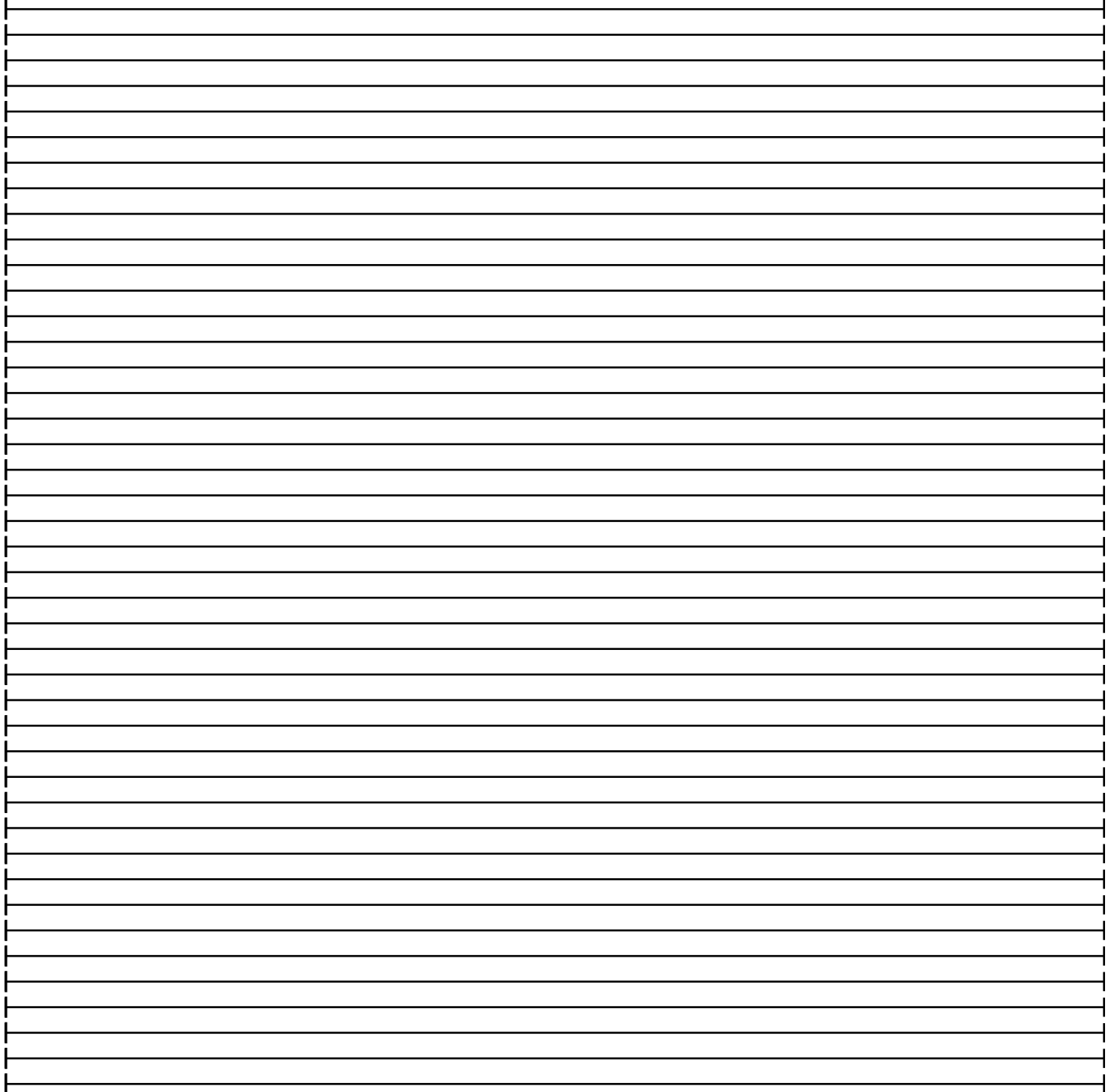
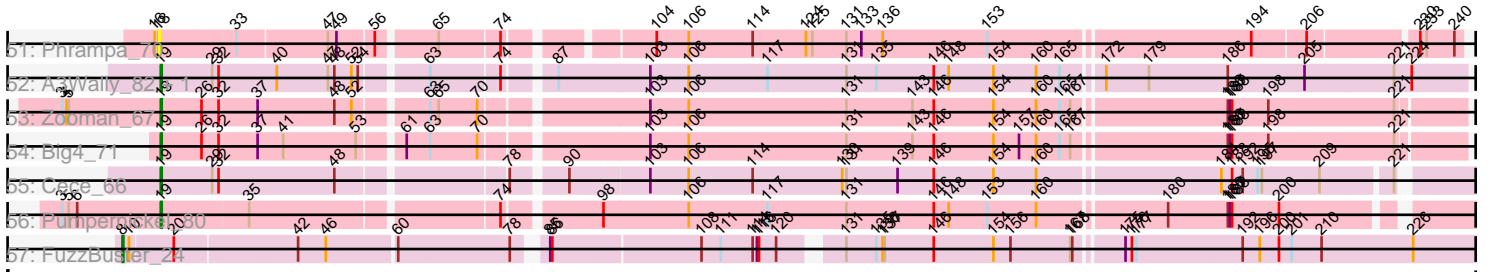


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1. GodonK_6	106	108	113	128	131	134	140	149	153	183	195	201	212	232
2. Phendrix_61	106	108	113	128	131	134	140	149	153	183	195	201	212	232
3. BlueNGold_16+3	106	108	113	128	131	134	140	149	153	183	195	201	212	232
4. CIMAZ_9	106	108	113	128	131	134	140	149	153	183	195	201	212	232
5. Sixama_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
6. Onika_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
7. Gina_20	106	108	113	128	131	134	140	149	153	183	195	201	212	232
8. Nicole72_15	106	108	113	128	131	134	140	149	153	183	195	201	212	232
9. Jayden_20	106	108	113	128	131	134	140	149	153	183	195	201	212	232
10. Ariadne_63	106	108	113	128	131	134	140	149	153	183	195	201	212	232
11. Savannah19_19+1	106	108	113	128	131	134	140	149	153	183	195	201	212	232
12. LittleFolie_21	106	108	113	128	131	134	140	149	153	183	195	201	212	232
13. Jere_20	106	108	113	128	131	134	140	149	153	183	195	201	212	232
14. NoodleSoul_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
15. Busephie_20+1	106	108	113	128	131	134	140	149	153	183	195	201	212	232
16. MelanGold_20	106	108	113	128	131	134	140	149	153	183	195	201	212	232
17. Megan_20	106	108	113	128	131	134	140	149	153	183	195	201	212	232
18. Crisis_20	106	108	113	128	131	134	140	149	153	183	195	201	212	232
19. KaiHarLison_20	106	108	113	128	131	134	140	149	153	183	195	201	212	232
20. PierreJoli_20	106	108	113	128	131	134	140	149	153	183	195	201	212	232
21. Sunny_16+1	106	108	113	128	131	134	140	149	153	183	195	201	212	232
22. RoosFede_21	106	108	113	128	131	134	140	149	153	183	195	201	212	232
23. Piperis_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
24. Ganand_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
25. Guhwang_2	106	108	113	128	131	134	140	149	153	183	195	201	212	232
26. ClearAS_22	106	108	113	128	131	134	140	149	153	183	195	201	212	232
27. Cranjjs_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
28. Fireman_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
29. Antares_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
30. HoneyM_19+2	106	108	113	128	131	134	140	149	153	183	195	201	212	232
31. Puichra_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
32. Tyrumb_18	106	108	113	128	131	134	140	149	153	183	195	201	212	232
33. Brazzaire_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
34. Jolipop_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
35. Smarties_18	106	108	113	128	131	134	140	149	153	183	195	201	212	232
36. PiperSawSiom_21	106	108	113	128	131	134	140	149	153	183	195	201	212	232
37. Selwyn_21	106	108	113	128	131	134	140	149	153	183	195	201	212	232
38. Cressida_13	106	108	113	128	131	134	140	149	153	183	195	201	212	232
39. Margare_12	106	108	113	128	131	134	140	149	153	183	195	201	212	232
40. Cinna_10	106	108	113	128	131	134	140	149	153	183	195	201	212	232
41. Kozie_12	106	108	113	128	131	134	140	149	153	183	195	201	212	232
42. MemengSiom_1	106	108	113	128	131	134	140	149	153	183	195	201	212	232
43. Terij_13	106	108	113	128	131	134	140	149	153	183	195	201	212	232
44. Matzah_13	106	108	113	128	131	134	140	149	153	183	195	201	212	232
45. Bloom_10+1	106	108	113	128	131	134	140	149	153	183	195	201	212	232
46. Racecar_7	106	108	113	128	131	134	140	149	153	183	195	201	212	232
47. SJReid_11	106	108	113	128	131	134	140	149	153	183	195	201	212	232
48. Talia1610_16	106	108	113	128	131	134	140	149	153	183	195	201	212	232
49. DunneganB_19	106	108	113	128	131	134	140	149	153	183	195	201	212	232
50. Atuin_73	106	108	113	128	131	134	140	149	153	183	195	201	212	232

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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 196489 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196489 has 76 members, 11 are drafts.

Phages represented in each track:

- Track 1 : GodonK_66
- Track 2 : Phendrix_65
- Track 3 : BlueNGold_76, Boopy_77, Forza_77, Mareelih_76
- Track 4 : GMA2_9
- Track 5 : Sixama_72
- Track 6 : Onika_19
- Track 7 : Gina_20, Teamocil_20
- Track 8 : Nicole72_14
- Track 9 : Jayden_20
- Track 10 : Ariadne_28
- Track 11 : Savannah_19, Ramiel05_19, Kowalski_19, Shotgun_19, CrazyRich_19
- Track 12 : LittleFortune_21, Yeti_20, Phorgeous_19
- Track 13 : Jefe_20
- Track 14 : NoodlelyBoi_19
- Track 15 : Busephilis_20, Hermeonysus_19
- Track 16 : Metamorphoo_20
- Track 17 : Megan_13
- Track 18 : Crisis_21
- Track 19 : KaiHaiDragon_20, EarickHC_20
- Track 20 : PierreOrion_20, Paschalis_19
- Track 21 : Sunny_20, Merry_20
- Track 22 : RobsFeet_21
- Track 23 : Piperis_20
- Track 24 : Ganandorf_19
- Track 25 : Quhwah_22
- Track 26 : ClearAsMud_22
- Track 27 : Cranjis_21
- Track 28 : Fireman_20
- Track 29 : Antares_20
- Track 30 : Honeyfin_21, Phrancesco_21, Scumberland_21
- Track 31 : Pulchra_21
- Track 32 : Tyumbra_18
- Track 33 : BrazzalePHS_19
- Track 34 : Jollipop_20
- Track 35 : Smarties_28
- Track 36 : PiperSansNom_20
- Track 37 : Selwyn23_21

- Track 38 : Cressida_13
- Track 39 : Margaery_12
- Track 40 : Cinna_12
- Track 41 : Kozie_14
- Track 42 : MementoMori_13
- Track 43 : Terij_13
- Track 44 : Matzah_13
- Track 45 : Bloom_80, Mimi_83, Patbob_76
- Track 46 : Racecar_77
- Track 47 : SJReid_81
- Track 48 : Talia1610_76
- Track 49 : DunneganBoMo_69
- Track 50 : Atuin_73
- Track 51 : Phrampa_70
- Track 52 : A3Wally_82, PauloDiaboli_82
- Track 53 : Zooman_67
- Track 54 : Big4_71
- Track 55 : Cece_66
- Track 56 : Pumpernickel_80
- Track 57 : FuzzBuster_24

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

The start number called the most often in the published annotations is 8, it was called in 37 of the 65 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares_20, Busephilis_20, ClearAsMud_22, Cranjis_21, CrazyRich_19, Crisis_21, FuzzBuster_24, Gina_20, Hermeonysus_19, Honeyfin_21, Jayden_20, Jefe_20, Jollipop_20, Kowalski_19, LittleFortune_21, Megan_13, MementoMori_13, Metamorphoo_20, Nicole72_14, NoodlelyBoi_19, Onika_19, Paschalis_19, Phorgeous_19, Phrancesco_21, PierreOrion_20, PiperSansNom_20, Piperis_20, Pulchra_21, Quhwah_22, Ramiel05_19, RobsFeet_21, Savannah_19, Scumberland_21, Selwyn23_21, Shotgun_19, Smarties_28, Teamocil_20, Yeti_20,

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

- Ariadne_28, BrazzalePHS_19, Cinna_12, Cressida_13, EarickHC_20, Fireman_20, Ganandorf_19, KaiHaiDragon_20, Kozie_14, Margaery_12, Matzah_13, Merry_20, Sunny_20, Terij_13, Tyumbra_18,

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

- A3Wally_82, Atuin_73, Big4_71, Bloom_80, BlueNGold_76, Boopy_77, Cece_66, DunneganBoMo_69, Forza_77, GMA2_9, GodonK_66, Mareelih_76, Mimi_83, Patbob_76, PauloDiaboli_82, Phendrix_65, Phrampa_70, Pumpernickel_80, Racecar_77, SJReid_81, Sixama_72, Talia1610_76, Zooman_67,

Summary by start number:

Start 8:

- Found in 53 of 76 (69.7%) of genes in pham

- Manual Annotations of this start: 37 of 65
- Called 71.7% of time when present
- Phage (with cluster) where this start called: Antares_20 (EC), Busephilis_20 (EC), ClearAsMud_22 (EC), Cranjis_21 (EC), CrazyRich_19 (EC), Crisis_21 (EC), FuzzBuster_24 (singleton), Gina_20 (EC), Hermeonysus_19 (EC), Honeyfin_21 (EC), Jayden_20 (EC), Jefe_20 (EC), Jollipop_20 (EC), Kowalski_19 (EC), LittleFortune_21 (EC), Megan_13 (EC), MementoMori_13 (EI), Metamorphoo_20 (EC), Nicole72_14 (EC), NoodlelyBoi_19 (EC), Onika_19 (EC), Paschalis_19 (EC), Phorgeous_19 (EC), Phrancesco_21 (EC), PierreOrion_20 (EC), PiperSansNom_20 (EC), Piperis_20 (EC), Pulchra_21 (EC), Quhwah_22 (EC), Ramiel05_19 (EC), RobsFeet_21 (EC), Savannah_19 (EC), Scumberland_21 (EC), Selwyn23_21 (EC), Shotgun_19 (EC), Smarties_28 (EC), Teamocil_20 (EC), Yeti_20 (EC),

Start 9:

- Found in 1 of 76 (1.3%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA2_9 (DS),

Start 10:

- Found in 53 of 76 (69.7%) of genes in pham
- Manual Annotations of this start: 13 of 65
- Called 28.3% of time when present
- Phage (with cluster) where this start called: Ariadne_28 (EC), BrazzalePHS_19 (EC), Cinna_12 (EI), Cressida_13 (EI), EarickHC_20 (EC), Fireman_20 (EC), Ganandorf_19 (EC), KaiHaiDragon_20 (EC), Kozie_14 (EI), Margaery_12 (EI), Matzah_13 (EI), Merry_20 (EC), Sunny_20 (EC), Terij_13 (EI), Tyumbra_18 (EC),

Start 11:

- Found in 2 of 76 (2.6%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Phendrix_65 (DK),

Start 13:

- Found in 2 of 76 (2.6%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 50.0% of time when present
- Phage (with cluster) where this start called: GodonK_66 (DK),

Start 14:

- Found in 5 of 76 (6.6%) of genes in pham
- Manual Annotations of this start: 5 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueNGold_76 (DS), Boopy_77 (DS), Forza_77 (DS), Mareelih_76 (DS), Sixama_72 (DS),

Start 16:

- Found in 7 of 76 (9.2%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Racecar_77 (FC),

Start 18:

- Found in 9 of 76 (11.8%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 77.8% of time when present
- Phage (with cluster) where this start called: Atuin_73 (FC), Bloom_80 (FC), Mimi_83 (FC), Patbob_76 (FC), Phrampa_70 (FC), SJReid_81 (FC), Talia1610_76 (FC),

Start 19:

- Found in 6 of 76 (7.9%) of genes in pham
- Manual Annotations of this start: 6 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally_82 (GD1), Big4_71 (GD2), Cece_66 (GD3), PauloDiaboli_82 (GD1), Pumpernickel_80 (GD4), Zooman_67 (GD2),

Start 26:

- Found in 3 of 76 (3.9%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: DunneganBoMo_69 (FC),

Summary by clusters:

There are 10 clusters represented in this pham: GD1, GD2, GD3, EI, DK, singleton, EC, FC, GD4, DS,

Info for manual annotations of cluster DK:

- Start number 11 was manually annotated 1 time for cluster DK.
- Start number 13 was manually annotated 1 time for cluster DK.

Info for manual annotations of cluster DS:

- Start number 14 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster EC:

- Start number 8 was manually annotated 35 times for cluster EC.
- Start number 10 was manually annotated 7 times for cluster EC.

Info for manual annotations of cluster EI:

- Start number 8 was manually annotated 1 time for cluster EI.
- Start number 10 was manually annotated 6 times for cluster EI.

Info for manual annotations of cluster FC:

- Start number 16 was manually annotated 1 time for cluster FC.
- Start number 18 was manually annotated 1 time for cluster FC.

Info for manual annotations of cluster GD1:

- Start number 19 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 19 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 19 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

•Start number 19 was manually annotated 1 time for cluster GD4.

Gene Information:

Gene: A3Wally_82 Start: 29832, Stop: 31568, Start Num: 19

Candidate Starts for A3Wally_82:

(Start: 19 @29832 has 6 MA's), (29, 29895), (32, 29904), (40, 29982), (47, 30054), (48, 30063), (52, 30087), (54, 30096), (63, 30177), (74, 30270), (87, 30327), (103, 30450), (106, 30504), (117, 30612), (131, 30723), (135, 30765), (146, 30846), (148, 30867), (154, 30930), (160, 30990), (165, 31023), (172, 31071), (179, 31131), (186, 31242), (205, 31350), (221, 31470), (224, 31494),

Gene: Antares_20 Start: 8653, Stop: 10359, Start Num: 8

Candidate Starts for Antares_20:

(Start: 8 @8653 has 37 MA's), (Start: 10 @8662 has 13 MA's), (12, 8677), (30, 8776), (32, 8782), (42, 8887), (43, 8899), (58, 9004), (60, 9016), (64, 9070), (67, 9088), (73, 9142), (78, 9172), (87, 9211), (91, 9229), (92, 9238), (99, 9274), (104, 9337), (108, 9400), (111, 9427), (114, 9472), (131, 9574), (132, 9577), (135, 9616), (138, 9634), (147, 9706), (153, 9772), (154, 9781), (158, 9820), (163, 9853), (166, 9886), (168, 9892), (171, 9922), (182, 10075), (186, 10090), (192, 10111), (193, 10114), (227, 10318), (231, 10327),

Gene: Ariadne_28 Start: 10109, Stop: 11824, Start Num: 10

Candidate Starts for Ariadne_28:

(Start: 8 @10100 has 37 MA's), (Start: 10 @10109 has 13 MA's), (32, 10229), (42, 10334), (43, 10346), (57, 10445), (64, 10517), (67, 10535), (97, 10715), (99, 10721), (100, 10745), (104, 10784), (108, 10847), (111, 10874), (114, 10919), (131, 11021), (132, 11024), (135, 11063), (136, 11072), (143, 11114), (147, 11153), (153, 11219), (154, 11228), (155, 11243), (158, 11267), (166, 11333), (168, 11339), (171, 11366), (182, 11519), (187, 11537), (196, 11579), (199, 11603), (201, 11624), (214, 11660), (238, 11801), (239, 11813),

Gene: Atuin_73 Start: 31058, Stop: 32686, Start Num: 18

Candidate Starts for Atuin_73:

(Start: 18 @31058 has 1 MA's), (49, 31298), (70, 31475), (104, 31673), (119, 31835), (125, 31877), (126, 31889), (131, 31925), (151, 32105), (160, 32192), (171, 32270), (198, 32501), (216, 32588), (230, 32636), (240, 32675),

Gene: Big4_71 Start: 29132, Stop: 30859, Start Num: 19

Candidate Starts for Big4_71:

(Start: 19 @29132 has 6 MA's), (26, 29186), (32, 29210), (37, 29261), (41, 29297), (53, 29399), (61, 29450), (63, 29483), (70, 29549), (103, 29756), (106, 29810), (131, 30026), (143, 30119), (146, 30149), (154, 30233), (157, 30269), (160, 30293), (165, 30326), (167, 30341), (186, 30545), (187, 30548), (188, 30551), (198, 30602), (221, 30773),

Gene: Bloom_80 Start: 33695, Stop: 35374, Start Num: 18

Candidate Starts for Bloom_80:

(Start: 16 @33689 has 1 MA's), (Start: 18 @33695 has 1 MA's), (33, 33800), (47, 33923), (49, 33935), (65, 34058), (104, 34310), (106, 34355), (124, 34511), (125, 34520), (126, 34532), (131, 34568), (133, 34589), (153, 34766), (194, 35120), (204, 35186), (206, 35192), (230, 35318), (233, 35327), (240, 35363),

Gene: BlueNGold_76 Start: 31373, Stop: 33103, Start Num: 14

Candidate Starts for BlueNGold_76:

(Start: 14 @31373 has 5 MA's), (32, 31451), (38, 31505), (39, 31517), (49, 31604), (51, 31619), (62, 31709), (69, 31784), (82, 31874), (105, 32069), (106, 32087), (107, 32090), (108, 32105), (110, 32120), (112, 32135), (113, 32162), (118, 32201), (142, 32372), (146, 32405), (150, 32456), (152, 32471), (153, 32480), (161, 32555), (162, 32558), (165, 32582), (187, 32807), (191, 32822), (197, 32852), (203, 32900), (206, 32915), (207, 32921),

Gene: Boopy_77 Start: 31385, Stop: 33115, Start Num: 14

Candidate Starts for Boopy_77:

(Start: 14 @31385 has 5 MA's), (32, 31463), (38, 31517), (39, 31529), (49, 31616), (51, 31631), (62, 31721), (69, 31796), (82, 31886), (105, 32081), (106, 32099), (107, 32102), (108, 32117), (110, 32132), (112, 32147), (113, 32174), (118, 32213), (142, 32384), (146, 32417), (150, 32468), (152, 32483), (153, 32492), (161, 32567), (162, 32570), (165, 32594), (187, 32819), (191, 32834), (197, 32864), (203, 32912), (206, 32927), (207, 32933),

Gene: BrazzalePHS_19 Start: 8484, Stop: 10151, Start Num: 10

Candidate Starts for BrazzalePHS_19:

(Start: 8 @8475 has 37 MA's), (Start: 10 @8484 has 13 MA's), (30, 8598), (32, 8604), (42, 8709), (43, 8721), (57, 8820), (58, 8826), (60, 8838), (64, 8892), (67, 8910), (73, 8964), (78, 8994), (87, 9033), (91, 9051), (92, 9060), (99, 9096), (104, 9159), (108, 9222), (111, 9249), (131, 9396), (132, 9399), (135, 9438), (138, 9456), (147, 9528), (153, 9594), (154, 9603), (163, 9675), (166, 9708), (168, 9714), (171, 9744), (173, 9759), (182, 9897), (186, 9912), (192, 9933), (193, 9936),

Gene: Busephilis_20 Start: 8414, Stop: 10090, Start Num: 8

Candidate Starts for Busephilis_20:

(Start: 8 @8414 has 37 MA's), (Start: 10 @8423 has 13 MA's), (30, 8537), (32, 8543), (42, 8648), (43, 8660), (57, 8759), (58, 8765), (60, 8777), (64, 8831), (67, 8849), (73, 8903), (78, 8933), (87, 8972), (91, 8990), (92, 8999), (99, 9035), (104, 9098), (108, 9161), (111, 9188), (131, 9335), (132, 9338), (135, 9377), (138, 9395), (147, 9467), (153, 9533), (154, 9542), (163, 9614), (166, 9647), (168, 9653), (171, 9683), (173, 9698), (182, 9836), (186, 9851), (192, 9872), (193, 9875),

Gene: Cece_66 Start: 27502, Stop: 29211, Start Num: 19

Candidate Starts for Cece_66:

(Start: 19 @27502 has 6 MA's), (29, 27565), (32, 27574), (48, 27733), (78, 27946), (90, 28012), (103, 28117), (106, 28171), (114, 28258), (130, 28384), (131, 28390), (139, 28462), (146, 28513), (154, 28597), (160, 28657), (184, 28900), (188, 28915), (192, 28930), (195, 28951), (197, 28957), (209, 29038), (221, 29125),

Gene: Cinna_12 Start: 5856, Stop: 7613, Start Num: 10

Candidate Starts for Cinna_12:

(Start: 8 @5847 has 37 MA's), (Start: 10 @5856 has 13 MA's), (23, 5940), (31, 5976), (34, 6009), (42, 6087), (43, 6099), (44, 6108), (45, 6120), (46, 6126), (57, 6198), (58, 6204), (68, 6300), (73, 6342), (78, 6372), (82, 6402), (87, 6438), (88, 6447), (91, 6456), (92, 6465), (102, 6546), (103, 6552), (104, 6561), (108, 6624), (111, 6651), (114, 6696), (123, 6747), (131, 6798), (135, 6840), (138, 6858), (140, 6873), (147, 6930), (154, 7005), (156, 7029), (167, 7113), (168, 7116), (173, 7161), (177, 7191), (181, 7239), (187, 7320), (192, 7338), (193, 7341), (202, 7410), (207, 7434), (229, 7569), (235, 7593),

Gene: ClearAsMud_22 Start: 9173, Stop: 10873, Start Num: 8

Candidate Starts for ClearAsMud_22:

(Start: 8 @9173 has 37 MA's), (Start: 10 @9182 has 13 MA's), (32, 9302), (42, 9407), (43, 9419), (57, 9518), (58, 9524), (59, 9533), (64, 9590), (67, 9608), (73, 9662), (76, 9686), (77, 9689), (84, 9713), (87, 9731), (91, 9749), (92, 9758), (99, 9794), (104, 9857), (108, 9920), (111, 9947), (114, 9992), (131,

10094), (132, 10097), (135, 10136), (138, 10154), (147, 10226), (153, 10292), (154, 10301), (158, 10340), (166, 10406), (168, 10412), (171, 10442), (182, 10595), (187, 10613), (193, 10634), (196, 10655), (197, 10658), (199, 10679), (227, 10832),

Gene: Cranjjs_21 Start: 8638, Stop: 10314, Start Num: 8

Candidate Starts for Cranjjs_21:

(Start: 8 @8638 has 37 MA's), (Start: 10 @8647 has 13 MA's), (12, 8662), (30, 8761), (32, 8767), (42, 8872), (43, 8884), (57, 8983), (58, 8989), (60, 9001), (64, 9055), (67, 9073), (73, 9127), (78, 9157), (87, 9196), (91, 9214), (92, 9223), (99, 9259), (104, 9322), (108, 9385), (111, 9412), (131, 9559), (132, 9562), (135, 9601), (138, 9619), (147, 9691), (153, 9757), (154, 9766), (158, 9805), (163, 9838), (166, 9871), (168, 9877), (171, 9907), (173, 9922), (182, 10060), (186, 10075), (192, 10096), (193, 10099),

Gene: CrazyRich_19 Start: 8448, Stop: 10124, Start Num: 8

Candidate Starts for CrazyRich_19:

(Start: 8 @8448 has 37 MA's), (Start: 10 @8457 has 13 MA's), (30, 8571), (32, 8577), (42, 8682), (43, 8694), (57, 8793), (58, 8799), (60, 8811), (64, 8865), (67, 8883), (73, 8937), (78, 8967), (87, 9006), (91, 9024), (92, 9033), (99, 9069), (104, 9132), (108, 9195), (111, 9222), (131, 9369), (132, 9372), (135, 9411), (138, 9429), (147, 9501), (153, 9567), (154, 9576), (163, 9648), (166, 9681), (168, 9687), (171, 9717), (173, 9732), (182, 9870), (186, 9885), (192, 9906), (193, 9909),

Gene: Cressida_13 Start: 6076, Stop: 7833, Start Num: 10

Candidate Starts for Cressida_13:

(Start: 8 @6067 has 37 MA's), (Start: 10 @6076 has 13 MA's), (23, 6160), (34, 6232), (42, 6310), (43, 6322), (44, 6331), (45, 6343), (46, 6349), (57, 6421), (58, 6427), (68, 6523), (73, 6565), (82, 6625), (83, 6628), (87, 6661), (88, 6670), (91, 6679), (92, 6688), (102, 6769), (103, 6775), (104, 6784), (108, 6847), (111, 6874), (114, 6919), (131, 7021), (134, 7060), (138, 7081), (140, 7096), (147, 7153), (154, 7228), (156, 7252), (167, 7336), (168, 7339), (169, 7348), (173, 7384), (177, 7414), (178, 7420), (181, 7462), (187, 7543), (192, 7561), (193, 7564), (201, 7630), (202, 7633),

Gene: Crisis_21 Start: 8432, Stop: 10108, Start Num: 8

Candidate Starts for Crisis_21:

(Start: 8 @8432 has 37 MA's), (Start: 10 @8441 has 13 MA's), (12, 8456), (30, 8555), (32, 8561), (42, 8666), (43, 8678), (57, 8777), (58, 8783), (60, 8795), (64, 8849), (67, 8867), (73, 8921), (78, 8951), (87, 8990), (91, 9008), (92, 9017), (99, 9053), (104, 9116), (108, 9179), (111, 9206), (131, 9353), (132, 9356), (135, 9395), (138, 9413), (147, 9485), (153, 9551), (154, 9560), (163, 9632), (166, 9665), (168, 9671), (171, 9701), (173, 9716), (182, 9854), (186, 9869), (192, 9890), (193, 9893),

Gene: DunneganBoMo_69 Start: 27884, Stop: 29458, Start Num: 26

Candidate Starts for DunneganBoMo_69:

(Start: 18 @27824 has 1 MA's), (26, 27884), (70, 28241), (103, 28430), (104, 28439), (125, 28643), (131, 28691), (151, 28871), (160, 28958), (170, 29024), (171, 29036), (198, 29267), (216, 29354), (240, 29447),

Gene: EarickHC_20 Start: 8353, Stop: 10035, Start Num: 10

Candidate Starts for EarickHC_20:

(Start: 8 @8344 has 37 MA's), (Start: 10 @8353 has 13 MA's), (12, 8368), (30, 8467), (32, 8473), (42, 8578), (43, 8590), (57, 8689), (58, 8695), (60, 8707), (64, 8761), (67, 8779), (73, 8833), (78, 8863), (87, 8902), (91, 8920), (92, 8929), (99, 8965), (104, 9028), (108, 9091), (111, 9118), (131, 9265), (132, 9268), (135, 9307), (147, 9397), (153, 9463), (154, 9472), (163, 9544), (166, 9577), (168, 9583), (171, 9613), (173, 9628), (182, 9766), (186, 9781), (192, 9802), (193, 9805),

Gene: Fireman_20 Start: 8089, Stop: 9774, Start Num: 10

Candidate Starts for Fireman_20:

(Start: 8 @8080 has 37 MA's), (Start: 10 @8089 has 13 MA's), (32, 8212), (42, 8317), (43, 8329), (64, 8500), (67, 8518), (72, 8569), (87, 8641), (89, 8653), (91, 8659), (92, 8668), (99, 8704), (104, 8767), (108, 8830), (111, 8857), (114, 8902), (116, 8911), (123, 8953), (131, 9004), (132, 9007), (135, 9046), (136, 9055), (138, 9064), (143, 9097), (147, 9136), (153, 9202), (154, 9211), (155, 9226), (158, 9250), (166, 9316), (168, 9322), (171, 9349), (182, 9502), (193, 9541), (196, 9562), (201, 9607), (231, 9754),

Gene: Forza_77 Start: 31301, Stop: 33031, Start Num: 14

Candidate Starts for Forza_77:

(Start: 14 @31301 has 5 MA's), (32, 31379), (38, 31433), (39, 31445), (49, 31532), (51, 31547), (62, 31637), (69, 31712), (82, 31802), (105, 31997), (106, 32015), (107, 32018), (108, 32033), (110, 32048), (112, 32063), (113, 32090), (118, 32129), (142, 32300), (146, 32333), (150, 32384), (152, 32399), (153, 32408), (161, 32483), (162, 32486), (165, 32510), (187, 32735), (191, 32750), (197, 32780), (203, 32828), (206, 32843), (207, 32849),

Gene: FuzzBuster_24 Start: 8570, Stop: 10354, Start Num: 8

Candidate Starts for FuzzBuster_24:

(Start: 8 @8570 has 37 MA's), (Start: 10 @8579 has 13 MA's), (20, 8636), (42, 8798), (46, 8837), (60, 8930), (78, 9086), (85, 9116), (86, 9119), (108, 9314), (111, 9341), (114, 9386), (115, 9392), (116, 9395), (120, 9419), (131, 9488), (135, 9530), (136, 9539), (137, 9542), (146, 9611), (154, 9695), (156, 9719), (167, 9803), (168, 9806), (175, 9863), (176, 9872), (177, 9878), (192, 10025), (196, 10049), (200, 10076), (201, 10094), (210, 10136), (226, 10265),

Gene: GMA2_9 Start: 6225, Stop: 7979, Start Num: 9

Candidate Starts for GMA2_9:

(9, 6225), (38, 6396), (49, 6495), (50, 6504), (56, 6543), (79, 6741), (93, 6834), (105, 6963), (106, 6981), (112, 7029), (113, 7056), (114, 7068), (127, 7143), (153, 7374), (162, 7452), (167, 7491), (189, 7707), (197, 7746), (206, 7809), (207, 7815), (216, 7851), (220, 7926),

Gene: Ganandorf_19 Start: 8504, Stop: 10171, Start Num: 10

Candidate Starts for Ganandorf_19:

(Start: 8 @8495 has 37 MA's), (Start: 10 @8504 has 13 MA's), (30, 8618), (32, 8624), (42, 8729), (43, 8741), (57, 8840), (58, 8846), (60, 8858), (64, 8912), (67, 8930), (73, 8984), (78, 9014), (87, 9053), (91, 9071), (92, 9080), (99, 9116), (104, 9179), (108, 9242), (111, 9269), (131, 9416), (132, 9419), (135, 9458), (138, 9476), (147, 9548), (153, 9614), (154, 9623), (163, 9695), (166, 9728), (168, 9734), (171, 9764), (173, 9779), (182, 9917), (186, 9932), (192, 9953), (193, 9956),

Gene: Gina_20 Start: 7583, Stop: 9301, Start Num: 8

Candidate Starts for Gina_20:

(Start: 8 @7583 has 37 MA's), (Start: 10 @7592 has 13 MA's), (32, 7712), (42, 7817), (43, 7829), (57, 7928), (60, 7946), (64, 8000), (67, 8018), (72, 8069), (75, 8093), (84, 8123), (89, 8153), (91, 8159), (92, 8168), (99, 8204), (104, 8267), (108, 8330), (111, 8357), (114, 8402), (131, 8504), (132, 8507), (136, 8555), (138, 8564), (143, 8597), (147, 8636), (153, 8702), (154, 8711), (155, 8726), (156, 8735), (158, 8750), (159, 8762), (163, 8783), (166, 8816), (168, 8822), (171, 8852), (177, 8897), (182, 9005), (189, 9029), (196, 9065), (197, 9068), (199, 9089), (201, 9110), (223, 9245), (231, 9257), (237, 9284),

Gene: GodonK_66 Start: 24698, Stop: 26512, Start Num: 13

Candidate Starts for GodonK_66:

(Start: 11 @24686 has 1 MA's), (Start: 13 @24698 has 1 MA's), (21, 24743), (24, 24767), (38, 24854), (46, 24938), (47, 24941), (55, 24986), (79, 25199), (94, 25298), (98, 25322), (106, 25442), (109, 25472), (112, 25490), (113, 25517), (128, 25613), (131, 25637), (134, 25676), (137, 25691), (143, 25730), (144, 25733), (145, 25736), (149, 25784), (150, 25811), (153, 25835), (161, 25910), (162, 25913), (163, 25916), (164, 25928), (165, 25937), (167, 25952), (168, 25955), (183, 26150), (195, 26201), (207, 26276), (212, 26297), (232, 26414),

Gene: Hermeonysus_19 Start: 8365, Stop: 10041, Start Num: 8

Candidate Starts for Hermeonysus_19:

(Start: 8 @8365 has 37 MA's), (Start: 10 @8374 has 13 MA's), (30, 8488), (32, 8494), (42, 8599), (43, 8611), (57, 8710), (58, 8716), (60, 8728), (64, 8782), (67, 8800), (73, 8854), (78, 8884), (87, 8923), (91, 8941), (92, 8950), (99, 8986), (104, 9049), (108, 9112), (111, 9139), (131, 9286), (132, 9289), (135, 9328), (138, 9346), (147, 9418), (153, 9484), (154, 9493), (163, 9565), (166, 9598), (168, 9604), (171, 9634), (173, 9649), (182, 9787), (186, 9802), (192, 9823), (193, 9826),

Gene: Honeyfin_21 Start: 8650, Stop: 10356, Start Num: 8

Candidate Starts for Honeyfin_21:

(Start: 8 @8650 has 37 MA's), (Start: 10 @8659 has 13 MA's), (12, 8674), (30, 8773), (32, 8779), (42, 8884), (43, 8896), (57, 8995), (58, 9001), (64, 9067), (67, 9085), (73, 9139), (78, 9169), (87, 9208), (91, 9226), (92, 9235), (99, 9271), (104, 9334), (108, 9397), (111, 9424), (114, 9469), (131, 9571), (132, 9574), (135, 9613), (138, 9631), (147, 9703), (153, 9769), (154, 9778), (158, 9817), (163, 9850), (166, 9883), (168, 9889), (171, 9919), (182, 10072), (186, 10087), (192, 10108), (193, 10111), (231, 10324),

Gene: Jayden_20 Start: 7979, Stop: 9697, Start Num: 8

Candidate Starts for Jayden_20:

(1, 7835), (Start: 8 @7979 has 37 MA's), (Start: 10 @7988 has 13 MA's), (25, 8084), (32, 8108), (42, 8213), (43, 8225), (57, 8324), (60, 8342), (64, 8396), (67, 8414), (72, 8465), (73, 8468), (80, 8507), (84, 8519), (87, 8537), (91, 8555), (92, 8564), (99, 8600), (104, 8663), (108, 8726), (111, 8753), (114, 8798), (131, 8900), (132, 8903), (138, 8960), (143, 8993), (147, 9032), (153, 9098), (154, 9107), (155, 9122), (158, 9146), (159, 9158), (166, 9212), (168, 9218), (171, 9248), (182, 9401), (192, 9437), (196, 9461), (197, 9464), (199, 9485), (201, 9506), (222, 9629), (223, 9641), (231, 9653), (237, 9680),

Gene: Jefe_20 Start: 8418, Stop: 10094, Start Num: 8

Candidate Starts for Jefe_20:

(Start: 8 @8418 has 37 MA's), (Start: 10 @8427 has 13 MA's), (30, 8541), (32, 8547), (42, 8652), (43, 8664), (58, 8769), (60, 8781), (64, 8835), (67, 8853), (73, 8907), (78, 8937), (87, 8976), (91, 8994), (92, 9003), (99, 9039), (104, 9102), (108, 9165), (111, 9192), (131, 9339), (132, 9342), (135, 9381), (138, 9399), (147, 9471), (153, 9537), (154, 9546), (163, 9618), (166, 9651), (168, 9657), (171, 9687), (173, 9702), (182, 9840), (186, 9855), (192, 9876), (193, 9879),

Gene: Jollipop_20 Start: 8736, Stop: 10442, Start Num: 8

Candidate Starts for Jollipop_20:

(Start: 8 @8736 has 37 MA's), (Start: 10 @8745 has 13 MA's), (12, 8760), (30, 8859), (32, 8865), (42, 8970), (43, 8982), (57, 9081), (58, 9087), (60, 9099), (64, 9153), (67, 9171), (73, 9225), (78, 9255), (87, 9294), (91, 9312), (92, 9321), (99, 9357), (104, 9420), (108, 9483), (111, 9510), (114, 9555), (131, 9657), (132, 9660), (135, 9699), (138, 9717), (147, 9789), (153, 9855), (154, 9864), (158, 9903), (163, 9936), (166, 9969), (168, 9975), (171, 10005), (182, 10158), (186, 10173), (192, 10194), (193, 10197), (227, 10401), (231, 10410),

Gene: KaiHaiDragon_20 Start: 8353, Stop: 10035, Start Num: 10

Candidate Starts for KaiHaiDragon_20:

(Start: 8 @8344 has 37 MA's), (Start: 10 @8353 has 13 MA's), (12, 8368), (30, 8467), (32, 8473), (42, 8578), (43, 8590), (57, 8689), (58, 8695), (60, 8707), (64, 8761), (67, 8779), (73, 8833), (78, 8863), (87, 8902), (91, 8920), (92, 8929), (99, 8965), (104, 9028), (108, 9091), (111, 9118), (131, 9265), (132, 9268), (135, 9307), (147, 9397), (153, 9463), (154, 9472), (163, 9544), (166, 9577), (168, 9583), (171, 9613), (173, 9628), (182, 9766), (186, 9781), (192, 9802), (193, 9805),

Gene: Kowalski_19 Start: 8475, Stop: 10151, Start Num: 8

Candidate Starts for Kowalski_19:

(Start: 8 @8475 has 37 MA's), (Start: 10 @8484 has 13 MA's), (30, 8598), (32, 8604), (42, 8709), (43, 8721), (57, 8820), (58, 8826), (60, 8838), (64, 8892), (67, 8910), (73, 8964), (78, 8994), (87, 9033), (91, 9051), (92, 9060), (99, 9096), (104, 9159), (108, 9222), (111, 9249), (131, 9396), (132, 9399), (135, 9438), (138, 9456), (147, 9528), (153, 9594), (154, 9603), (163, 9675), (166, 9708), (168, 9714), (171, 9744), (173, 9759), (182, 9897), (186, 9912), (192, 9933), (193, 9936),

Gene: Kozie_14 Start: 7119, Stop: 8849, Start Num: 10

Candidate Starts for Kozie_14:

(Start: 8 @7110 has 37 MA's), (Start: 10 @7119 has 13 MA's), (23, 7200), (36, 7275), (42, 7341), (43, 7353), (44, 7362), (46, 7380), (57, 7452), (64, 7524), (68, 7554), (72, 7593), (73, 7596), (81, 7650), (84, 7677), (87, 7695), (88, 7704), (91, 7713), (92, 7722), (96, 7746), (101, 7779), (102, 7800), (103, 7806), (111, 7905), (114, 7950), (131, 8052), (138, 8112), (140, 8127), (147, 8184), (154, 8259), (158, 8298), (168, 8370), (169, 8379), (187, 8574), (192, 8592), (193, 8595), (200, 8643), (202, 8664), (207, 8688), (208, 8694), (214, 8712), (225, 8805),

Gene: LittleFortune_21 Start: 8692, Stop: 10398, Start Num: 8

Candidate Starts for LittleFortune_21:

(Start: 8 @8692 has 37 MA's), (Start: 10 @8701 has 13 MA's), (12, 8716), (30, 8815), (32, 8821), (42, 8926), (43, 8938), (57, 9037), (58, 9043), (64, 9109), (67, 9127), (73, 9181), (78, 9211), (87, 9250), (91, 9268), (92, 9277), (99, 9313), (104, 9376), (108, 9439), (111, 9466), (114, 9511), (131, 9613), (132, 9616), (135, 9655), (138, 9673), (147, 9745), (153, 9811), (154, 9820), (158, 9859), (163, 9892), (166, 9925), (168, 9931), (171, 9961), (182, 10114), (186, 10129), (192, 10150), (193, 10153), (227, 10357), (231, 10366),

Gene: Mareelih_76 Start: 30803, Stop: 32533, Start Num: 14

Candidate Starts for Mareelih_76:

(Start: 14 @30803 has 5 MA's), (32, 30881), (38, 30935), (39, 30947), (49, 31034), (51, 31049), (62, 31139), (69, 31214), (82, 31304), (105, 31499), (106, 31517), (107, 31520), (108, 31535), (110, 31550), (112, 31565), (113, 31592), (118, 31631), (142, 31802), (146, 31835), (150, 31886), (152, 31901), (153, 31910), (161, 31985), (162, 31988), (165, 32012), (187, 32237), (191, 32252), (197, 32282), (203, 32330), (206, 32345), (207, 32351),

Gene: Margaery_12 Start: 5952, Stop: 7694, Start Num: 10

Candidate Starts for Margaery_12:

(Start: 8 @5943 has 37 MA's), (Start: 10 @5952 has 13 MA's), (22, 6021), (23, 6033), (34, 6090), (36, 6105), (42, 6168), (43, 6180), (44, 6189), (46, 6207), (57, 6279), (68, 6381), (73, 6423), (81, 6474), (84, 6501), (85, 6507), (87, 6519), (88, 6528), (95, 6567), (96, 6570), (101, 6606), (102, 6627), (103, 6633), (104, 6642), (108, 6705), (111, 6732), (114, 6777), (131, 6879), (136, 6930), (143, 6972), (147, 7011), (153, 7077), (154, 7086), (156, 7110), (157, 7122), (158, 7125), (168, 7197), (173, 7242), (175, 7257), (192, 7419), (200, 7470), (202, 7491), (211, 7536), (218, 7590),

Gene: Matzah_13 Start: 6000, Stop: 7757, Start Num: 10

Candidate Starts for Matzah_13:

(Start: 8 @5991 has 37 MA's), (Start: 10 @6000 has 13 MA's), (23, 6084), (31, 6120), (34, 6153), (42, 6231), (43, 6243), (44, 6252), (45, 6264), (46, 6270), (57, 6342), (58, 6348), (68, 6444), (73, 6486), (78, 6516), (82, 6546), (87, 6582), (88, 6591), (91, 6600), (92, 6609), (102, 6690), (103, 6696), (104, 6705), (108, 6768), (111, 6795), (114, 6840), (123, 6891), (131, 6942), (138, 7002), (140, 7017), (147, 7074), (154, 7149), (156, 7173), (167, 7257), (168, 7260), (173, 7305), (177, 7335), (181, 7383), (187, 7464), (192, 7482), (193, 7485), (202, 7554), (207, 7578), (229, 7713), (235, 7737),

Gene: Megan_13 Start: 8673, Stop: 10412, Start Num: 8

Candidate Starts for Megan_13:

(7, 8646), (Start: 8 @8673 has 37 MA's), (Start: 10 @8682 has 13 MA's), (15, 8712), (28, 8790), (33, 8826), (42, 8910), (43, 8922), (49, 8964), (52, 8985), (60, 9039), (64, 9093), (66, 9096), (72, 9162), (87, 9225), (91, 9243), (92, 9252), (104, 9345), (108, 9408), (111, 9435), (114, 9480), (120, 9513), (121, 9522), (122, 9525), (131, 9582), (132, 9585), (135, 9624), (136, 9633), (138, 9642), (143, 9675), (147, 9714), (153, 9780), (154, 9789), (156, 9813), (158, 9828), (168, 9900), (175, 9975), (177, 9990), (184, 10110), (185, 10116), (192, 10140), (193, 10143), (200, 10191), (208, 10242), (211, 10254), (217, 10290), (219, 10332), (234, 10395),

Gene: MementoMori_13 Start: 5993, Stop: 7759, Start Num: 8

Candidate Starts for MementoMori_13:

(Start: 8 @5993 has 37 MA's), (Start: 10 @6002 has 13 MA's), (23, 6083), (31, 6119), (34, 6152), (42, 6230), (43, 6242), (44, 6251), (45, 6263), (46, 6269), (57, 6341), (58, 6347), (68, 6443), (73, 6485), (78, 6515), (81, 6536), (82, 6545), (87, 6581), (88, 6590), (91, 6599), (92, 6608), (102, 6689), (103, 6695), (104, 6704), (108, 6767), (111, 6794), (114, 6839), (123, 6890), (131, 6941), (138, 7001), (140, 7016), (147, 7073), (154, 7148), (156, 7172), (167, 7256), (168, 7259), (173, 7304), (177, 7334), (181, 7382), (187, 7463), (192, 7481), (193, 7484), (200, 7532), (202, 7553), (207, 7577), (208, 7583), (229, 7715), (235, 7739),

Gene: Merry_20 Start: 8465, Stop: 10132, Start Num: 10

Candidate Starts for Merry_20:

(2, 8363), (7, 8429), (Start: 8 @8456 has 37 MA's), (Start: 10 @8465 has 13 MA's), (25, 8561), (32, 8585), (42, 8690), (43, 8702), (57, 8801), (64, 8873), (67, 8891), (75, 8966), (77, 8972), (87, 9011), (89, 9023), (92, 9038), (95, 9062), (99, 9074), (101, 9101), (103, 9128), (104, 9137), (111, 9227), (114, 9272), (131, 9374), (132, 9377), (136, 9425), (138, 9434), (147, 9506), (153, 9572), (154, 9581), (168, 9692), (174, 9749), (187, 9893), (190, 9905), (196, 9935), (222, 10103),

Gene: Metamorphoo_20 Start: 8066, Stop: 9760, Start Num: 8

Candidate Starts for Metamorphoo_20:

(Start: 8 @8066 has 37 MA's), (Start: 10 @8075 has 13 MA's), (32, 8198), (42, 8303), (43, 8315), (57, 8414), (64, 8486), (67, 8504), (87, 8627), (89, 8639), (91, 8645), (92, 8654), (99, 8690), (104, 8753), (108, 8816), (111, 8843), (114, 8888), (116, 8897), (123, 8939), (131, 8990), (132, 8993), (135, 9032), (136, 9041), (138, 9050), (143, 9083), (147, 9122), (153, 9188), (154, 9197), (155, 9212), (158, 9236), (166, 9302), (168, 9308), (171, 9335), (182, 9488), (193, 9527), (196, 9548), (201, 9593), (231, 9740),

Gene: Mimi_83 Start: 33042, Stop: 34721, Start Num: 18

Candidate Starts for Mimi_83:

(Start: 16 @33036 has 1 MA's), (Start: 18 @33042 has 1 MA's), (33, 33147), (47, 33270), (49, 33282), (65, 33405), (104, 33657), (106, 33702), (124, 33858), (125, 33867), (126, 33879), (131, 33915), (133, 33936), (153, 34113), (194, 34467), (204, 34533), (206, 34539), (230, 34665), (233, 34674), (240, 34710),

Gene: Nicole72_14 Start: 8906, Stop: 10651, Start Num: 8

Candidate Starts for Nicole72_14:

(Start: 8 @8906 has 37 MA's), (Start: 10 @8915 has 13 MA's), (33, 9056), (42, 9140), (43, 9152), (45, 9173), (49, 9194), (57, 9251), (60, 9269), (67, 9341), (72, 9392), (87, 9455), (91, 9473), (92, 9482), (104, 9575), (108, 9638), (111, 9665), (114, 9710), (120, 9743), (121, 9752), (122, 9755), (131, 9812), (132, 9815), (135, 9854), (136, 9863), (138, 9872), (143, 9905), (147, 9944), (153, 10010), (154, 10019), (156, 10043), (158, 10058), (168, 10130), (171, 10175), (184, 10340), (185, 10346), (192, 10370), (193, 10373), (200, 10421), (201, 10439), (209, 10478), (211, 10487), (219, 10565), (228, 10607),

Gene: NoodlelyBoi_19 Start: 8480, Stop: 10180, Start Num: 8

Candidate Starts for NoodlelyBoi_19:

(Start: 8 @8480 has 37 MA's), (Start: 10 @8489 has 13 MA's), (32, 8609), (42, 8714), (43, 8726), (57, 8825), (58, 8831), (59, 8840), (64, 8897), (67, 8915), (73, 8969), (76, 8993), (77, 8996), (84, 9020), (87, 9038), (91, 9056), (92, 9065), (99, 9101), (104, 9164), (108, 9227), (111, 9254), (114, 9299), (131, 9401), (132, 9404), (135, 9443), (138, 9461), (147, 9533), (153, 9599), (154, 9608), (158, 9647), (166, 9713), (168, 9719), (171, 9749), (182, 9902), (187, 9920), (193, 9941), (196, 9962), (197, 9965), (199, 9986),

Gene: Onika_19 Start: 8448, Stop: 10124, Start Num: 8

Candidate Starts for Onika_19:

(Start: 8 @8448 has 37 MA's), (Start: 10 @8457 has 13 MA's), (30, 8571), (32, 8577), (42, 8682), (43, 8694), (57, 8793), (58, 8799), (60, 8811), (64, 8865), (67, 8883), (73, 8937), (78, 8967), (87, 9006), (91, 9024), (92, 9033), (99, 9069), (104, 9132), (108, 9195), (111, 9222), (114, 9267), (131, 9369), (132, 9372), (135, 9411), (138, 9429), (147, 9501), (153, 9567), (154, 9576), (158, 9615), (163, 9648), (166, 9681), (168, 9687), (171, 9717), (173, 9732), (182, 9870), (186, 9885), (192, 9906), (193, 9909),

Gene: Paschalis_19 Start: 8434, Stop: 10140, Start Num: 8

Candidate Starts for Paschalis_19:

(Start: 8 @8434 has 37 MA's), (Start: 10 @8443 has 13 MA's), (12, 8458), (30, 8557), (32, 8563), (42, 8668), (43, 8680), (57, 8779), (58, 8785), (60, 8797), (64, 8851), (67, 8869), (73, 8923), (78, 8953), (87, 8992), (91, 9010), (92, 9019), (99, 9055), (104, 9118), (108, 9181), (111, 9208), (114, 9253), (131, 9355), (132, 9358), (135, 9397), (138, 9415), (147, 9487), (153, 9553), (154, 9562), (158, 9601), (163, 9634), (166, 9667), (168, 9673), (171, 9703), (182, 9856), (186, 9871), (192, 9892), (193, 9895), (231, 10108),

Gene: Patbob_76 Start: 33335, Stop: 35014, Start Num: 18

Candidate Starts for Patbob_76:

(Start: 16 @33329 has 1 MA's), (Start: 18 @33335 has 1 MA's), (33, 33440), (47, 33563), (49, 33575), (65, 33698), (104, 33950), (106, 33995), (124, 34151), (125, 34160), (126, 34172), (131, 34208), (133, 34229), (153, 34406), (194, 34760), (204, 34826), (206, 34832), (230, 34958), (233, 34967), (240, 35003),

Gene: PauloDiaboli_82 Start: 29189, Stop: 30925, Start Num: 19

Candidate Starts for PauloDiaboli_82:

(Start: 19 @29189 has 6 MA's), (29, 29252), (32, 29261), (40, 29339), (47, 29411), (48, 29420), (52, 29444), (54, 29453), (63, 29534), (74, 29627), (87, 29684), (103, 29807), (106, 29861), (117, 29969), (131, 30080), (135, 30122), (146, 30203), (148, 30224), (154, 30287), (160, 30347), (165, 30380), (172, 30428), (179, 30488), (186, 30599), (205, 30707), (221, 30827), (224, 30851),

Gene: Phendrix_65 Start: 24534, Stop: 26360, Start Num: 11

Candidate Starts for Phendrix_65:

(Start: 11 @24534 has 1 MA's), (Start: 13 @24546 has 1 MA's), (21, 24591), (24, 24615), (38, 24702), (46, 24786), (47, 24789), (55, 24834), (79, 25047), (94, 25146), (98, 25170), (106, 25290), (109, 25320), (112, 25338), (113, 25365), (128, 25461), (131, 25485), (134, 25524), (137, 25539), (143, 25578), (144, 25581), (145, 25584), (149, 25632), (150, 25659), (153, 25683), (161, 25758), (162, 25761), (163, 25764), (164, 25776), (165, 25785), (167, 25800), (183, 25998), (195, 26049), (207, 26124), (212, 26145), (232, 26262),

Gene: Phorgeous_19 Start: 8286, Stop: 9992, Start Num: 8

Candidate Starts for Phorgeous_19:

(Start: 8 @8286 has 37 MA's), (Start: 10 @8295 has 13 MA's), (12, 8310), (30, 8409), (32, 8415), (42, 8520), (43, 8532), (57, 8631), (58, 8637), (64, 8703), (67, 8721), (73, 8775), (78, 8805), (87, 8844), (91, 8862), (92, 8871), (99, 8907), (104, 8970), (108, 9033), (111, 9060), (114, 9105), (131, 9207), (132, 9210), (135, 9249), (138, 9267), (147, 9339), (153, 9405), (154, 9414), (158, 9453), (163, 9486),

(166, 9519), (168, 9525), (171, 9555), (182, 9708), (186, 9723), (192, 9744), (193, 9747), (227, 9951), (231, 9960),

Gene: Phrampa_70 Start: 30361, Stop: 32055, Start Num: 18

Candidate Starts for Phrampa_70:

(Start: 16 @30355 has 1 MA's), (Start: 18 @30361 has 1 MA's), (33, 30463), (47, 30586), (49, 30598), (56, 30646), (65, 30721), (74, 30802), (104, 30973), (106, 31018), (114, 31105), (124, 31174), (125, 31183), (131, 31231), (133, 31252), (136, 31282), (153, 31429), (194, 31783), (206, 31855), (230, 31996), (233, 32005), (240, 32044),

Gene: Phrancesco_21 Start: 8565, Stop: 10271, Start Num: 8

Candidate Starts for Phrancesco_21:

(Start: 8 @8565 has 37 MA's), (Start: 10 @8574 has 13 MA's), (12, 8589), (30, 8688), (32, 8694), (42, 8799), (43, 8811), (57, 8910), (58, 8916), (64, 8982), (67, 9000), (73, 9054), (78, 9084), (87, 9123), (91, 9141), (92, 9150), (99, 9186), (104, 9249), (108, 9312), (111, 9339), (114, 9384), (131, 9486), (132, 9489), (135, 9528), (138, 9546), (147, 9618), (153, 9684), (154, 9693), (158, 9732), (163, 9765), (166, 9798), (168, 9804), (171, 9834), (182, 9987), (186, 10002), (192, 10023), (193, 10026), (231, 10239),

Gene: PierreOrion_20 Start: 8589, Stop: 10295, Start Num: 8

Candidate Starts for PierreOrion_20:

(Start: 8 @8589 has 37 MA's), (Start: 10 @8598 has 13 MA's), (12, 8613), (30, 8712), (32, 8718), (42, 8823), (43, 8835), (57, 8934), (58, 8940), (60, 8952), (64, 9006), (67, 9024), (73, 9078), (78, 9108), (87, 9147), (91, 9165), (92, 9174), (99, 9210), (104, 9273), (108, 9336), (111, 9363), (114, 9408), (131, 9510), (132, 9513), (135, 9552), (138, 9570), (147, 9642), (153, 9708), (154, 9717), (158, 9756), (163, 9789), (166, 9822), (168, 9828), (171, 9858), (182, 10011), (186, 10026), (192, 10047), (193, 10050), (231, 10263),

Gene: PiperSansNom_20 Start: 8738, Stop: 10444, Start Num: 8

Candidate Starts for PiperSansNom_20:

(Start: 8 @8738 has 37 MA's), (Start: 10 @8747 has 13 MA's), (12, 8762), (30, 8861), (32, 8867), (42, 8972), (43, 8984), (57, 9083), (58, 9089), (60, 9101), (64, 9155), (67, 9173), (73, 9227), (78, 9257), (87, 9296), (91, 9314), (92, 9323), (99, 9359), (104, 9422), (108, 9485), (111, 9512), (131, 9659), (132, 9662), (135, 9701), (138, 9719), (147, 9791), (153, 9857), (154, 9866), (158, 9905), (163, 9938), (166, 9971), (168, 9977), (171, 10007), (182, 10160), (186, 10175), (192, 10196), (193, 10199), (227, 10403), (231, 10412),

Gene: Piperis_20 Start: 8441, Stop: 10117, Start Num: 8

Candidate Starts for Piperis_20:

(Start: 8 @8441 has 37 MA's), (Start: 10 @8450 has 13 MA's), (12, 8465), (30, 8564), (32, 8570), (42, 8675), (43, 8687), (57, 8786), (58, 8792), (60, 8804), (64, 8858), (67, 8876), (73, 8930), (78, 8960), (87, 8999), (91, 9017), (92, 9026), (99, 9062), (104, 9125), (108, 9188), (111, 9215), (114, 9260), (131, 9362), (132, 9365), (135, 9404), (138, 9422), (147, 9494), (153, 9560), (154, 9569), (158, 9608), (163, 9641), (166, 9674), (168, 9680), (171, 9710), (182, 9863), (186, 9878), (192, 9899), (193, 9902),

Gene: Pulchra_21 Start: 8840, Stop: 10516, Start Num: 8

Candidate Starts for Pulchra_21:

(Start: 8 @8840 has 37 MA's), (Start: 10 @8849 has 13 MA's), (12, 8864), (30, 8963), (32, 8969), (42, 9074), (43, 9086), (57, 9185), (58, 9191), (60, 9203), (64, 9257), (67, 9275), (73, 9329), (78, 9359), (87, 9398), (91, 9416), (92, 9425), (99, 9461), (104, 9524), (108, 9587), (111, 9614), (131, 9761), (132, 9764), (135, 9803), (138, 9821), (147, 9893), (153, 9959), (154, 9968), (158, 10007), (163, 10040), (166, 10073), (168, 10079), (171, 10109), (173, 10124), (182, 10262), (186, 10277), (192, 10298), (193, 10301),

Gene: Pumpernickel_80 Start: 31376, Stop: 33094, Start Num: 19

Candidate Starts for Pumpernickel_80:

(3, 31238), (5, 31247), (6, 31259), (Start: 19 @31376 has 6 MA's), (35, 31490), (74, 31817), (98, 31934), (106, 32051), (117, 32159), (131, 32267), (146, 32390), (148, 32411), (153, 32465), (160, 32534), (180, 32702), (186, 32786), (187, 32789), (188, 32792), (200, 32858),

Gene: Quhwah_22 Start: 8789, Stop: 10495, Start Num: 8

Candidate Starts for Quhwah_22:

(Start: 8 @8789 has 37 MA's), (Start: 10 @8798 has 13 MA's), (30, 8912), (32, 8918), (42, 9023), (43, 9035), (57, 9134), (58, 9140), (60, 9152), (64, 9206), (67, 9224), (73, 9278), (78, 9308), (87, 9347), (91, 9365), (92, 9374), (99, 9410), (104, 9473), (108, 9536), (111, 9563), (114, 9608), (131, 9710), (132, 9713), (135, 9752), (138, 9770), (147, 9842), (153, 9908), (154, 9917), (158, 9956), (163, 9989), (166, 10022), (168, 10028), (171, 10058), (182, 10211), (186, 10226), (192, 10247), (193, 10250), (227, 10454), (231, 10463),

Gene: Racecar_77 Start: 33689, Stop: 35374, Start Num: 16

Candidate Starts for Racecar_77:

(Start: 16 @33689 has 1 MA's), (Start: 18 @33695 has 1 MA's), (33, 33800), (47, 33923), (49, 33935), (65, 34058), (104, 34310), (106, 34355), (124, 34511), (125, 34520), (126, 34532), (131, 34568), (133, 34589), (153, 34766), (194, 35120), (204, 35186), (206, 35192), (230, 35318), (233, 35327), (240, 35363),

Gene: Ramiel05_19 Start: 8475, Stop: 10151, Start Num: 8

Candidate Starts for Ramiel05_19:

(Start: 8 @8475 has 37 MA's), (Start: 10 @8484 has 13 MA's), (30, 8598), (32, 8604), (42, 8709), (43, 8721), (57, 8820), (58, 8826), (60, 8838), (64, 8892), (67, 8910), (73, 8964), (78, 8994), (87, 9033), (91, 9051), (92, 9060), (99, 9096), (104, 9159), (108, 9222), (111, 9249), (131, 9396), (132, 9399), (135, 9438), (138, 9456), (147, 9528), (153, 9594), (154, 9603), (163, 9675), (166, 9708), (168, 9714), (171, 9744), (173, 9759), (182, 9897), (186, 9912), (192, 9933), (193, 9936),

Gene: RobsFeet_21 Start: 8347, Stop: 10041, Start Num: 8

Candidate Starts for RobsFeet_21:

(Start: 8 @8347 has 37 MA's), (Start: 10 @8356 has 13 MA's), (32, 8479), (42, 8584), (43, 8596), (57, 8695), (64, 8767), (67, 8785), (87, 8908), (89, 8920), (91, 8926), (92, 8935), (99, 8971), (104, 9034), (108, 9097), (111, 9124), (114, 9169), (123, 9220), (131, 9271), (132, 9274), (135, 9313), (136, 9322), (138, 9331), (143, 9364), (147, 9403), (153, 9469), (154, 9478), (155, 9493), (158, 9517), (166, 9583), (168, 9589), (171, 9616), (182, 9769), (193, 9808), (196, 9829), (201, 9874), (231, 10021),

Gene: SJReid_81 Start: 34914, Stop: 36533, Start Num: 18

Candidate Starts for SJReid_81:

(Start: 18 @34914 has 1 MA's), (33, 35016), (34, 35022), (49, 35151), (71, 35334), (129, 35763), (132, 35775), (133, 35793), (153, 35970), (160, 36039), (186, 36291), (194, 36324), (206, 36396), (213, 36423), (230, 36480), (240, 36522),

Gene: Savannah_19 Start: 8499, Stop: 10175, Start Num: 8

Candidate Starts for Savannah_19:

(Start: 8 @8499 has 37 MA's), (Start: 10 @8508 has 13 MA's), (30, 8622), (32, 8628), (42, 8733), (43, 8745), (57, 8844), (58, 8850), (60, 8862), (64, 8916), (67, 8934), (73, 8988), (78, 9018), (87, 9057), (91, 9075), (92, 9084), (99, 9120), (104, 9183), (108, 9246), (111, 9273), (131, 9420), (132, 9423), (135, 9462), (138, 9480), (147, 9552), (153, 9618), (154, 9627), (163, 9699), (166, 9732), (168, 9738), (171, 9768), (173, 9783), (182, 9921), (186, 9936), (192, 9957), (193, 9960),

Gene: Scumberland_21 Start: 8659, Stop: 10365, Start Num: 8

Candidate Starts for Scumberland_21:

(Start: 8 @8659 has 37 MA's), (Start: 10 @8668 has 13 MA's), (12, 8683), (30, 8782), (32, 8788), (42, 8893), (43, 8905), (57, 9004), (58, 9010), (64, 9076), (67, 9094), (73, 9148), (78, 9178), (87, 9217), (91, 9235), (92, 9244), (99, 9280), (104, 9343), (108, 9406), (111, 9433), (114, 9478), (131, 9580), (132, 9583), (135, 9622), (138, 9640), (147, 9712), (153, 9778), (154, 9787), (158, 9826), (163, 9859), (166, 9892), (168, 9898), (171, 9928), (182, 10081), (186, 10096), (192, 10117), (193, 10120), (231, 10333),

Gene: Selwyn23_21 Start: 8668, Stop: 10344, Start Num: 8

Candidate Starts for Selwyn23_21:

(Start: 8 @8668 has 37 MA's), (Start: 10 @8677 has 13 MA's), (12, 8692), (30, 8791), (32, 8797), (42, 8902), (43, 8914), (57, 9013), (58, 9019), (60, 9031), (64, 9085), (67, 9103), (73, 9157), (78, 9187), (87, 9226), (91, 9244), (92, 9253), (99, 9289), (104, 9352), (108, 9415), (111, 9442), (131, 9589), (132, 9592), (135, 9631), (138, 9649), (147, 9721), (153, 9787), (154, 9796), (163, 9868), (166, 9901), (168, 9907), (171, 9937), (173, 9952), (182, 10090), (186, 10105), (192, 10126), (193, 10129),

Gene: Shotgun_19 Start: 8297, Stop: 9973, Start Num: 8

Candidate Starts for Shotgun_19:

(Start: 8 @8297 has 37 MA's), (Start: 10 @8306 has 13 MA's), (30, 8420), (32, 8426), (42, 8531), (43, 8543), (57, 8642), (58, 8648), (60, 8660), (64, 8714), (67, 8732), (73, 8786), (78, 8816), (87, 8855), (91, 8873), (92, 8882), (99, 8918), (104, 8981), (108, 9044), (111, 9071), (131, 9218), (132, 9221), (135, 9260), (138, 9278), (147, 9350), (153, 9416), (154, 9425), (163, 9497), (166, 9530), (168, 9536), (171, 9566), (173, 9581), (182, 9719), (186, 9734), (192, 9755), (193, 9758),

Gene: Sixama_72 Start: 30011, Stop: 31756, Start Num: 14

Candidate Starts for Sixama_72:

(Start: 14 @30011 has 5 MA's), (Start: 16 @30017 has 1 MA's), (17, 30020), (32, 30098), (49, 30251), (56, 30299), (79, 30497), (106, 30740), (107, 30743), (108, 30758), (109, 30770), (112, 30788), (113, 30815), (116, 30836), (117, 30848), (141, 31019), (146, 31058), (150, 31109), (153, 31133), (161, 31208), (162, 31211), (165, 31235), (197, 31505), (207, 31574), (220, 31685), (236, 31733),

Gene: Smarties_28 Start: 10100, Stop: 11824, Start Num: 8

Candidate Starts for Smarties_28:

(Start: 8 @10100 has 37 MA's), (Start: 10 @10109 has 13 MA's), (32, 10229), (42, 10334), (43, 10346), (57, 10445), (64, 10517), (67, 10535), (97, 10715), (99, 10721), (100, 10745), (104, 10784), (108, 10847), (111, 10874), (114, 10919), (131, 11021), (132, 11024), (135, 11063), (136, 11072), (143, 11114), (147, 11153), (153, 11219), (154, 11228), (155, 11243), (158, 11267), (166, 11333), (168, 11339), (171, 11366), (182, 11519), (187, 11537), (196, 11579), (199, 11603), (201, 11624), (214, 11660), (238, 11801), (239, 11813),

Gene: Sunny_20 Start: 8465, Stop: 10132, Start Num: 10

Candidate Starts for Sunny_20:

(2, 8363), (7, 8429), (Start: 8 @8456 has 37 MA's), (Start: 10 @8465 has 13 MA's), (25, 8561), (32, 8585), (42, 8690), (43, 8702), (57, 8801), (64, 8873), (67, 8891), (75, 8966), (77, 8972), (87, 9011), (89, 9023), (92, 9038), (95, 9062), (99, 9074), (101, 9101), (103, 9128), (104, 9137), (111, 9227), (114, 9272), (131, 9374), (132, 9377), (136, 9425), (138, 9434), (147, 9506), (153, 9572), (154, 9581), (168, 9692), (174, 9749), (187, 9893), (190, 9905), (196, 9935), (222, 10103),

Gene: Talia1610_76 Start: 33060, Stop: 34739, Start Num: 18

Candidate Starts for Talia1610_76:

(Start: 16 @33054 has 1 MA's), (Start: 18 @33060 has 1 MA's), (33, 33165), (47, 33288), (49, 33300), (65, 33423), (104, 33675), (106, 33720), (110, 33753), (124, 33876), (125, 33885), (126, 33897), (131,

33933), (153, 34131), (160, 34200), (194, 34485), (204, 34551), (206, 34557), (230, 34683), (233, 34692), (240, 34728),

Gene: Teamocil_20 Start: 7583, Stop: 9301, Start Num: 8

Candidate Starts for Teamocil_20:

(Start: 8 @7583 has 37 MA's), (Start: 10 @7592 has 13 MA's), (32, 7712), (42, 7817), (43, 7829), (57, 7928), (60, 7946), (64, 8000), (67, 8018), (72, 8069), (75, 8093), (84, 8123), (89, 8153), (91, 8159), (92, 8168), (99, 8204), (104, 8267), (108, 8330), (111, 8357), (114, 8402), (131, 8504), (132, 8507), (136, 8555), (138, 8564), (143, 8597), (147, 8636), (153, 8702), (154, 8711), (155, 8726), (156, 8735), (158, 8750), (159, 8762), (163, 8783), (166, 8816), (168, 8822), (171, 8852), (177, 8897), (182, 9005), (189, 9029), (196, 9065), (197, 9068), (199, 9089), (201, 9110), (223, 9245), (231, 9257), (237, 9284),

Gene: Terij_13 Start: 6017, Stop: 7762, Start Num: 10

Candidate Starts for Terij_13:

(Start: 8 @6008 has 37 MA's), (Start: 10 @6017 has 13 MA's), (23, 6098), (27, 6119), (34, 6155), (36, 6170), (42, 6233), (43, 6245), (44, 6254), (57, 6344), (73, 6488), (81, 6539), (87, 6584), (88, 6593), (95, 6632), (101, 6668), (102, 6689), (103, 6695), (104, 6704), (108, 6767), (111, 6794), (131, 6941), (135, 6983), (136, 6992), (138, 7001), (140, 7016), (143, 7034), (147, 7073), (153, 7139), (154, 7148), (156, 7172), (157, 7184), (158, 7187), (168, 7259), (173, 7310), (175, 7325), (181, 7388), (187, 7469), (192, 7487), (201, 7556), (202, 7559), (211, 7604),

Gene: Tyrumbra_18 Start: 7432, Stop: 9117, Start Num: 10

Candidate Starts for Tyrumbra_18:

(Start: 8 @7423 has 37 MA's), (Start: 10 @7432 has 13 MA's), (32, 7555), (42, 7660), (43, 7672), (57, 7771), (64, 7843), (67, 7861), (84, 7966), (87, 7984), (89, 7996), (91, 8002), (92, 8011), (99, 8047), (104, 8110), (108, 8173), (111, 8200), (114, 8245), (116, 8254), (123, 8296), (131, 8347), (132, 8350), (135, 8389), (136, 8398), (138, 8407), (143, 8440), (147, 8479), (153, 8545), (154, 8554), (155, 8569), (158, 8593), (166, 8659), (168, 8665), (171, 8692), (182, 8845), (193, 8884), (196, 8905), (201, 8950), (214, 8986), (215, 8992), (231, 9097),

Gene: Yeti_20 Start: 8441, Stop: 10147, Start Num: 8

Candidate Starts for Yeti_20:

(Start: 8 @8441 has 37 MA's), (Start: 10 @8450 has 13 MA's), (12, 8465), (30, 8564), (32, 8570), (42, 8675), (43, 8687), (57, 8786), (58, 8792), (64, 8858), (67, 8876), (73, 8930), (78, 8960), (87, 8999), (91, 9017), (92, 9026), (99, 9062), (104, 9125), (108, 9188), (111, 9215), (114, 9260), (131, 9362), (132, 9365), (135, 9404), (138, 9422), (147, 9494), (153, 9560), (154, 9569), (158, 9608), (163, 9641), (166, 9674), (168, 9680), (171, 9710), (182, 9863), (186, 9878), (192, 9899), (193, 9902), (227, 10106), (231, 10115),

Gene: Zooman_67 Start: 27800, Stop: 29527, Start Num: 19

Candidate Starts for Zooman_67:

(3, 27662), (4, 27668), (5, 27671), (Start: 19 @27800 has 6 MA's), (26, 27854), (32, 27878), (37, 27929), (48, 28037), (52, 28061), (63, 28151), (65, 28163), (70, 28217), (103, 28424), (106, 28478), (131, 28694), (143, 28787), (146, 28817), (154, 28901), (160, 28961), (165, 28994), (167, 29009), (186, 29213), (187, 29216), (188, 29219), (198, 29270), (221, 29441),