, 10695), (100, 10698), (108, 10779), (115, 10866), (116, 10869), (123, 10917), (128, 10935), (132, 10953), (134, 10965), (157, 11076), (165, 11133), (171, 11169), (174, 11190), (181, 11223), (182, 11229), (188, 11262), (194, 11283), (196, 11316), (203, 11340), (240, 11538), (282, 11796), (285, 11817), (290, 11841), (292, 11862), (304, 11916), (316, 11982), (321, 11994), (331, 12039),

Gene: Losacky_23 Start: 11647, Stop: 13845, Start Num: 9

Candidate Starts for Losacky_23:

(Start: 9 @11647 has 15 MA's), (18, 11722), (24, 11773), (27, 11800), (39, 11893), (42, 11950), (47, 11992), (50, 12025), (52, 12037), (60, 12088), (61, 12091), (63, 12100), (64, 12103), (66, 12139), (67, 12145), (68, 12148), (70, 12160), (72, 12169), (74, 12193), (85, 12292), (91, 12352), (95, 12391), (96, 12406), (100, 12463), (112, 12601), (114, 12631), (116, 12643), (119, 12667), (121, 12676), (125, 12697), (126, 12700), (129, 12712), (133, 12730), (142, 12772), (148, 12802), (175, 12943), (185, 13000), (197, 13066), (213, 13126), (215, 13135), (231, 13198), (243, 13264), (321, 13615), (326, 13639), (334, 13678), (337, 13699),

Gene: Mariel_25 Start: 11675, Stop: 14137, Start Num: 9

Candidate Starts for Mariel_25:

(Start: 9 @11675 has 15 MA's), (18, 11750), (21, 11780), (27, 11828), (37, 11891), (39, 11921), (40, 11942), (47, 12020), (50, 12053), (52, 12065), (60, 12116), (61, 12119), (64, 12131), (66, 12167), (67, 12173), (68, 12176), (70, 12188), (72, 12197), (74, 12221), (83, 12299), (85, 12320), (91, 12380), (95, 12419), (96, 12434), (100, 12491), (103, 12509), (107, 12572), (108, 12578), (112, 12629), (114, 12659), (116, 12671), (119, 12695), (121, 12704), (125, 12725), (126, 12728), (129, 12740), (142, 12800), (149, 12839), (151, 12848), (155, 12866), (170, 12947), (172, 12956), (176, 12974), (212, 13190), (217, 13223), (227, 13298), (236, 13400), (264, 13616), (281, 13724), (310, 13850), (321, 13907), (326, 13931), (334, 13970),

Gene: MenE_22 Start: 11635, Stop: 13833, Start Num: 9

Candidate Starts for MenE_22:

(Start: 9 @11635 has 15 MA's), (18, 11710), (24, 11761), (27, 11788), (39, 11881), (42, 11938), (47, 11980), (50, 12013), (52, 12025), (60, 12076), (61, 12079), (63, 12088), (64, 12091), (66, 12127), (67, 12133), (68, 12136), (70, 12148), (72, 12157), (74, 12181), (85, 12280), (91, 12340), (95, 12379), (96, 12394), (100, 12451), (112, 12589), (114, 12619), (116, 12631), (119, 12655), (121, 12664), (125, 12685), (126, 12688), (129, 12700), (133, 12718), (142, 12760), (148, 12790), (175, 12931), (185, 12988), (197, 13054), (213, 13114), (215, 13123), (231, 13186), (243, 13252), (321, 13603), (326, 13627), (334, 13666), (337, 13687),

Gene: NCRodriguez_23 Start: 11633, Stop: 13894, Start Num: 9

Candidate Starts for NCRodriguez_23:

(Start: 9 @11633 has 15 MA's), (18, 11708), (24, 11759), (27, 11786), (39, 11879), (42, 11936), (47, 11978), (50, 12011), (52, 12023), (60, 12074), (61, 12077), (63, 12086), (64, 12089), (66, 12125), (67, 12131), (68, 12134), (70, 12146), (72, 12155), (74, 12179), (85, 12278), (91, 12338), (95, 12377), (96, 12392), (108, 12536), (112, 12587), (114, 12617), (116, 12629), (119, 12653), (121, 12662), (125, 12683), (126, 12686), (129, 12698), (133, 12716), (142, 12758), (148, 12788), (173, 12917), (185, 12986), (194, 13019), (197, 13052), (213, 13112), (215, 13121), (222, 13151), (235, 13211), (258, 13283), (267, 13331), (273, 13364), (280, 13415), (285, 13448), (288, 13481), (289, 13484), (301, 13559), (319, 13658), (321, 13664), (326, 13688), (334, 13727), (337, 13748),

Gene: PapayaSalad_16 Start: 9786, Stop: 12203, Start Num: 2

Candidate Starts for PapayaSalad_16:

(Start: 2 @9786 has 13 MA's), (4, 9798), (5, 9852), (6, 9873), (28, 10047), (31, 10068), (38, 10125), (49, 10260), (56, 10302), (63, 10344), (64, 10347), (65, 10359), (75, 10437), (80, 10500), (87, 10563), (89, 10581), (91, 10593), (96, 10647), (97, 10656), (99, 10701), (100, 10704), (108, 10785), (115, 10872), (116, 10875), (123, 10923), (128, 10941), (132, 10959), (134, 10971), (157, 11082), (165, 11139), (171, 11175), (174, 11196), (181, 11229), (182, 11235), (188, 11268), (194, 11289), (196, 11322), (203, 11346), (216, 11421), (285, 11823), (290, 11847), (292, 11868), (304, 11922), (315, 11985), (321, 12000), (331, 12045),

Gene: Parvaparticeps_35 Start: 26694, Stop: 24370, Start Num: 9

Candidate Starts for Parvaparticeps_35:

(Start: 9 @26694 has 15 MA's), (23, 26571), (24, 26568), (31, 26517), (36, 26490), (37, 26478), (43, 26379), (44, 26370), (47, 26349), (52, 26304), (63, 26241), (64, 26238), (68, 26193), (76, 26136), (77, 26118), (80, 26082), (87, 26019), (91, 25989), (96, 25935), (118, 25680), (127, 25638), (129, 25629), (143, 25566), (144, 25557), (145, 25551), (146, 25548), (158, 25494), (172, 25401), (180, 25362), (182, 25350), (185, 25329), (198, 25269), (205, 25248), (219, 25185), (223, 25158), (237, 25074), (243, 25020), (255, 24954), (281, 24765), (291, 24702), (294, 24687), (301, 24669), (302, 24666), (310, 24642), (322, 24573), (328, 24552), (340, 24468), (343, 24435), (344, 24402),

Gene: PhillyJawn_22 Start: 11367, Stop: 13565, Start Num: 9

Candidate Starts for PhillyJawn_22:

(Start: 9 @11367 has 15 MA's), (18, 11442), (24, 11493), (27, 11520), (39, 11613), (42, 11670), (47, 11712), (50, 11745), (52, 11757), (60, 11808), (61, 11811), (63, 11820), (64, 11823), (66, 11859), (67, 11865), (68, 11868), (70, 11880), (72, 11889), (74, 11913), (85, 12012), (91, 12072), (95, 12111), (96, 12126), (100, 12183), (112, 12321), (114, 12351), (116, 12363), (119, 12387), (121, 12396), (125, 12417), (126, 12420), (129, 12432), (133, 12450), (175, 12663), (185, 12720), (197, 12786), (213, 12846), (215, 12855), (231, 12918), (243, 12984), (258, 13017), (321, 13335), (326, 13359), (334, 13398), (337, 13419),

Gene: Phingu_24 Start: 11523, Stop: 13784, Start Num: 9

Candidate Starts for Phingu_24:

(Start: 9 @11523 has 15 MA's), (18, 11598), (24, 11649), (27, 11676), (39, 11769), (42, 11826), (47, 11868), (50, 11901), (52, 11913), (60, 11964), (61, 11967), (63, 11976), (64, 11979), (66, 12015), (67, 12021), (68, 12024), (70, 12036), (72, 12045), (74, 12069), (85, 12168), (91, 12228), (95, 12267), (96, 12282), (100, 12339), (112, 12477), (114, 12507), (116, 12519), (119, 12543), (121, 12552), (125, 12573), (126, 12576), (129, 12588), (133, 12606), (142, 12648), (148, 12678), (176, 12822), (185, 12876), (197, 12942), (213, 13002), (215, 13011), (231, 13074), (235, 13101), (258, 13173), (267, 13221), (273, 13254), (280, 13305), (285, 13338), (288, 13371), (289, 13374), (301, 13449), (319, 13548), (321, 13554), (326, 13578), (334, 13617), (337, 13638),

Gene: Phoningi_21 Start: 11365, Stop: 13626, Start Num: 9

Candidate Starts for Phoningi_21:

(Start: 9 @11365 has 15 MA's), (18, 11440), (24, 11491), (27, 11518), (39, 11611), (43, 11680), (47, 11710), (50, 11743), (52, 11755), (60, 11806), (61, 11809), (63, 11818), (64, 11821), (66, 11857), (67, 11863), (68, 11866), (70, 11878), (72, 11887), (85, 12010), (91, 12070), (95, 12109), (96, 12124), (100, 12181), (108, 12268), (112, 12319), (114, 12349), (116, 12361), (119, 12385), (121, 12394), (122, 12406), (125, 12415), (126, 12418), (129, 12430), (141, 12487), (142, 12490), (148, 12520), (173, 12649), (185, 12718), (194, 12751), (197, 12784), (204, 12799), (213, 12844), (215, 12853), (235, 12943), (258, 13015), (267, 13063), (273, 13096), (280, 13147), (285, 13180), (288, 13213), (289, 13216), (301, 13291), (321, 13396), (326, 13420), (334, 13459),

Gene: Pickles13_21 Start: 11528, Stop: 13990, Start Num: 9

Candidate Starts for Pickles13_21:

(Start: 9 @11528 has 15 MA's), (18, 11603), (21, 11633), (26, 11666), (27, 11681), (37, 11744), (39, 11774), (40, 11795), (42, 11831), (47, 11873), (50, 11906), (52, 11918), (60, 11969), (61, 11972), (64, 11984), (66, 12020), (67, 12026), (68, 12029), (70, 12041), (72, 12050), (74, 12074), (83, 12152), (91, 12233), (95, 12272), (96, 12287), (98, 12299), (100, 12344), (103, 12362), (107, 12425), (108, 12431), (112, 12482), (114, 12512), (116, 12524), (119, 12548), (121, 12557), (125, 12578), (126, 12581), (129, 12593), (133, 12611), (135, 12623), (142, 12653), (151, 12701), (155, 12719), (170, 12800), (172, 12809), (176, 12827), (212, 13043), (217, 13076), (227, 13151), (236, 13253), (239, 13271), (243, 13322), (245, 13337), (254, 13385), (264, 13469), (281, 13577), (321, 13760), (326, 13784), (334, 13823), (336, 13838), (342, 13886), (345, 13964),

Gene: Raleigh_16 Start: 10247, Stop: 12655, Start Num: 2

Candidate Starts for Raleigh_16:

(Start: 2 @10247 has 13 MA's), (5, 10313), (6, 10334), (7, 10355), (Start: 9 @10412 has 15 MA's), (28, 10508), (34, 10544), (38, 10586), (50, 10730), (55, 10760), (56, 10763), (58, 10775), (59, 10784), (63, 10805), (66, 10844), (74, 10895), (80, 10961), (82, 10970), (84, 10982), (91, 11054), (96, 11108), (116, 11336), (123, 11384), (129, 11405), (179, 11675), (188, 11729), (189, 11732), (194, 11750), (195, 11765), (196, 11783), (203, 11807), (204, 11816), (206, 11837), (216, 11882), (229, 11933), (244, 12041), (268, 12176), (278, 12230), (280, 12251), (285, 12284), (292, 12329), (304, 12383), (321, 12464), (327, 12491), (333, 12515),

Gene: RemusLoopin_12 Start: 8193, Stop: 10382, Start Num: 8

Candidate Starts for RemusLoopin_12:

(Start: 8 @8193 has 9 MA's), (29, 8343), (31, 8361), (37, 8400), (40, 8451), (41, 8478), (49, 8553), (53, 8577), (63, 8637), (65, 8652), (74, 8727), (80, 8793), (86, 8844), (96, 8940), (105, 9048), (108, 9078), (116, 9168), (162, 9405), (165, 9432), (174, 9489), (184, 9546), (187, 9558), (194, 9582), (196, 9615), (203, 9639), (236, 9813), (252, 9915), (279, 10089), (294, 10185), (299, 10206), (321, 10311),

Gene: SV1_16 Start: 10022, Stop: 12439, Start Num: 2

Candidate Starts for SV1_16:

(Start: 2 @10022 has 13 MA's), (4, 10034), (5, 10088), (6, 10109), (28, 10283), (31, 10304), (37, 10343), (40, 10394), (49, 10496), (56, 10538), (62, 10577), (63, 10580), (64, 10583), (75, 10673), (80, 10736), (87, 10799), (89, 10817), (91, 10829), (96, 10883), (100, 10940), (108, 11021), (115, 11108), (116, 11111), (123, 11159), (128, 11177), (134, 11207), (174, 11432), (182, 11471), (183, 11486), (194, 11525), (196, 11558), (203, 11582), (229, 11708), (240, 11780), (277, 12002), (282, 12038), (285, 12059), (290, 12083), (292, 12104), (298, 12131), (303, 12155), (304, 12158), (315, 12221), (316, 12224), (321, 12236), (331, 12281),

Gene: Samora_12 Start: 8227, Stop: 10419, Start Num: 8

Candidate Starts for Samora_12:

(Start: 8 @8227 has 9 MA's), (10, 8254), (12, 8272), (40, 8485), (41, 8512), (46, 8560), (49, 8587), (53, 8611), (63, 8671), (64, 8674), (65, 8686), (75, 8764), (80, 8827), (86, 8878), (92, 8932), (94, 8953), (96, 8974), (105, 9082), (108, 9112), (116, 9202), (171, 9502), (194, 9616), (196, 9649), (203, 9673), (208,

9712), (211, 9718), (236, 9847), (241, 9904), (249, 9937), (279, 10123), (294, 10219), (307, 10273), (311, 10297),

Gene: Sebastisaurus_12 Start: 8219, Stop: 10408, Start Num: 8

Candidate Starts for Sebastisaurus_12:

(Start: 8 @8219 has 9 MA's), (29, 8369), (31, 8387), (37, 8426), (39, 8456), (40, 8477), (41, 8504), (49, 8579), (53, 8603), (63, 8663), (65, 8678), (74, 8753), (80, 8819), (96, 8966), (105, 9074), (108, 9104), (113, 9161), (116, 9194), (162, 9431), (165, 9458), (174, 9515), (184, 9572), (187, 9584), (194, 9608), (196, 9641), (203, 9665), (236, 9839), (249, 9929), (252, 9941), (268, 10049), (275, 10082), (279, 10115), (284, 10151), (294, 10211), (300, 10235), (318, 10328), (321, 10337),

Gene: Shawty_12 Start: 8222, Stop: 10411, Start Num: 8

Candidate Starts for Shawty_12:

(Start: 8 @8222 has 9 MA's), (10, 8249), (35, 8414), (37, 8429), (40, 8480), (41, 8507), (49, 8582), (53, 8606), (63, 8666), (65, 8681), (69, 8717), (74, 8756), (80, 8822), (86, 8873), (94, 8948), (96, 8969), (101, 9035), (106, 9083), (108, 9107), (113, 9164), (116, 9197), (143, 9332), (166, 9464), (168, 9476), (171, 9497), (192, 9605), (194, 9611), (195, 9626), (196, 9644), (203, 9668), (210, 9710), (213, 9722), (231, 9815), (236, 9842), (249, 9932), (275, 10085), (279, 10118), (294, 10214),

Gene: SoJo_16 Start: 10050, Stop: 12278, Start Num: 2

Candidate Starts for SoJo_16:

(Start: 2 @10050 has 13 MA's), (3, 10056), (4, 10062), (13, 10239), (16, 10260), (28, 10377), (40, 10488), (45, 10548), (63, 10674), (72, 10743), (82, 10839), (90, 10914), (96, 10977), (101, 11043), (108, 11115), (114, 11193), (123, 11253), (140, 11319), (153, 11373), (154, 11382), (163, 11427), (165, 11445), (167, 11451), (202, 11586), (224, 11685), (233, 11742), (246, 11808), (248, 11820), (266, 11928), (270, 11952), (282, 12027), (295, 12108), (306, 12159), (312, 12189),

Gene: Spocter_21 Start: 15870, Stop: 18695, Start Num: 2

Candidate Starts for Spocter_21:

(1, 15798), (Start: 2 @15870 has 13 MA's), (6, 15957), (7, 15978), (23, 16200), (28, 16233), (40, 16344), (45, 16404), (64, 16533), (66, 16569), (67, 16575), (70, 16590), (72, 16599), (78, 16662), (82, 16695), (88, 16761), (96, 16833), (108, 16971), (114, 17049), (120, 17091), (123, 17109), (128, 17127), (129, 17130), (134, 17157), (135, 17163), (140, 17184), (150, 17235), (154, 17256), (158, 17271), (159, 17283), (161, 17292), (171, 17361), (176, 17388), (188, 17454), (194, 17475), (195, 17490), (196, 17508), (199, 17523), (203, 17532), (206, 17562), (212, 17580), (222, 17637), (232, 17685), (236, 17706), (241, 17763), (242, 17766), (252, 17808), (253, 17811), (260, 17850), (262, 17871), (263, 17883), (266, 17904), (276, 17961), (279, 17982), (283, 18015), (293, 18072), (305, 18126), (311, 18159), (335, 18279), (338, 18303), (349, 18603), (350, 18684),

Gene: Sweetums_20 Start: 12109, Stop: 14346, Start Num: 9

Candidate Starts for Sweetums_20:

(Start: 9 @12109 has 15 MA's), (11, 12115), (13, 12133), (14, 12139), (31, 12280), (32, 12286), (37, 12319), (42, 12406), (47, 12448), (48, 12463), (51, 12484), (52, 12493), (63, 12556), (73, 12637), (74, 12649), (79, 12697), (80, 12715), (85, 12748), (91, 12808), (96, 12862), (100, 12919), (112, 13057), (113, 13066), (114, 13087), (122, 13144), (147, 13252), (151, 13276), (156, 13297), (169, 13363), (186, 13453), (190, 13462), (191, 13465), (200, 13516), (238, 13660), (250, 13756), (256, 13792), (259, 13813), (265, 13864), (267, 13879), (294, 14044), (297, 14053), (310, 14089), (321, 14146), (324, 14164), (328, 14179), (330, 14188),

Gene: TG1_12 Start: 8190, Stop: 10379, Start Num: 8

Candidate Starts for TG1_12:

(Start: 8 @8190 has 9 MA's), (10, 8217), (29, 8340), (33, 8370), (36, 8385), (37, 8397), (40, 8448), (53, 8574), (63, 8634), (75, 8727), (80, 8790), (81, 8796), (92, 8895), (96, 8937), (103, 9012), (105, 9045),

(108, 9075), (116, 9165), (137, 9276), (138, 9279), (143, 9300), (152, 9348), (168, 9444), (181, 9519), (183, 9540), (194, 9579), (195, 9594), (196, 9612), (199, 9627), (203, 9636), (214, 9693), (222, 9741), (252, 9912), (257, 9942), (260, 9954), (279, 10086), (281, 10098), (294, 10182), (312, 10263), (317, 10299), (332, 10362),

Gene: Teng_22 Start: 12028, Stop: 14262, Start Num: 9

Candidate Starts for Teng_22:

(Start: 9 @12028 has 15 MA's), (11, 12034), (19, 12115), (20, 12127), (22, 12145), (25, 12154), (31, 12196), (32, 12202), (47, 12364), (48, 12379), (51, 12400), (52, 12409), (63, 12472), (73, 12553), (74, 12565), (79, 12613), (80, 12631), (85, 12664), (91, 12724), (96, 12778), (100, 12835), (112, 12973), (114, 13003), (116, 13015), (139, 13129), (147, 13168), (151, 13192), (156, 13213), (169, 13279), (186, 13369), (191, 13381), (200, 13432), (256, 13708), (259, 13729), (265, 13780), (267, 13795), (294, 13960), (297, 13969), (310, 14005), (321, 14062), (324, 14080), (328, 14095), (330, 14104),

Gene: Tubberson_16 Start: 10050, Stop: 12278, Start Num: 2

Candidate Starts for Tubberson_16:

(Start: 2 @10050 has 13 MA's), (3, 10056), (4, 10062), (13, 10239), (16, 10260), (28, 10377), (40, 10488), (45, 10548), (63, 10674), (72, 10743), (78, 10806), (82, 10839), (90, 10914), (96, 10977), (101, 11043), (108, 11115), (114, 11193), (123, 11253), (140, 11319), (153, 11373), (154, 11382), (163, 11427), (165, 11445), (167, 11451), (202, 11586), (224, 11685), (233, 11742), (246, 11808), (248, 11820), (266, 11928), (270, 11952), (282, 12027), (295, 12108), (306, 12159), (312, 12189),

Gene: Vash_12 Start: 8200, Stop: 10392, Start Num: 8

Candidate Starts for Vash_12:

(Start: 8 @8200 has 9 MA's), (10, 8227), (31, 8368), (37, 8407), (40, 8458), (46, 8533), (49, 8560), (53, 8584), (54, 8590), (62, 8641), (63, 8644), (65, 8659), (75, 8737), (80, 8800), (86, 8851), (90, 8884), (94, 8926), (96, 8947), (101, 9013), (108, 9085), (116, 9175), (126, 9232), (133, 9265), (138, 9289), (143, 9310), (147, 9331), (165, 9439), (171, 9475), (187, 9565), (189, 9571), (193, 9586), (194, 9589), (196, 9622), (203, 9646), (208, 9685), (236, 9820), (241, 9877), (249, 9910), (252, 9922), (279, 10096), (294, 10192), (307, 10246), (311, 10270), (317, 10309), (319, 10315), (329, 10360),

Gene: Violeta_23 Start: 11465, Stop: 13663, Start Num: 9

Candidate Starts for Violeta_23:

(Start: 9 @11465 has 15 MA's), (18, 11540), (24, 11591), (27, 11618), (39, 11711), (42, 11768), (47, 11810), (50, 11843), (52, 11855), (60, 11906), (61, 11909), (63, 11918), (64, 11921), (66, 11957), (67, 11963), (68, 11966), (70, 11978), (72, 11987), (74, 12011), (85, 12110), (91, 12170), (95, 12209), (96, 12224), (100, 12281), (112, 12419), (114, 12449), (116, 12461), (119, 12485), (121, 12494), (125, 12515), (126, 12518), (129, 12530), (133, 12548), (142, 12590), (148, 12620), (175, 12761), (185, 12818), (197, 12884), (213, 12944), (215, 12953), (231, 13016), (243, 13082), (321, 13433), (326, 13457), (334, 13496), (337, 13517),

Gene: Warren_22 Start: 11565, Stop: 13763, Start Num: 9

Candidate Starts for Warren_22:

(Start: 9 @11565 has 15 MA's), (18, 11640), (24, 11691), (27, 11718), (39, 11811), (47, 11910), (50, 11943), (52, 11955), (60, 12006), (61, 12009), (63, 12018), (64, 12021), (66, 12057), (67, 12063), (68, 12066), (70, 12078), (72, 12087), (74, 12111), (85, 12210), (91, 12270), (95, 12309), (96, 12324), (100, 12381), (112, 12519), (114, 12549), (116, 12561), (119, 12585), (121, 12594), (125, 12615), (126, 12618), (129, 12630), (133, 12648), (142, 12690), (148, 12720), (153, 12744), (173, 12849), (185, 12918), (194, 12951), (197, 12984), (213, 13044), (215, 13053), (231, 13116), (243, 13182), (258, 13215), (302, 13452), (321, 13533), (326, 13557), (334, 13596), (337, 13617),

Gene: Winchester007_37 Start: 17485, Stop: 19683, Start Num: 9

Candidate Starts for Winchester007_37:

(Start: 9 @17485 has 15 MA's), (18, 17560), (24, 17611), (27, 17638), (39, 17731), (47, 17830), (50, 17863), (52, 17875), (60, 17926), (61, 17929), (63, 17938), (64, 17941), (66, 17977), (67, 17983), (68, 17986), (70, 17998), (72, 18007), (74, 18031), (85, 18130), (91, 18190), (95, 18229), (96, 18244), (100, 18301), (112, 18439), (114, 18469), (116, 18481), (119, 18505), (121, 18514), (125, 18535), (126, 18538), (129, 18550), (133, 18568), (148, 18640), (175, 18781), (185, 18838), (197, 18904), (213, 18964), (215, 18973), (231, 19036), (243, 19102), (321, 19453), (326, 19477), (334, 19516), (337, 19537),

Gene: Wrackline_26 Start: 12677, Stop: 15094, Start Num: 9

Candidate Starts for Wrackline_26:

(Start: 9 @12677 has 15 MA's), (13, 12695), (19, 12758), (20, 12770), (32, 12845), (36, 12866), (37, 12878), (41, 12956), (47, 13007), (48, 13022), (51, 13043), (52, 13052), (57, 13079), (60, 13103), (61, 13106), (63, 13115), (72, 13184), (73, 13196), (79, 13256), (80, 13274), (83, 13286), (85, 13307), (87, 13337), (91, 13367), (93, 13382), (96, 13421), (102, 13490), (104, 13508), (110, 13598), (111, 13604), (113, 13625), (114, 13646), (116, 13658), (122, 13703), (124, 13709), (125, 13712), (130, 13736), (133, 13745), (136, 13760), (144, 13799), (148, 13817), (154, 13847), (169, 13922), (170, 13934), (175, 13958), (176, 13961), (177, 13964), (180, 13982), (194, 14048), (202, 14114), (209, 14159), (220, 14237), (221, 14246), (225, 14261), (228, 14279), (234, 14372), (261, 14576), (262, 14588), (269, 14642), (271, 14651), (273, 14657), (280, 14708), (301, 14807), (313, 14852), (321, 14891), (323, 14906), (328, 14924), (330, 14933),

Gene: phiBT1_43 Start: 8225, Stop: 10414, Start Num: 8

Candidate Starts for phiBT1_43:

(Start: 8 @8225 has 9 MA's), (10, 8252), (37, 8432), (40, 8483), (41, 8510), (46, 8558), (49, 8585), (53, 8609), (63, 8669), (65, 8684), (75, 8762), (80, 8825), (82, 8834), (86, 8876), (92, 8930), (94, 8951), (96, 8972), (105, 9080), (108, 9110), (116, 9200), (131, 9281), (137, 9311), (143, 9335), (147, 9356), (160, 9425), (162, 9437), (166, 9467), (168, 9479), (172, 9503), (188, 9593), (192, 9608), (194, 9614), (196, 9647), (199, 9662), (203, 9671), (208, 9710), (211, 9716), (213, 9725), (231, 9818), (241, 9902), (251, 9938), (252, 9947), (275, 10088), (279, 10121), (284, 10157), (294, 10217), (307, 10271), (309, 10277), (321, 10343),