

# Zoomed Pham 214321

1: Ohgeesy_17	8 9	13,1	23	33	43	53	63	73	83	93	104	114	124	134	144	154	164	173	183	192	198
2: Bunnybear_16	1 8	13,1	23	33	43	53	63	73	83	93	104	114	124	134	144	154	164	173	183	192	198
3: Hyzer_17	1 8	13,1	23	33	43	53	63	73	81	93	104	114	124	134	144	150	158	161	165	173	183
4: Antonio_17 + 10	1 8	13,1	23	33	43	53	63	73	79	83	93	104	114	124	134	144	154	165	173	183	192
5: Bosnia_17 + 4	1 8	13,1	23	33	43	53	63	73	79	83	93	104	114	124	134	144	154	165	173	183	192
6: Hugley_17 + 1	1 8	13,1	23	33	43	53	63	73	79	83	93	104	114	124	134	144	154	165	173	183	192
7: Bialota_17 + 1	1 8	13,1	23	33	43	53	63	73	71	81	93	104	114	124	134	144	150	156	160	166	173
8: WelcomeAyanna_16 + 1	1 8	13,1	23	33	43	53	63	73	79	83	93	104	114	124	130	139	144	154	164	173	183
9: Agueybana_17	8 9	13,1	23	33	43	53	63	73	79	83	93	104	114	124	134	144	154	164	173	183	192
10: Madeline_17	1 8	13,1	23	33	43	53	63	73	79	83	93	104	114	124	134	144	154	164	173	183	192
11: AlumE_17 + 1	1 8	13,1	23	33	43	53	63	73	79	83	93	104	114	124	134	144	154	164	173	183	192
12: PantheRoc_17	1 8	13,1	23	33	43	53	63	73	79	83	93	104	114	124	134	144	154	164	173	183	192
13: BaxterFox_16	1 8	13,1	23	33	43	53	63	73	79	83	93	104	114	124	134	144	154	164	173	183	192
14: Yeezy_18	1 8	17,10	23	33	43	53	63	73	78	84	88	93	104	114	124	131	143	147	149	156	161
15: PhriskyACE_17 + 1	1 8	13,1	23	33	43	53	63	73	78	84	88	93	104	114	124	128	143	149	156	161	165
16: Samman98_18 + 2	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
17: Beenie_18	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
18: Sekhmet_18 + 1	1 8	13,1	20	33	43	53	63	73	78	84	88	93	104	114	124	131	143	147	149	156	161
19: Clark_18 + 1	1 8	13,1	20	33	43	53	63	73	78	84	88	93	104	114	124	128	143	149	156	161	165
20: Thimann_18	1 8	13,1	20	33	43	53	63	73	78	84	88	93	104	114	124	128	143	149	156	161	165
21: DobbysSock_17	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
22: Mcklovin_18	1 8	13,1	20	33	43	53	63	73	78	84	88	93	104	114	124	128	143	149	156	161	165
23: Suerte_16	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
24: Howe_18 + 1	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
25: Oregano_18	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
26: Invectra_19	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
27: Adora_18	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
28: Twinkle_18	1 8	13,1	20	33	43	53	63	73	78	84	88	93	104	114	124	128	143	149	156	161	165
29: Easley_18	8 9	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166
30: Hortense_18	1 8	13,1	20	33	43	53	63	73	81	84	88	93	104	114	124	134	147	149	161	165	173
31: Powerball_17	1 8	13,1	20	33	43	53	63	73	81	84	88	93	104	114	124	134	147	149	161	165	173
32: Sidious_17	51	52	158	21	38	45	53	55	63	69	75	80	88	106	110	115	123	135	138	141	146
33: Finkle_17	10	14	21	26	34	52	58	72	82	99	103	110	117	123	126	140	145	152	153	156	161
34: GMA1_17	1 8	13,1	20	33	43	53	63	73	84	88	91	102	112	120	125	129	134	143	148	151	166

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 214321 Report

This analysis was run 02/22/25 on database version 588.

Pham number 214321 has 58 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Ohgeesy\_17
- Track 2 : Bunnybear\_16
- Track 3 : Hyzer\_17
- Track 4 : Antonio\_17, Tayonia\_17, Neobush\_17, Kita\_17, Manasvini\_17, Zameen\_17, Suscepit\_17, Polly\_17, Maridalia\_16, Eudoria\_17, Trumpet\_17
- Track 5 : Bosnia\_17, Eviarto\_17, TimTam\_17, BatStarr\_17, Nymphadora\_17
- Track 6 : Hugley\_17, Herod\_17
- Track 7 : Bialota\_17, Zirinka\_17
- Track 8 : WelcomeAyanna\_16, ThankyouJordi\_16
- Track 9 : Agueybana\_17
- Track 10 : Madeline\_17
- Track 11 : AlumE\_17, BoyNamedSue\_17
- Track 12 : PantheRoc\_17
- Track 13 : BaxterFox\_16
- Track 14 : Yeezy\_18
- Track 15 : PhriskyACE\_17, Dorito\_17
- Track 16 : Samman98\_18, WinkNick\_18, Dolores\_18
- Track 17 : Beenie\_18
- Track 18 : Sekhmet\_18, MichaelScott\_18
- Track 19 : Clark\_18, Annalisa\_18
- Track 20 : Thimann\_18
- Track 21 : DobbysSock\_17
- Track 22 : Mcklovin\_18
- Track 23 : Suerte\_16
- Track 24 : Howe\_18, Shlim410\_18
- Track 25 : Oregano\_18
- Track 26 : Invectra\_19
- Track 27 : Adora\_18
- Track 28 : Twinkle\_18
- Track 29 : Easley\_18
- Track 30 : Hortense\_18
- Track 31 : Powerball\_17
- Track 32 : Sidious\_17
- Track 33 : Finkle\_17
- Track 34 : GMA1\_17

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

The start number called the most often in the published annotations is 7, it was called in 46 of the 53 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agueybana\_17, AlumE\_17, Annalisa\_18, Antonio\_17, BatStarr\_17, BaxterFox\_16, Bialota\_17, Bosnia\_17, BoyNamedSue\_17, Bunnybear\_16, Clark\_18, DobbysSock\_17, Dolores\_18, Dorito\_17, Easley\_18, Eudoria\_17, Eviarto\_17, Finkle\_17, Herod\_17, Hortense\_18, Hugley\_17, Hyzer\_17, Invecetra\_19, Kita\_17, Madeline\_17, Manasvini\_17, Maridalia\_16, Mcklovin\_18, MichaelScott\_18, Neobush\_17, Nymphadora\_17, Ohgeesy\_17, PantheRoc\_17, PhriskyACE\_17, Polly\_17, Powerball\_17, Samman98\_18, Sekhmet\_18, Sidious\_17, Suerte\_16, Suscepit\_17, Tayonia\_17, ThankyouJordi\_16, Thimann\_18, TimTam\_17, Trumpet\_17, WelcomeAyanna\_16, WinkNick\_18, Zameen\_17, Zirinka\_17,

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

- Adora\_18, Beenie\_18, Howe\_18, Oregano\_18, Shlim410\_18, Twinkle\_18, Yeezy\_18,

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

- GMA1\_17,

### **Summary by start number:**

Start 6:

- Found in 13 of 58 ( 22.4% ) of genes in pham
- Manual Annotations of this start: 5 of 53
- Called 38.5% of time when present
- Phage (with cluster) where this start called: Adora\_18 (CZ4), Howe\_18 (CZ4), Oregano\_18 (CZ4), Shlim410\_18 (CZ4), Twinkle\_18 (CZ4),

Start 7:

- Found in 57 of 58 ( 98.3% ) of genes in pham
- Manual Annotations of this start: 46 of 53
- Called 87.7% of time when present
- Phage (with cluster) where this start called: Agueybana\_17 (CZ1), AlumE\_17 (CZ1), Annalisa\_18 (CZ4), Antonio\_17 (CZ1), BatStarr\_17 (CZ1), BaxterFox\_16 (CZ3), Bialota\_17 (CZ1), Bosnia\_17 (CZ1), BoyNamedSue\_17 (CZ1), Bunnybear\_16 (CZ), Clark\_18 (CZ4), DobbysSock\_17 (CZ4), Dolores\_18 (CZ4), Dorito\_17 (CZ4), Easley\_18 (CZ4), Eudoria\_17 (CZ1), Eviarto\_17 (CZ1), Finkle\_17 (singleton), Herod\_17 (CZ1), Hortense\_18 (CZ4), Hugley\_17 (CZ1), Hyzer\_17 (CZ1), Invecetra\_19 (CZ4), Kita\_17 (CZ1), Madeline\_17 (CZ1), Manasvini\_17 (CZ1), Maridalia\_16 (CZ1), Mcklovin\_18 (CZ4), MichaelScott\_18 (CZ4), Neobush\_17 (CZ1), Nymphadora\_17 (CZ1), Ohgeesy\_17 (CZ), PantheRoc\_17 (CZ3), PhriskyACE\_17 (CZ4), Polly\_17 (CZ1), Powerball\_17 (CZ4), Samman98\_18 (CZ4), Sekhmet\_18 (CZ4), Sidious\_17 (CZ7), Suerte\_16 (CZ4), Suscepit\_17 (CZ1), Tayonia\_17 (CZ1), ThankyouJordi\_16 (CZ1), Thimann\_18 (CZ4), TimTam\_17 (CZ1), Trumpet\_17 (CZ1), WelcomeAyanna\_16 (CZ1), WinkNick\_18 (CZ4), Zameen\_17 (CZ1), Zirinka\_17 (CZ1),

Start 10:

- Found in 1 of 58 ( 1.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA1\_17 (singleton),

Start 13:

- Found in 54 of 58 ( 93.1% ) of genes in pham
- Manual Annotations of this start: 1 of 53
- Called 1.9% of time when present
- Phage (with cluster) where this start called: Yeezy\_18 (CZ3),

Start 25:

- Found in 41 of 58 ( 70.7% ) of genes in pham
- Manual Annotations of this start: 1 of 53
- Called 2.4% of time when present
- Phage (with cluster) where this start called: Beenie\_18 (CZ4),

### **Summary by clusters:**

There are 6 clusters represented in this pham: singleton, CZ3, CZ1, CZ7, CZ4, CZ,

Info for manual annotations of cluster CZ:

- Start number 7 was manually annotated 2 times for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 7 was manually annotated 25 times for cluster CZ1.

Info for manual annotations of cluster CZ3:

- Start number 7 was manually annotated 2 times for cluster CZ3.
- Start number 13 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 6 was manually annotated 5 times for cluster CZ4.
- Start number 7 was manually annotated 15 times for cluster CZ4.
- Start number 25 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster CZ7:

- Start number 7 was manually annotated 1 time for cluster CZ7.

### **Gene Information:**

Gene: Adora\_18 Start: 10473, Stop: 17021, Start Num: 6

Candidate Starts for Adora\_18:

(Start: 6 @10473 has 5 MA's), (Start: 7 @10485 has 46 MA's), (9, 10524), (Start: 13 @10581 has 1 MA's), (17, 10623), (20, 10683), (23, 10743), (Start: 25 @10761 has 1 MA's), (32, 10887), (37, 10926), (39, 10947), (40, 10956), (42, 10968), (43, 10980), (46, 11025), (48, 11052), (54, 11127), (58, 11190), (59, 11211), (64, 11304), (65, 11340), (67, 11376), (69, 11394), (70, 11403), (73, 11436), (74, 11469), (77, 11538), (79, 11568), (80, 11583), (84, 11640), (86, 11691), (87, 11706), (91, 11739), (100, 11844), (102, 11853), (104, 11874), (108, 11910), (109, 11916), (113, 11958), (116, 12000), (120, 12060), (125, 12207), (127, 12246), (129, 12273), (134, 12366), (142, 12504), (143, 12510), (144, 12546), (145, 12558), (148, 12630), (151, 12729), (166, 13023), (169, 13065), (172, 13098), (173, 13104),

(182, 13188), (184, 13215), (192, 13302), (194, 13347), (195, 13353), (202, 13509), (204, 13539), (205, 13542), (207, 13557), (210, 13581), (212, 13659), (213, 13689), (214, 13698), (220, 13746), (223, 13773), (226, 13836), (230, 13905), (236, 13953), (238, 13971), (240, 13998), (241, 14004), (244, 14049), (245, 14061), (246, 14070), (248, 14106), (253, 14205), (255, 14250), (256, 14262), (258, 14289), (259, 14325), (262, 14355), (266, 14415), (268, 14457), (269, 14466), (270, 14475), (272, 14502), (273, 14535), (276, 14601), (277, 14613), (280, 14691), (282, 14724), (305, 14886), (306, 14895), (308, 14919), (309, 14925), (314, 14964), (315, 15021), (317, 15048), (319, 15069), (320, 15081), (322, 15093), (324, 15129), (326, 15159), (327, 15177), (330, 15237), (334, 15282), (335, 15291), (344, 15411), (348, 15465), (352, 15531), (360, 15627), (362, 15681), (363, 15690), (366, 15717), (370, 15756), (371, 15768), (373, 15804), (378, 15930), (383, 16005), (396, 16227), (397, 16236), (400, 16314), (404, 16494), (411, 16584), (413, 16698), (415, 16755), (416, 16764), (417, 16785), (420, 16821), (424, 16956), (425, 16962), (426, 17004), (427, 17010), (428, 17016),

Gene: Agueybana\_17 Start: 10513, Stop: 16953, Start Num: 7

Candidate Starts for Agueybana\_17:

(Start: 7 @10513 has 46 MA's), (Start: 13 @10609 has 1 MA's), (17, 10651), (23, 10771), (24, 10777), (29, 10861), (30, 10873), (41, 11029), (43, 11050), (46, 11095), (51, 11155), (52, 11161), (57, 11254), (60, 11299), (62, 11326), (63, 11359), (71, 11482), (72, 11485), (77, 11605), (79, 11635), (87, 11764), (90, 11785), (93, 11797), (95, 11815), (104, 11860), (111, 11902), (112, 11911), (113, 11923), (114, 11944), (115, 11950), (116, 11953), (117, 11977), (119, 11986), (124, 12157), (130, 12208), (139, 12373), (143, 12415), (144, 12451), (145, 12463), (156, 12769), (160, 12832), (161, 12850), (165, 12925), (173, 13009), (179, 13066), (183, 13108), (184, 13120), (188, 13153), (192, 13207), (198, 13318), (202, 13414), (204, 13444), (205, 13447), (207, 13462), (210, 13486), (213, 13597), (214, 13606), (223, 13681), (226, 13744), (229, 13798), (230, 13813), (234, 13855), (238, 13879), (241, 13912), (244, 13957), (248, 14014), (252, 14089), (253, 14113), (255, 14158), (258, 14197), (260, 14236), (262, 14263), (266, 14323), (269, 14374), (272, 14410), (273, 14443), (275, 14467), (276, 14509), (277, 14521), (279, 14545), (280, 14599), (282, 14632), (304, 14782), (305, 14794), (306, 14803), (308, 14827), (309, 14833), (313, 14863), (314, 14875), (315, 14932), (316, 14944), (317, 14959), (318, 14968), (319, 14980), (320, 14992), (322, 15004), (324, 15040), (326, 15073), (327, 15091), (330, 15151), (334, 15196), (344, 15325), (348, 15379), (352, 15445), (354, 15454), (356, 15511), (361, 15547), (363, 15601), (368, 15646), (374, 15778), (378, 15847), (397, 16168), (398, 16189), (400, 16246), (401, 16261), (402, 16336), (404, 16426), (406, 16444), (407, 16459), (408, 16471), (409, 16483), (411, 16516), (412, 16540), (413, 16630), (415, 16687), (416, 16696), (417, 16717), (421, 16810), (423, 16882), (425, 16894), (426, 16936), (427, 16942),

Gene: AlumE\_17 Start: 10512, Stop: 16952, Start Num: 7

Candidate Starts for AlumE\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (267, 14325), (269, 14373), (271, 14400), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (354, 15453), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15777),

(378, 15846), (397, 16167), (398, 16188), (400, 16245), (401, 16260), (404, 16425), (406, 16443), (407, 16458), (408, 16470), (409, 16482), (411, 16515), (413, 16629), (414, 16668), (415, 16686), (416, 16695), (417, 16716), (421, 16809), (423, 16881), (425, 16893), (426, 16935), (427, 16941),

Gene: Annalisa\_18 Start: 10090, Stop: 16512, Start Num: 7

Candidate Starts for Annalisa\_18:

(Start: 7 @10090 has 46 MA's), (Start: 13 @10186 has 1 MA's), (17, 10228), (19, 10282), (24, 10354), (Start: 25 @10366 has 1 MA's), (39, 10594), (43, 10627), (46, 10672), (51, 10732), (52, 10738), (57, 10831), (60, 10876), (61, 10897), (62, 10903), (63, 10936), (64, 10951), (71, 11059), (72, 11062), (76, 11179), (77, 11182), (78, 11209), (84, 11275), (88, 11347), (93, 11374), (95, 11392), (104, 11437), (114, 11521), (115, 11527), (116, 11530), (117, 11554), (124, 11734), (131, 11821), (142, 11986), (143, 11992), (144, 12028), (145, 12040), (147, 12103), (149, 12181), (156, 12346), (161, 12427), (165, 12502), (169, 12547), (172, 12580), (173, 12586), (175, 12619), (184, 12697), (192, 12784), (194, 12829), (195, 12835), (202, 12991), (204, 13021), (205, 13024), (207, 13039), (210, 13063), (211, 13105), (212, 13141), (214, 13180), (220, 13228), (223, 13255), (226, 13318), (230, 13387), (234, 13429), (236, 13435), (238, 13453), (240, 13480), (241, 13486), (244, 13531), (245, 13543), (246, 13552), (247, 13576), (248, 13588), (252, 13663), (253, 13687), (255, 13732), (258, 13771), (259, 13807), (262, 13837), (265, 13870), (266, 13897), (268, 13939), (269, 13948), (272, 13984), (273, 14017), (276, 14083), (277, 14095), (280, 14173), (282, 14206), (304, 14356), (305, 14368), (306, 14377), (308, 14401), (309, 14407), (314, 14446), (315, 14503), (319, 14551), (320, 14563), (322, 14575), (324, 14611), (326, 14641), (327, 14659), (330, 14719), (331, 14722), (334, 14764), (344, 14893), (348, 14947), (352, 15013), (360, 15109), (361, 15115), (362, 15172), (363, 15181), (366, 15208), (367, 15223), (371, 15259), (373, 15295), (376, 15367), (378, 15421), (386, 15514), (388, 15526), (392, 15574), (396, 15718), (400, 15805), (404, 15985), (411, 16075), (413, 16189), (415, 16246), (416, 16255), (417, 16276), (420, 16312), (424, 16447), (425, 16453), (426, 16495), (427, 16501), (428, 16507),

Gene: Antonio\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Antonio\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: BatStarr\_17 Start: 10512, Stop: 16940, Start Num: 7

Candidate Starts for BatStarr\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (276, 14508), (277, 14520), (279, 14544), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (327, 15087), (340, 15252), (343, 15321), (346, 15333), (347, 15336), (352, 15444), (354, 15453), (356, 15510), (361, 15546), (369, 15651), (371, 15672), (378, 15834), (379, 15837), (397, 16155), (398, 16176), (399, 16194), (400, 16233), (402, 16323), (404, 16413), (406, 16431), (407, 16446), (408, 16458), (411, 16503), (413, 16617), (415, 16674), (416, 16683), (417, 16704), (418, 16707), (420, 16740), (421, 16797), (422, 16839), (423, 16869), (425, 16881), (426, 16923), (427, 16929),

Gene: BaxterFox\_16 Start: 9860, Stop: 16279, Start Num: 7

Candidate Starts for BaxterFox\_16:

(Start: 7 @9860 has 46 MA's), (Start: 13 @9956 has 1 MA's), (17, 9998), (23, 10118), (Start: 25 @10136 has 1 MA's), (28, 10187), (29, 10208), (30, 10220), (41, 10376), (43, 10397), (46, 10442), (51, 10502), (52, 10508), (57, 10601), (60, 10646), (62, 10673), (63, 10706), (71, 10829), (72, 10832), (77, 10952), (79, 10982), (87, 11111), (90, 11132), (93, 11144), (104, 11207), (111, 11249), (113, 11270), (114, 11291), (115, 11297), (116, 11300), (117, 11324), (119, 11333), (124, 11504), (139, 11720), (142, 11756), (143, 11762), (144, 11798), (145, 11810), (156, 12116), (160, 12179), (161, 12197), (165, 12272), (173, 12356), (179, 12413), (183, 12455), (184, 12467), (188, 12500), (192, 12554), (198, 12665), (202, 12761), (204, 12791), (205, 12794), (207, 12809), (210, 12833), (213, 12944), (214, 12953), (223, 13028), (226, 13091), (229, 13145), (230, 13160), (234, 13202), (238, 13226), (241, 13259), (244, 13304), (248, 13361), (252, 13436), (253, 13460), (255, 13505), (258, 13544), (260, 13583), (262, 13610), (266, 13670), (269, 13721), (272, 13757), (273, 13790), (275, 13814), (276, 13856), (277, 13868), (279, 13892), (280, 13946), (282, 13979), (304, 14129), (305, 14141), (306, 14150), (307, 14171), (308, 14174), (309, 14180), (313, 14210), (314, 14222), (315, 14279), (316, 14291), (317, 14306), (318, 14315), (319, 14327), (320, 14339), (322, 14351), (324, 14387), (326, 14420), (327, 14438), (330, 14498), (334, 14543), (337, 14561), (344, 14672), (348, 14726), (352, 14792), (356, 14858), (361, 14894), (365, 14966), (367, 14984), (369, 14996), (371, 15017), (373, 15053), (378, 15179), (379, 15182), (397, 15494), (398, 15515), (399, 15533), (400, 15572), (402, 15662), (404, 15752), (406, 15770), (407, 15785), (408, 15797), (411, 15842), (413, 15956), (415, 16013), (416, 16022), (417, 16043), (418, 16046), (420, 16079), (421, 16136), (422, 16178), (423, 16208), (425, 16220), (426, 16262), (427, 16268),

Gene: Beenie\_18 Start: 10603, Stop: 16863, Start Num: 25

Candidate Starts for Beenie\_18:

(Start: 6 @10315 has 5 MA's), (Start: 7 @10327 has 46 MA's), (9, 10366), (Start: 13 @10423 has 1 MA's), (17, 10465), (20, 10525), (23, 10585), (Start: 25 @10603 has 1 MA's), (32, 10729), (37, 10768), (39, 10789), (40, 10798), (42, 10810), (43, 10822), (46, 10867), (48, 10894), (54, 10969), (58, 11032), (59, 11053), (64, 11146), (65, 11182), (67, 11218), (69, 11236), (70, 11245), (73, 11278), (74, 11311), (77, 11380), (79, 11410), (80, 11425), (84, 11482), (86, 11533), (87, 11548), (91, 11581), (100, 11686), (102, 11695), (104, 11716), (108, 11752), (109, 11758), (113, 11800), (116, 11842), (120, 11902), (125, 12049), (127, 12088), (129, 12115), (134, 12208), (142, 12346), (143, 12352), (144, 12388), (145, 12400), (148, 12472), (151, 12571), (166, 12865), (169, 12907), (172, 12940), (173, 12946),

(182, 13030), (184, 13057), (192, 13144), (194, 13189), (195, 13195), (202, 13351), (204, 13381), (205, 13384), (207, 13399), (210, 13423), (212, 13501), (213, 13531), (214, 13540), (220, 13588), (223, 13615), (226, 13678), (230, 13747), (236, 13795), (238, 13813), (240, 13840), (241, 13846), (244, 13891), (245, 13903), (246, 13912), (248, 13948), (253, 14047), (255, 14092), (256, 14104), (258, 14131), (259, 14167), (262, 14197), (266, 14257), (268, 14299), (269, 14308), (270, 14317), (272, 14344), (273, 14377), (276, 14443), (277, 14455), (280, 14533), (282, 14566), (305, 14728), (306, 14737), (308, 14761), (309, 14767), (314, 14806), (315, 14863), (317, 14890), (319, 14911), (320, 14923), (322, 14935), (324, 14971), (326, 15001), (327, 15019), (330, 15079), (334, 15124), (335, 15133), (344, 15253), (348, 15307), (352, 15373), (360, 15469), (362, 15523), (363, 15532), (366, 15559), (371, 15610), (373, 15646), (376, 15718), (378, 15772), (383, 15847), (396, 16069), (397, 16078), (400, 16156), (404, 16336), (411, 16426), (413, 16540), (415, 16597), (416, 16606), (417, 16627), (420, 16663), (422, 16762), (424, 16798), (425, 16804), (426, 16846), (427, 16852), (428, 16858),

Gene: Bialota\_17 Start: 10512, Stop: 16952, Start Num: 7

Candidate Starts for Bialota\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (216, 13611), (217, 13644), (223, 13680), (226, 13743), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (250, 14079), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (279, 14544), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (354, 15453), (356, 15510), (361, 15546), (363, 15600), (368, 15645), (374, 15777), (378, 15846), (397, 16167), (398, 16188), (399, 16206), (400, 16245), (401, 16260), (404, 16425), (406, 16443), (407, 16458), (408, 16470), (409, 16482), (411, 16515), (412, 16539), (413, 16629), (415, 16686), (416, 16695), (417, 16716), (421, 16809), (423, 16881), (425, 16893), (426, 16935), (427, 16941),

Gene: Bosnia\_17 Start: 10512, Stop: 16940, Start Num: 7

Candidate Starts for Bosnia\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (276, 14508), (277, 14520), (279, 14544), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (327, 15087), (340, 15252),



(343, 15321), (346, 15333), (347, 15336), (352, 15444), (354, 15453), (356, 15510), (361, 15546),  
(369, 15651), (371, 15672), (378, 15834), (379, 15837), (397, 16155), (398, 16176), (399, 16194),  
(400, 16233), (402, 16323), (404, 16413), (406, 16431), (407, 16446), (408, 16458), (411, 16503),  
(413, 16617), (415, 16674), (416, 16683), (417, 16704), (418, 16707), (420, 16740), (421, 16797),  
(422, 16839), (423, 16869), (425, 16881), (426, 16923), (427, 16929),

Gene: BoyNamedSue\_17 Start: 10512, Stop: 16952, Start Num: 7

Candidate Starts for BoyNamedSue\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (267, 14325), (269, 14373), (271, 14400), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (354, 15453), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15777), (378, 15846), (397, 16167), (398, 16188), (400, 16245), (401, 16260), (404, 16425), (406, 16443), (407, 16458), (408, 16470), (409, 16482), (411, 16515), (413, 16629), (414, 16668), (415, 16686), (416, 16695), (417, 16716), (421, 16809), (423, 16881), (425, 16893), (426, 16935), (427, 16941),

Gene: Bunnybear\_16 Start: 10529, Stop: 16957, Start Num: 7

Candidate Starts for Bunnybear\_16:

(Start: 7 @10529 has 46 MA's), (Start: 13 @10625 has 1 MA's), (17, 10667), (23, 10787), (Start: 25 @10805 has 1 MA's), (29, 10877), (30, 10889), (31, 10895), (33, 10964), (36, 11006), (43, 11066), (46, 11111), (51, 11171), (52, 11177), (57, 11270), (60, 11315), (62, 11342), (63, 11375), (71, 11498), (72, 11501), (77, 11621), (83, 11708), (87, 11780), (90, 11801), (93, 11813), (104, 11876), (111, 11918), (113, 11939), (114, 11960), (115, 11966), (116, 11969), (117, 11993), (124, 12173), (139, 12389), (142, 12425), (143, 12431), (144, 12467), (145, 12479), (156, 12785), (160, 12848), (161, 12866), (165, 12941), (173, 13025), (179, 13082), (183, 13124), (184, 13136), (188, 13169), (189, 13172), (192, 13223), (198, 13334), (202, 13430), (204, 13460), (205, 13463), (210, 13502), (213, 13613), (214, 13622), (223, 13697), (226, 13760), (229, 13814), (230, 13829), (234, 13871), (238, 13895), (239, 13913), (241, 13928), (244, 13973), (247, 14018), (248, 14030), (252, 14105), (253, 14129), (255, 14174), (258, 14213), (260, 14252), (262, 14279), (266, 14339), (269, 14390), (272, 14426), (273, 14459), (276, 14525), (279, 14561), (280, 14615), (282, 14648), (304, 14798), (305, 14810), (306, 14819), (308, 14843), (309, 14849), (313, 14879), (314, 14891), (315, 14948), (316, 14960), (317, 14975), (319, 14996), (320, 15008), (322, 15020), (324, 15056), (327, 15107), (330, 15167), (334, 15212), (344, 15341), (348, 15395), (352, 15461), (356, 15527), (367, 15656), (371, 15689), (373, 15725), (378, 15851), (379, 15854), (399, 16205), (400, 16244), (404, 16430), (407, 16463), (408, 16475), (410, 16505), (411, 16520), (413, 16634), (416, 16700), (417, 16721), (421, 16814), (423, 16886), (425, 16898), (426, 16940), (427, 16946),

Gene: Clark\_18 Start: 10090, Stop: 16512, Start Num: 7

Candidate Starts for Clark\_18:

(Start: 7 @10090 has 46 MA's), (Start: 13 @10186 has 1 MA's), (17, 10228), (19, 10282), (24, 10354), (Start: 25 @10366 has 1 MA's), (39, 10594), (43, 10627), (46, 10672), (51, 10732), (52, 10738), (57,

10831), (60, 10876), (61, 10897), (62, 10903), (63, 10936), (64, 10951), (71, 11059), (72, 11062), (76, 11179), (77, 11182), (78, 11209), (84, 11275), (88, 11347), (93, 11374), (95, 11392), (104, 11437), (114, 11521), (115, 11527), (116, 11530), (117, 11554), (124, 11734), (131, 11821), (142, 11986), (143, 11992), (144, 12028), (145, 12040), (147, 12103), (149, 12181), (156, 12346), (161, 12427), (165, 12502), (169, 12547), (172, 12580), (173, 12586), (175, 12619), (184, 12697), (192, 12784), (194, 12829), (195, 12835), (202, 12991), (204, 13021), (205, 13024), (207, 13039), (210, 13063), (211, 13105), (212, 13141), (214, 13180), (220, 13228), (223, 13255), (226, 13318), (230, 13387), (234, 13429), (236, 13435), (238, 13453), (240, 13480), (241, 13486), (244, 13531), (245, 13543), (246, 13552), (247, 13576), (248, 13588), (252, 13663), (253, 13687), (255, 13732), (258, 13771), (259, 13807), (262, 13837), (265, 13870), (266, 13897), (268, 13939), (269, 13948), (272, 13984), (273, 14017), (276, 14083), (277, 14095), (280, 14173), (282, 14206), (304, 14356), (305, 14368), (306, 14377), (308, 14401), (309, 14407), (314, 14446), (315, 14503), (319, 14551), (320, 14563), (322, 14575), (324, 14611), (326, 14641), (327, 14659), (330, 14719), (331, 14722), (334, 14764), (344, 14893), (348, 14947), (352, 15013), (360, 15109), (361, 15115), (362, 15172), (363, 15181), (366, 15208), (367, 15223), (371, 15259), (373, 15295), (376, 15367), (378, 15421), (386, 15514), (388, 15526), (392, 15574), (396, 15718), (400, 15805), (404, 15985), (411, 16075), (413, 16189), (415, 16246), (416, 16255), (417, 16276), (420, 16312), (424, 16447), (425, 16453), (426, 16495), (427, 16501), (428, 16507),

Gene: DobbysSock\_17 Start: 9573, Stop: 15986, Start Num: 7

Candidate Starts for DobbysSock\_17:

(Start: 7 @9573 has 46 MA's), (Start: 13 @9669 has 1 MA's), (17, 9711), (24, 9837), (Start: 25 @9849 has 1 MA's), (39, 10077), (43, 10110), (46, 10155), (51, 10215), (52, 10221), (57, 10314), (60, 10359), (61, 10380), (62, 10386), (63, 10419), (64, 10434), (71, 10542), (72, 10545), (76, 10662), (77, 10665), (84, 10758), (88, 10830), (93, 10857), (95, 10875), (104, 10920), (114, 11004), (115, 11010), (116, 11013), (117, 11037), (124, 11217), (128, 11250), (142, 11469), (143, 11475), (144, 11511), (145, 11523), (156, 11829), (161, 11910), (165, 11985), (173, 12069), (182, 12153), (184, 12180), (192, 12267), (194, 12312), (195, 12318), (202, 12474), (204, 12504), (205, 12507), (207, 12522), (210, 12546), (211, 12588), (212, 12624), (213, 12654), (214, 12663), (220, 12711), (223, 12738), (226, 12801), (230, 12870), (236, 12918), (238, 12936), (240, 12963), (241, 12969), (244, 13014), (245, 13026), (246, 13035), (248, 13071), (253, 13170), (255, 13215), (256, 13227), (258, 13254), (259, 13290), (262, 13320), (266, 13380), (268, 13422), (269, 13431), (270, 13440), (272, 13467), (273, 13500), (276, 13566), (277, 13578), (280, 13656), (282, 13689), (305, 13851), (306, 13860), (308, 13884), (309, 13890), (314, 13929), (315, 13986), (317, 14013), (319, 14034), (320, 14046), (322, 14058), (324, 14094), (326, 14124), (327, 14142), (330, 14202), (334, 14247), (335, 14256), (344, 14376), (348, 14430), (352, 14496), (360, 14592), (362, 14646), (363, 14655), (366, 14682), (367, 14697), (371, 14733), (373, 14769), (376, 14841), (378, 14895), (383, 14970), (388, 15000), (396, 15192), (397, 15201), (400, 15279), (404, 15459), (411, 15549), (413, 15663), (415, 15720), (416, 15729), (417, 15750), (420, 15786), (424, 15921), (425, 15927), (426, 15969), (427, 15975), (428, 15981),

Gene: Dolores\_18 Start: 10075, Stop: 16488, Start Num: 7

Candidate Starts for Dolores\_18:

(Start: 7 @10075 has 46 MA's), (Start: 13 @10171 has 1 MA's), (17, 10213), (24, 10339), (Start: 25 @10351 has 1 MA's), (39, 10579), (43, 10612), (46, 10657), (51, 10717), (52, 10723), (57, 10816), (60, 10861), (61, 10882), (62, 10888), (63, 10921), (64, 10936), (71, 11044), (72, 11047), (76, 11164), (77, 11167), (84, 11260), (88, 11332), (93, 11359), (95, 11377), (104, 11422), (114, 11506), (115, 11512), (116, 11515), (117, 11539), (124, 11719), (128, 11752), (142, 11971), (143, 11977), (144, 12013), (145, 12025), (149, 12166), (156, 12331), (161, 12412), (165, 12487), (169, 12532), (172, 12565), (173, 12571), (175, 12604), (184, 12682), (192, 12769), (194, 12814), (195, 12820), (202, 12976), (204, 13006), (205, 13009), (207, 13024), (210, 13048), (211, 13090), (212, 13126), (213, 13156), (214, 13165), (220, 13213), (223, 13240), (226, 13303), (230, 13372), (236, 13420), (238, 13438), (240, 13465), (241, 13471), (244, 13516), (245, 13528), (246, 13537), (248, 13573), (253, 13672),

(255, 13717), (256, 13729), (258, 13756), (259, 13792), (262, 13822), (266, 13882), (268, 13924), (269, 13933), (270, 13942), (272, 13969), (273, 14002), (276, 14068), (277, 14080), (280, 14158), (282, 14191), (305, 14353), (306, 14362), (308, 14386), (309, 14392), (314, 14431), (315, 14488), (317, 14515), (319, 14536), (320, 14548), (322, 14560), (324, 14596), (326, 14626), (327, 14644), (330, 14704), (334, 14749), (335, 14758), (344, 14878), (348, 14932), (352, 14998), (360, 15094), (362, 15148), (363, 15157), (366, 15184), (371, 15235), (373, 15271), (378, 15397), (383, 15472), (388, 15502), (396, 15694), (397, 15703), (400, 15781), (404, 15961), (411, 16051), (413, 16165), (415, 16222), (416, 16231), (417, 16252), (420, 16288), (424, 16423), (425, 16429), (426, 16471), (427, 16477), (428, 16483),

Gene: Dorito\_17 Start: 9572, Stop: 15988, Start Num: 7

Candidate Starts for Dorito\_17:

(Start: 7 @9572 has 46 MA's), (17, 9710), (19, 9764), (24, 9836), (Start: 25 @9848 has 1 MA's), (39, 10076), (43, 10109), (46, 10154), (51, 10214), (52, 10220), (57, 10313), (60, 10358), (61, 10379), (62, 10385), (63, 10418), (64, 10433), (71, 10541), (72, 10544), (76, 10661), (77, 10664), (78, 10691), (84, 10757), (88, 10829), (93, 10856), (95, 10874), (104, 10919), (114, 11003), (115, 11009), (116, 11012), (117, 11036), (124, 11216), (131, 11303), (142, 11468), (143, 11474), (144, 11510), (145, 11522), (147, 11585), (149, 11663), (156, 11828), (161, 11909), (165, 11984), (169, 12029), (172, 12062), (173, 12068), (175, 12101), (184, 12179), (192, 12266), (194, 12311), (195, 12317), (204, 12503), (205, 12506), (208, 12536), (210, 12545), (212, 12626), (214, 12665), (220, 12713), (223, 12740), (226, 12803), (230, 12872), (234, 12914), (236, 12920), (238, 12938), (240, 12965), (241, 12971), (244, 13016), (245, 13028), (246, 13037), (247, 13061), (248, 13073), (253, 13172), (255, 13217), (258, 13256), (259, 13292), (262, 13322), (266, 13382), (268, 13424), (269, 13433), (272, 13469), (273, 13502), (276, 13568), (277, 13580), (280, 13658), (282, 13691), (304, 13841), (305, 13853), (306, 13862), (308, 13886), (309, 13892), (314, 13931), (315, 13988), (319, 14036), (320, 14048), (322, 14060), (324, 14096), (327, 14144), (330, 14204), (334, 14249), (344, 14378), (348, 14432), (352, 14498), (360, 14594), (361, 14600), (362, 14648), (363, 14657), (366, 14684), (371, 14735), (373, 14771), (376, 14843), (378, 14897), (382, 14945), (386, 14990), (388, 15002), (391, 15011), (392, 15050), (396, 15194), (400, 15281), (404, 15461), (411, 15551), (413, 15665), (415, 15722), (416, 15731), (417, 15752), (420, 15788), (424, 15923), (425, 15929), (426, 15971), (427, 15977), (428, 15983),

Gene: Easley\_18 Start: 10079, Stop: 16498, Start Num: 7

Candidate Starts for Easley\_18:

(Start: 7 @10079 has 46 MA's), (Start: 13 @10175 has 1 MA's), (17, 10217), (Start: 25 @10355 has 1 MA's), (39, 10583), (43, 10616), (46, 10661), (51, 10721), (52, 10727), (57, 10820), (60, 10865), (61, 10886), (62, 10892), (63, 10925), (64, 10940), (71, 11048), (72, 11051), (76, 11168), (77, 11171), (84, 11264), (88, 11336), (93, 11363), (95, 11381), (104, 11426), (114, 11510), (115, 11516), (116, 11519), (117, 11543), (124, 11723), (128, 11756), (142, 11975), (143, 11981), (144, 12017), (145, 12029), (156, 12335), (161, 12416), (165, 12491), (173, 12575), (182, 12659), (184, 12686), (192, 12773), (194, 12818), (195, 12824), (202, 12980), (204, 13010), (205, 13013), (207, 13028), (210, 13052), (211, 13094), (212, 13130), (213, 13160), (214, 13169), (220, 13217), (223, 13244), (226, 13307), (230, 13376), (236, 13424), (238, 13442), (240, 13469), (241, 13475), (244, 13520), (245, 13532), (246, 13541), (248, 13577), (253, 13676), (255, 13721), (256, 13733), (258, 13760), (259, 13796), (262, 13826), (266, 13886), (268, 13928), (269, 13937), (270, 13946), (272, 13973), (273, 14006), (276, 14072), (277, 14084), (280, 14162), (282, 14195), (305, 14357), (306, 14366), (308, 14390), (309, 14396), (314, 14435), (315, 14492), (317, 14519), (319, 14540), (320, 14552), (322, 14564), (324, 14600), (326, 14630), (327, 14648), (330, 14708), (334, 14753), (335, 14762), (341, 14849), (344, 14882), (348, 14936), (352, 15002), (360, 15098), (362, 15152), (363, 15161), (366, 15188), (371, 15239), (373, 15275), (378, 15401), (383, 15476), (388, 15506), (389, 15515), (397, 15713), (398, 15734), (399, 15752), (400, 15791), (404, 15971), (411, 16061), (413, 16175), (415, 16232), (416, 16241), (417, 16262), (420, 16298), (424, 16433), (425, 16439), (426, 16481), (427, 16487), (428, 16493),

Gene: Eudoria\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Eudoria\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Eviarto\_17 Start: 10512, Stop: 16940, Start Num: 7

Candidate Starts for Eviarto\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (276, 14508), (277, 14520), (279, 14544), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (327, 15087), (340, 15252), (343, 15321), (346, 15333), (347, 15336), (352, 15444), (354, 15453), (356, 15510), (361, 15546), (369, 15651), (371, 15672), (378, 15834), (379, 15837), (397, 16155), (398, 16176), (399, 16194), (400, 16233), (402, 16323), (404, 16413), (406, 16431), (407, 16446), (408, 16458), (411, 16503), (413, 16617), (415, 16674), (416, 16683), (417, 16704), (418, 16707), (420, 16740), (421, 16797), (422, 16839), (423, 16869), (425, 16881), (426, 16923), (427, 16929),

Gene: Finkle\_17 Start: 9925, Stop: 15438, Start Num: 7

Candidate Starts for Finkle\_17:

(1, 9220), (2, 9430), (3, 9493), (4, 9499), (5, 9901), (Start: 7 @9925 has 46 MA's), (9, 9964), (12, 9991), (15, 10042), (18, 10075), (27, 10237), (38, 10390), (45, 10480), (51, 10546), (52, 10552), (55, 10609), (62, 10717), (63, 10750), (66, 10813), (68, 10843), (71, 10873), (75, 10939), (89, 11167), (96, 11230), (97, 11242), (98, 11251), (101, 11284), (105, 11311), (110, 11344), (114, 11419), (116, 11428), (118, 11458), (119, 11461), (122, 11512), (123, 11518), (135, 11758), (137, 11803), (138,

11812), (141, 11875), (144, 11938), (145, 11950), (146, 12001), (154, 12238), (155, 12262), (157, 12289), (162, 12373), (163, 12394), (167, 12463), (173, 12505), (180, 12565), (187, 12637), (190, 12667), (197, 12790), (200, 12835), (206, 12955), (209, 12979), (221, 13156), (222, 13165), (227, 13252), (231, 13318), (236, 13363), (242, 13435), (243, 13438), (249, 13531), (251, 13591), (254, 13657), (257, 13702), (261, 13765), (263, 13789), (264, 13810), (268, 13879), (274, 13975), (280, 14119), (283, 14215), (302, 14278), (310, 14341), (312, 14353), (329, 14635), (333, 14692), (336, 14707), (345, 14818), (349, 14878), (353, 14935), (354, 14938), (357, 14998), (372, 15190), (375, 15262), (377, 15310), (380, 15355), (381, 15364), (384, 15409), (385, 15412), (387, 15427),

Gene: GMA1\_17 Start: 10196, Stop: 15121, Start Num: 10

Candidate Starts for GMA1\_17:

(10, 10196), (11, 10202), (14, 10262), (21, 10388), (26, 10451), (39, 10616), (44, 10652), (52, 10760), (54, 10796), (58, 10859), (72, 11087), (82, 11270), (90, 11372), (92, 11384), (94, 11408), (99, 11447), (103, 11465), (106, 11501), (107, 11513), (110, 11531), (114, 11606), (116, 11615), (117, 11639), (123, 11705), (126, 11825), (140, 12044), (141, 12050), (142, 12071), (144, 12113), (145, 12125), (152, 12320), (153, 12356), (154, 12401), (155, 12425), (157, 12452), (159, 12473), (173, 12668), (174, 12689), (178, 12710), (185, 12779), (187, 12800), (201, 13052), (209, 13118), (215, 13235), (218, 13271), (219, 13277), (225, 13349), (228, 13388), (231, 13439), (235, 13481), (236, 13484), (249, 13652), (251, 13709), (257, 13814), (258, 13823), (276, 14114), (303, 14378), (311, 14444), (321, 14579), (325, 14636), (328, 14696), (338, 14822), (342, 14873), (350, 14975), (351, 14993), (355, 15047), (358, 15092), (359, 15110),

Gene: Herod\_17 Start: 10512, Stop: 16940, Start Num: 7

Candidate Starts for Herod\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (276, 14508), (277, 14520), (279, 14544), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (327, 15087), (340, 15252), (343, 15321), (346, 15333), (347, 15336), (352, 15444), (354, 15453), (356, 15510), (361, 15546), (369, 15651), (371, 15672), (378, 15834), (379, 15837), (390, 15951), (397, 16155), (398, 16176), (399, 16194), (400, 16233), (402, 16323), (404, 16413), (406, 16431), (407, 16446), (408, 16458), (411, 16503), (413, 16617), (415, 16674), (416, 16683), (417, 16704), (418, 16707), (420, 16740), (421, 16797), (422, 16839), (423, 16869), (425, 16881), (426, 16923), (427, 16929),

Gene: Hortense\_18 Start: 10532, Stop: 17068, Start Num: 7

Candidate Starts for Hortense\_18:

(Start: 6 @10520 has 5 MA's), (Start: 7 @10532 has 46 MA's), (9, 10571), (Start: 13 @10628 has 1 MA's), (17, 10670), (20, 10730), (23, 10790), (Start: 25 @10808 has 1 MA's), (32, 10934), (37, 10973), (39, 10994), (40, 11003), (42, 11015), (43, 11027), (46, 11072), (48, 11099), (54, 11174), (58, 11237), (59, 11258), (64, 11351), (65, 11387), (67, 11423), (69, 11441), (70, 11450), (73, 11483), (74, 11516), (77, 11585), (79, 11615), (80, 11630), (84, 11687), (86, 11738), (87, 11753), (91, 11786), (100, 11891), (102, 11900), (104, 11921), (108, 11957), (109, 11963), (113, 12005), (116, 12047), (120, 12107), (125, 12254), (127, 12293), (129, 12320), (134, 12413), (142, 12551), (143, 12557), (144, 12593),

(145, 12605), (148, 12677), (151, 12776), (166, 13070), (169, 13112), (172, 13145), (173, 13151), (182, 13235), (184, 13262), (192, 13349), (194, 13394), (195, 13400), (202, 13556), (204, 13586), (205, 13589), (207, 13604), (210, 13628), (212, 13706), (213, 13736), (214, 13745), (220, 13793), (223, 13820), (226, 13883), (230, 13952), (236, 14000), (238, 14018), (240, 14045), (241, 14051), (244, 14096), (245, 14108), (246, 14117), (248, 14153), (253, 14252), (255, 14297), (256, 14309), (258, 14336), (259, 14372), (262, 14402), (266, 14462), (268, 14504), (269, 14513), (270, 14522), (272, 14549), (273, 14582), (276, 14648), (277, 14660), (280, 14738), (282, 14771), (305, 14933), (306, 14942), (308, 14966), (309, 14972), (314, 15011), (315, 15068), (317, 15095), (319, 15116), (320, 15128), (322, 15140), (324, 15176), (326, 15206), (327, 15224), (330, 15284), (334, 15329), (335, 15338), (344, 15458), (348, 15512), (352, 15578), (360, 15674), (362, 15728), (363, 15737), (366, 15764), (371, 15815), (373, 15851), (378, 15977), (383, 16052), (388, 16082), (396, 16274), (397, 16283), (400, 16361), (404, 16541), (411, 16631), (413, 16745), (415, 16802), (416, 16811), (417, 16832), (420, 16868), (424, 17003), (425, 17009), (426, 17051), (427, 17057), (428, 17063),

Gene: Howe\_18 Start: 10520, Stop: 17068, Start Num: 6

Candidate Starts for Howe\_18:

(Start: 6 @10520 has 5 MA's), (Start: 7 @10532 has 46 MA's), (9, 10571), (Start: 13 @10628 has 1 MA's), (17, 10670), (20, 10730), (23, 10790), (Start: 25 @10808 has 1 MA's), (32, 10934), (37, 10973), (39, 10994), (40, 11003), (42, 11015), (43, 11027), (46, 11072), (48, 11099), (54, 11174), (58, 11237), (59, 11258), (64, 11351), (65, 11387), (67, 11423), (69, 11441), (70, 11450), (73, 11483), (74, 11516), (77, 11585), (79, 11615), (80, 11630), (84, 11687), (86, 11738), (87, 11753), (91, 11786), (100, 11891), (102, 11900), (104, 11921), (108, 11957), (109, 11963), (113, 12005), (116, 12047), (120, 12107), (125, 12254), (127, 12293), (129, 12320), (134, 12413), (142, 12551), (143, 12557), (144, 12593), (145, 12605), (148, 12677), (151, 12776), (166, 13070), (169, 13112), (172, 13145), (173, 13151), (182, 13235), (184, 13262), (192, 13349), (194, 13394), (195, 13400), (202, 13556), (204, 13586), (205, 13589), (207, 13604), (210, 13628), (212, 13706), (213, 13736), (214, 13745), (220, 13793), (223, 13820), (226, 13883), (230, 13952), (236, 14000), (238, 14018), (240, 14045), (241, 14051), (244, 14096), (245, 14108), (246, 14117), (248, 14153), (253, 14252), (255, 14297), (256, 14309), (258, 14336), (259, 14372), (262, 14402), (266, 14462), (268, 14504), (269, 14513), (270, 14522), (272, 14549), (273, 14582), (276, 14648), (277, 14660), (280, 14738), (282, 14771), (305, 14933), (306, 14942), (308, 14966), (309, 14972), (314, 15011), (315, 15068), (317, 15095), (319, 15116), (320, 15128), (322, 15140), (324, 15176), (326, 15206), (327, 15224), (330, 15284), (334, 15329), (335, 15338), (344, 15458), (348, 15512), (352, 15578), (360, 15674), (362, 15728), (363, 15737), (366, 15764), (371, 15815), (373, 15851), (378, 15977), (383, 16052), (388, 16082), (396, 16274), (397, 16283), (400, 16361), (404, 16541), (411, 16631), (413, 16745), (415, 16802), (416, 16811), (417, 16832), (420, 16868), (424, 17003), (425, 17009), (426, 17051), (427, 17057), (428, 17063),

Gene: Hugley\_17 Start: 10512, Stop: 16940, Start Num: 7

Candidate Starts for Hugley\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (276, 14508), (277, 14520), (279, 14544), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (327, 15087), (340, 15252),

(343, 15321), (346, 15333), (347, 15336), (352, 15444), (354, 15453), (356, 15510), (361, 15546), (369, 15651), (371, 15672), (378, 15834), (379, 15837), (390, 15951), (397, 16155), (398, 16176), (399, 16194), (400, 16233), (402, 16323), (404, 16413), (406, 16431), (407, 16446), (408, 16458), (411, 16503), (413, 16617), (415, 16674), (416, 16683), (417, 16704), (418, 16707), (420, 16740), (421, 16797), (422, 16839), (423, 16869), (425, 16881), (426, 16923), (427, 16929),

Gene: Hyzer\_17 Start: 10553, Stop: 17011, Start Num: 7

Candidate Starts for Hyzer\_17:

(Start: 7 @10553 has 46 MA's), (8, 10586), (Start: 13 @10649 has 1 MA's), (16, 10679), (17, 10691), (22, 10808), (23, 10811), (24, 10817), (28, 10880), (34, 10997), (35, 11006), (38, 11039), (41, 11069), (43, 11090), (47, 11138), (50, 11177), (51, 11195), (52, 11201), (53, 11231), (57, 11294), (62, 11366), (63, 11399), (66, 11462), (71, 11522), (72, 11525), (73, 11543), (77, 11645), (81, 11711), (93, 11837), (104, 11900), (111, 11942), (114, 11984), (115, 11990), (116, 11993), (117, 12017), (120, 12053), (121, 12068), (125, 12200), (127, 12239), (129, 12266), (132, 12338), (133, 12350), (134, 12359), (136, 12398), (142, 12497), (143, 12503), (144, 12539), (145, 12551), (150, 12698), (158, 12890), (161, 12941), (165, 13016), (168, 13058), (169, 13061), (171, 13076), (172, 13094), (173, 13100), (177, 13139), (188, 13244), (193, 13301), (198, 13406), (199, 13424), (202, 13502), (203, 13508), (204, 13532), (205, 13535), (210, 13574), (213, 13685), (214, 13694), (223, 13769), (226, 13832), (230, 13901), (238, 13967), (239, 13985), (241, 14000), (244, 14045), (245, 14057), (246, 14066), (247, 14090), (248, 14102), (250, 14168), (253, 14201), (255, 14246), (258, 14285), (260, 14324), (262, 14351), (266, 14411), (269, 14462), (273, 14531), (275, 14555), (276, 14597), (277, 14609), (279, 14633), (280, 14687), (282, 14720), (304, 14870), (305, 14882), (306, 14891), (308, 14915), (309, 14921), (314, 14963), (315, 15020), (317, 15047), (319, 15068), (320, 15080), (322, 15092), (324, 15128), (326, 15161), (327, 15179), (330, 15239), (334, 15284), (337, 15302), (338, 15332), (340, 15341), (344, 15413), (348, 15467), (352, 15533), (356, 15599), (361, 15635), (369, 15740), (371, 15761), (373, 15797), (378, 15923), (393, 16079), (395, 16208), (400, 16301), (404, 16484), (405, 16490), (406, 16502), (407, 16517), (408, 16529), (411, 16574), (413, 16688), (415, 16745), (417, 16775), (419, 16793), (424, 16946), (425, 16952), (426, 16994), (427, 17000),

Gene: Invectra\_19 Start: 10327, Stop: 16869, Start Num: 7

Candidate Starts for Invectra\_19:

(Start: 6 @10315 has 5 MA's), (Start: 7 @10327 has 46 MA's), (9, 10366), (Start: 13 @10423 has 1 MA's), (17, 10465), (20, 10525), (23, 10585), (Start: 25 @10603 has 1 MA's), (32, 10729), (37, 10768), (39, 10789), (40, 10798), (42, 10810), (43, 10822), (46, 10867), (48, 10894), (54, 10969), (58, 11032), (59, 11053), (64, 11146), (65, 11182), (67, 11218), (69, 11236), (70, 11245), (73, 11278), (74, 11311), (77, 11380), (79, 11410), (80, 11425), (84, 11482), (86, 11533), (87, 11548), (91, 11581), (100, 11686), (102, 11695), (104, 11716), (108, 11752), (109, 11758), (113, 11800), (116, 11842), (120, 11902), (125, 12049), (127, 12088), (129, 12115), (134, 12208), (142, 12346), (143, 12352), (144, 12388), (145, 12400), (148, 12472), (151, 12571), (166, 12865), (169, 12907), (172, 12940), (173, 12946), (182, 13030), (184, 13057), (192, 13144), (194, 13189), (195, 13195), (202, 13351), (204, 13381), (205, 13384), (207, 13399), (210, 13423), (212, 13501), (213, 13531), (214, 13540), (220, 13588), (223, 13615), (226, 13678), (230, 13747), (236, 13795), (238, 13813), (240, 13840), (241, 13846), (244, 13891), (245, 13903), (246, 13912), (248, 13948), (253, 14047), (255, 14092), (256, 14104), (258, 14131), (259, 14167), (262, 14197), (266, 14257), (268, 14299), (269, 14308), (270, 14317), (272, 14344), (273, 14377), (276, 14443), (277, 14455), (280, 14533), (282, 14566), (305, 14728), (306, 14737), (308, 14761), (309, 14767), (314, 14806), (315, 14863), (317, 14890), (319, 14911), (320, 14923), (322, 14935), (324, 14971), (326, 15001), (327, 15019), (330, 15079), (334, 15124), (335, 15133), (344, 15253), (348, 15307), (352, 15373), (360, 15469), (361, 15475), (362, 15523), (363, 15532), (366, 15559), (371, 15610), (373, 15646), (376, 15718), (378, 15772), (396, 16075), (400, 16162), (404, 16342), (411, 16432), (413, 16546), (415, 16603), (416, 16612), (417, 16633), (420, 16669), (424, 16804), (425, 16810), (426, 16852), (427, 16858), (428, 16864),

Gene: Kita\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Kita\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Madeline\_17 Start: 10798, Stop: 17238, Start Num: 7

Candidate Starts for Madeline\_17:

(Start: 6 @10789 has 5 MA's), (Start: 7 @10798 has 46 MA's), (8, 10831), (Start: 13 @10894 has 1 MA's), (17, 10936), (23, 11056), (29, 11146), (30, 11158), (41, 11314), (43, 11335), (46, 11380), (51, 11440), (52, 11446), (57, 11539), (60, 11584), (62, 11611), (63, 11644), (71, 11767), (72, 11770), (77, 11890), (79, 11920), (87, 12049), (90, 12070), (93, 12082), (95, 12100), (104, 12145), (111, 12187), (112, 12196), (113, 12208), (114, 12229), (115, 12235), (116, 12238), (117, 12262), (119, 12271), (124, 12442), (139, 12658), (142, 12694), (143, 12700), (144, 12736), (145, 12748), (156, 13054), (160, 13117), (161, 13135), (165, 13210), (173, 13294), (179, 13351), (183, 13393), (184, 13405), (188, 13438), (191, 13468), (192, 13492), (198, 13603), (202, 13699), (204, 13729), (205, 13732), (207, 13747), (210, 13771), (213, 13882), (214, 13891), (223, 13966), (226, 14029), (229, 14083), (230, 14098), (234, 14140), (238, 14164), (241, 14197), (244, 14242), (248, 14299), (252, 14374), (253, 14398), (255, 14443), (258, 14482), (260, 14521), (262, 14548), (266, 14608), (269, 14659), (272, 14695), (273, 14728), (275, 14752), (276, 14794), (277, 14806), (279, 14830), (280, 14884), (282, 14917), (304, 15067), (305, 15079), (306, 15088), (307, 15109), (308, 15112), (309, 15118), (313, 15148), (314, 15160), (315, 15217), (316, 15229), (317, 15244), (318, 15253), (319, 15265), (320, 15277), (322, 15289), (324, 15325), (326, 15358), (327, 15376), (330, 15436), (334, 15481), (344, 15610), (348, 15664), (352, 15730), (354, 15739), (356, 15796), (361, 15832), (363, 15886), (368, 15931), (374, 16063), (378, 16132), (397, 16453), (398, 16474), (399, 16492), (400, 16531), (401, 16546), (404, 16711), (406, 16729), (407, 16744), (408, 16756), (409, 16768), (411, 16801), (412, 16825), (413, 16915), (415, 16972), (416, 16981), (417, 17002), (421, 17095), (423, 17167), (425, 17179), (426, 17221), (427, 17227),

Gene: Manasvini\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Manasvini\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160,



12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Maridalia\_16 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Maridalia\_16:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Mcklovin\_18 Start: 11645, Stop: 19237, Start Num: 7

Candidate Starts for Mcklovin\_18:

(Start: 6 @11633 has 5 MA's), (Start: 7 @11645 has 46 MA's), (9, 11684), (Start: 13 @11741 has 1 MA's), (17, 11783), (20, 11843), (23, 11903), (Start: 25 @11921 has 1 MA's), (32, 12047), (37, 12086), (39, 12107), (40, 12116), (42, 12128), (43, 12140), (46, 12185), (48, 12212), (54, 12287), (58, 12350), (59, 12371), (64, 12464), (65, 12500), (67, 12536), (69, 12554), (70, 12563), (73, 12596), (74, 12629), (77, 12698), (79, 12728), (80, 12743), (84, 12800), (86, 12851), (87, 12866), (91, 12899), (100, 13004), (102, 13013), (104, 13034), (108, 13070), (109, 13076), (113, 13118), (116, 13160), (120, 13220), (125, 13367), (127, 13406), (129, 13433), (134, 13526), (142, 13664), (143, 13670), (144, 13706), (145, 13718), (148, 13790), (151, 13889), (166, 14183), (169, 14225), (173, 14264), (176, 14300), (179, 14321), (183, 14363), (192, 14462), (194, 14507), (195, 14513), (202, 14669), (204, 14699), (205, 14702), (207, 14717), (210, 14741), (211, 14783), (212, 14819), (214, 14858), (220, 14906), (223, 14933), (226, 14996), (230, 15065), (234, 15107), (236, 15113), (238, 15131), (240, 15158), (241, 15164), (244, 15209), (245, 15221), (246, 15230), (247, 15254), (248, 15266), (252, 15341), (253, 15365), (255, 15410), (258, 15449), (259, 15485), (262, 15515), (265, 15548), (266, 15575),

(268, 15617), (269, 15626), (272, 15662), (273, 15695), (276, 15761), (277, 15773), (280, 15851), (282, 15884), (284, 16028), (285, 16172), (286, 16178), (287, 16307), (288, 16322), (289, 16379), (290, 16511), (291, 16550), (292, 16574), (293, 16664), (294, 16730), (295, 16754), (296, 16880), (297, 16949), (298, 16994), (299, 17003), (300, 17030), (301, 17063), (305, 17102), (306, 17111), (308, 17135), (309, 17141), (314, 17180), (315, 17237), (317, 17264), (319, 17285), (320, 17297), (322, 17309), (324, 17345), (326, 17375), (327, 17393), (330, 17453), (334, 17498), (344, 17627), (348, 17681), (352, 17747), (360, 17843), (362, 17897), (363, 17906), (366, 17933), (367, 17948), (371, 17984), (373, 18020), (378, 18146), (383, 18221), (386, 18239), (388, 18251), (392, 18299), (396, 18443), (397, 18452), (400, 18530), (404, 18710), (411, 18800), (413, 18914), (415, 18971), (416, 18980), (417, 19001), (420, 19037), (422, 19136), (424, 19172), (425, 19178), (426, 19220), (427, 19226), (428, 19232),

Gene: MichaelScott\_18 Start: 10327, Stop: 16863, Start Num: 7

Candidate Starts for MichaelScott\_18:

(Start: 6 @10315 has 5 MA's), (Start: 7 @10327 has 46 MA's), (9, 10366), (Start: 13 @10423 has 1 MA's), (17, 10465), (20, 10525), (23, 10585), (Start: 25 @10603 has 1 MA's), (32, 10729), (37, 10768), (39, 10789), (40, 10798), (42, 10810), (43, 10822), (46, 10867), (48, 10894), (54, 10969), (58, 11032), (59, 11053), (64, 11146), (65, 11182), (67, 11218), (69, 11236), (70, 11245), (73, 11278), (74, 11311), (77, 11380), (79, 11410), (80, 11425), (84, 11482), (86, 11533), (87, 11548), (91, 11581), (100, 11686), (102, 11695), (104, 11716), (108, 11752), (109, 11758), (113, 11800), (116, 11842), (120, 11902), (125, 12049), (127, 12088), (129, 12115), (134, 12208), (142, 12346), (143, 12352), (144, 12388), (145, 12400), (148, 12472), (151, 12571), (166, 12865), (169, 12907), (172, 12940), (173, 12946), (182, 13030), (184, 13057), (192, 13144), (194, 13189), (195, 13195), (202, 13351), (204, 13381), (205, 13384), (207, 13399), (210, 13423), (212, 13501), (213, 13531), (214, 13540), (220, 13588), (223, 13615), (226, 13678), (230, 13747), (236, 13795), (238, 13813), (240, 13840), (241, 13846), (244, 13891), (245, 13903), (246, 13912), (248, 13948), (253, 14047), (255, 14092), (256, 14104), (258, 14131), (259, 14167), (262, 14197), (266, 14257), (268, 14299), (269, 14308), (270, 14317), (272, 14344), (273, 14377), (276, 14443), (277, 14455), (280, 14533), (282, 14566), (305, 14728), (306, 14737), (308, 14761), (309, 14767), (314, 14806), (315, 14863), (317, 14890), (319, 14911), (320, 14923), (322, 14935), (324, 14971), (326, 15001), (327, 15019), (330, 15079), (334, 15124), (335, 15133), (344, 15253), (348, 15307), (352, 15373), (360, 15469), (362, 15523), (363, 15532), (366, 15559), (371, 15610), (373, 15646), (376, 15718), (378, 15772), (383, 15847), (396, 16069), (397, 16078), (400, 16156), (404, 16336), (411, 16426), (413, 16540), (415, 16597), (416, 16606), (417, 16627), (420, 16663), (422, 16762), (424, 16798), (425, 16804), (426, 16846), (427, 16852), (428, 16858),

Gene: Neobush\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Neobush\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344,

15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Nymphadora\_17 Start: 10512, Stop: 16940, Start Num: 7

Candidate Starts for Nymphadora\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77, 11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (276, 14508), (277, 14520), (279, 14544), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (327, 15087), (340, 15252), (343, 15321), (346, 15333), (347, 15336), (352, 15444), (354, 15453), (356, 15510), (361, 15546), (369, 15651), (371, 15672), (378, 15834), (379, 15837), (397, 16155), (398, 16176), (399, 16194), (400, 16233), (402, 16323), (404, 16413), (406, 16431), (407, 16446), (408, 16458), (411, 16503), (413, 16617), (415, 16674), (416, 16683), (417, 16704), (418, 16707), (420, 16740), (421, 16797), (422, 16839), (423, 16869), (425, 16881), (426, 16923), (427, 16929),

Gene: Ohgeesy\_17 Start: 10144, Stop: 16563, Start Num: 7

Candidate Starts for Ohgeesy\_17:

(Start: 6 @10135 has 5 MA's), (Start: 7 @10144 has 46 MA's), (8, 10177), (Start: 13 @10240 has 1 MA's), (17, 10282), (23, 10402), (29, 10492), (30, 10504), (41, 10660), (43, 10681), (46, 10726), (51, 10786), (52, 10792), (57, 10885), (60, 10930), (62, 10957), (63, 10990), (71, 11113), (72, 11116), (77, 11236), (79, 11266), (87, 11395), (90, 11416), (93, 11428), (104, 11491), (111, 11533), (113, 11554), (114, 11575), (115, 11581), (116, 11584), (117, 11608), (119, 11617), (124, 11788), (139, 12004), (142, 12040), (143, 12046), (144, 12082), (145, 12094), (156, 12400), (160, 12463), (161, 12481), (165, 12556), (173, 12640), (179, 12697), (183, 12739), (184, 12751), (188, 12784), (192, 12838), (198, 12949), (202, 13045), (204, 13075), (205, 13078), (210, 13117), (213, 13228), (214, 13237), (216, 13243), (217, 13276), (223, 13312), (226, 13375), (229, 13429), (230, 13444), (232, 13474), (233, 13480), (234, 13486), (238, 13510), (239, 13528), (241, 13543), (244, 13588), (248, 13645), (252, 13720), (253, 13744), (255, 13789), (258, 13828), (260, 13867), (262, 13894), (266, 13954), (269, 14005), (272, 14041), (273, 14074), (275, 14098), (276, 14140), (277, 14152), (279, 14176), (280, 14230), (282, 14263), (304, 14413), (305, 14425), (306, 14434), (307, 14455), (308, 14458), (309, 14464), (313, 14494), (314, 14506), (315, 14563), (316, 14575), (317, 14590), (318, 14599), (319, 14611), (320, 14623), (322, 14635), (323, 14641), (324, 14671), (326, 14704), (327, 14722), (330, 14782), (334, 14827), (340, 14884), (344, 14956), (348, 15010), (352, 15076), (356, 15142), (361, 15178), (365, 15250), (369, 15280), (371, 15301), (373, 15337), (378, 15463), (379, 15466), (397, 15778), (398, 15799), (399, 15817), (400, 15856), (401, 15871), (402, 15946), (404, 16036), (406, 16054), (407, 16069), (408, 16081), (411, 16126), (413, 16240), (415, 16297), (416, 16306), (417, 16327), (418, 16330), (420, 16363), (421, 16420), (422, 16462), (423, 16492), (425, 16504), (426, 16546), (427, 16552),

Gene: Oregano\_18 Start: 9986, Stop: 16534, Start Num: 6

Candidate Starts for Oregano\_18:

(Start: 6 @9986 has 5 MA's), (Start: 7 @9998 has 46 MA's), (9, 10037), (Start: 13 @10094 has 1 MA's), (17, 10136), (20, 10196), (23, 10256), (Start: 25 @10274 has 1 MA's), (32, 10400), (37, 10439), (39, 10460), (40, 10469), (42, 10481), (43, 10493), (46, 10538), (48, 10565), (54, 10640), (58, 10703), (59, 10724), (64, 10817), (65, 10853), (67, 10889), (69, 10907), (70, 10916), (73, 10949), (74, 10982), (77, 11051), (79, 11081), (80, 11096), (84, 11153), (86, 11204), (87, 11219), (91, 11252), (100, 11357), (102, 11366), (104, 11387), (108, 11423), (109, 11429), (113, 11471), (116, 11513), (120, 11573), (125, 11720), (127, 11759), (129, 11786), (134, 11879), (142, 12017), (143, 12023), (144, 12059), (145, 12071), (148, 12143), (151, 12242), (166, 12536), (169, 12578), (172, 12611), (173, 12617), (182, 12701), (184, 12728), (192, 12815), (194, 12860), (195, 12866), (202, 13022), (204, 13052), (205, 13055), (207, 13070), (210, 13094), (212, 13172), (213, 13202), (214, 13211), (220, 13259), (223, 13286), (226, 13349), (230, 13418), (236, 13466), (238, 13484), (240, 13511), (241, 13517), (244, 13562), (245, 13574), (246, 13583), (248, 13619), (253, 13718), (255, 13763), (256, 13775), (258, 13802), (259, 13838), (262, 13868), (266, 13928), (268, 13970), (269, 13979), (270, 13988), (272, 14015), (273, 14048), (276, 14114), (277, 14126), (280, 14204), (282, 14237), (305, 14399), (306, 14408), (308, 14432), (309, 14438), (314, 14477), (315, 14534), (317, 14561), (319, 14582), (320, 14594), (322, 14606), (324, 14642), (326, 14672), (327, 14690), (330, 14750), (334, 14795), (335, 14804), (344, 14924), (348, 14978), (352, 15044), (360, 15140), (362, 15194), (363, 15203), (366, 15230), (367, 15245), (371, 15281), (373, 15317), (376, 15389), (378, 15443), (383, 15518), (388, 15548), (396, 15740), (397, 15749), (400, 15827), (404, 16007), (411, 16097), (413, 16211), (415, 16268), (416, 16277), (417, 16298), (420, 16334), (424, 16469), (425, 16475), (426, 16517), (427, 16523), (428, 16529),

Gene: PantheRoc\_17 Start: 9846, Stop: 16271, Start Num: 7

Candidate Starts for PantheRoc\_17:

(Start: 7 @9846 has 46 MA's), (Start: 13 @9942 has 1 MA's), (17, 9984), (23, 10104), (Start: 25 @10122 has 1 MA's), (28, 10173), (29, 10194), (30, 10206), (41, 10362), (43, 10383), (46, 10428), (51, 10488), (52, 10494), (57, 10587), (60, 10632), (62, 10659), (63, 10692), (71, 10815), (72, 10818), (77, 10938), (79, 10968), (87, 11097), (90, 11118), (93, 11130), (104, 11193), (111, 11235), (113, 11256), (114, 11277), (115, 11283), (116, 11286), (117, 11310), (119, 11319), (124, 11490), (139, 11706), (142, 11742), (143, 11748), (144, 11784), (145, 11796), (156, 12102), (160, 12165), (161, 12183), (165, 12258), (173, 12342), (179, 12399), (183, 12441), (184, 12453), (188, 12486), (189, 12489), (192, 12540), (198, 12651), (202, 12747), (204, 12777), (205, 12780), (207, 12795), (210, 12819), (213, 12930), (214, 12939), (216, 12945), (223, 13014), (226, 13077), (229, 13131), (230, 13146), (234, 13188), (238, 13212), (239, 13230), (241, 13245), (244, 13290), (248, 13347), (250, 13413), (253, 13446), (255, 13491), (258, 13530), (260, 13569), (262, 13596), (266, 13656), (269, 13707), (272, 13743), (273, 13776), (276, 13842), (277, 13854), (279, 13878), (280, 13932), (282, 13965), (304, 14115), (305, 14127), (306, 14136), (307, 14157), (308, 14160), (309, 14166), (313, 14196), (314, 14208), (315, 14265), (317, 14292), (318, 14301), (319, 14313), (320, 14325), (322, 14337), (324, 14373), (326, 14406), (327, 14424), (330, 14484), (334, 14529), (337, 14547), (344, 14658), (348, 14712), (352, 14778), (354, 14787), (356, 14844), (361, 14880), (371, 15006), (373, 15042), (378, 15168), (379, 15171), (397, 15486), (398, 15507), (399, 15525), (400, 15564), (401, 15579), (404, 15744), (406, 15762), (407, 15777), (408, 15789), (411, 15834), (412, 15858), (413, 15948), (414, 15987), (415, 16005), (416, 16014), (417, 16035), (418, 16038), (420, 16071), (421, 16128), (423, 16200), (425, 16212), (426, 16254), (427, 16260),

Gene: PhriskyACE\_17 Start: 9572, Stop: 15988, Start Num: 7

Candidate Starts for PhriskyACE\_17:

(Start: 7 @9572 has 46 MA's), (17, 9710), (19, 9764), (24, 9836), (Start: 25 @9848 has 1 MA's), (39, 10076), (43, 10109), (46, 10154), (51, 10214), (52, 10220), (57, 10313), (60, 10358), (61, 10379), (62, 10385), (63, 10418), (64, 10433), (71, 10541), (72, 10544), (76, 10661), (77, 10664), (78, 10691), (84, 10757), (88, 10829), (93, 10856), (95, 10874), (104, 10919), (114, 11003), (115, 11009), (116, 11012), (117, 11036), (124, 11216), (131, 11303), (142, 11468), (143, 11474), (144, 11510), (145, 11522),

(147, 11585), (149, 11663), (156, 11828), (161, 11909), (165, 11984), (169, 12029), (172, 12062), (173, 12068), (175, 12101), (184, 12179), (192, 12266), (194, 12311), (195, 12317), (204, 12503), (205, 12506), (208, 12536), (210, 12545), (212, 12626), (214, 12665), (220, 12713), (223, 12740), (226, 12803), (230, 12872), (234, 12914), (236, 12920), (238, 12938), (240, 12965), (241, 12971), (244, 13016), (245, 13028), (246, 13037), (247, 13061), (248, 13073), (253, 13172), (255, 13217), (258, 13256), (259, 13292), (262, 13322), (266, 13382), (268, 13424), (269, 13433), (272, 13469), (273, 13502), (276, 13568), (277, 13580), (280, 13658), (282, 13691), (304, 13841), (305, 13853), (306, 13862), (308, 13886), (309, 13892), (314, 13931), (315, 13988), (319, 14036), (320, 14048), (322, 14060), (324, 14096), (327, 14144), (330, 14204), (334, 14249), (344, 14378), (348, 14432), (352, 14498), (360, 14594), (361, 14600), (362, 14648), (363, 14657), (366, 14684), (371, 14735), (373, 14771), (376, 14843), (378, 14897), (382, 14945), (386, 14990), (388, 15002), (391, 15011), (392, 15050), (396, 15194), (400, 15281), (404, 15461), (411, 15551), (413, 15665), (415, 15722), (416, 15731), (417, 15752), (420, 15788), (424, 15923), (425, 15929), (426, 15971), (427, 15977), (428, 15983),

Gene: Polly\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Polly\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Powerball\_17 Start: 9581, Stop: 15994, Start Num: 7

Candidate Starts for Powerball\_17:

(Start: 7 @9581 has 46 MA's), (Start: 13 @9677 has 1 MA's), (17, 9719), (24, 9845), (Start: 25 @9857 has 1 MA's), (39, 10085), (43, 10118), (46, 10163), (51, 10223), (52, 10229), (57, 10322), (60, 10367), (61, 10388), (62, 10394), (63, 10427), (64, 10442), (69, 10529), (72, 10553), (75, 10616), (76, 10670), (77, 10673), (84, 10766), (88, 10838), (93, 10865), (95, 10883), (104, 10928), (114, 11012), (115, 11018), (117, 11045), (124, 11225), (142, 11477), (143, 11483), (144, 11519), (145, 11531), (147, 11594), (149, 11672), (161, 11918), (165, 11993), (169, 12038), (170, 12044), (172, 12071), (173, 12077), (175, 12110), (182, 12161), (192, 12275), (194, 12320), (195, 12326), (202, 12482), (204, 12512), (205, 12515), (207, 12530), (210, 12554), (212, 12632), (213, 12662), (214, 12671), (223, 12746), (224, 12782), (226, 12809), (230, 12878), (234, 12920), (236, 12926), (238, 12944), (240, 12971), (241, 12977), (244, 13022), (245, 13034), (246, 13043), (248, 13079), (253, 13178), (255, 13223), (258, 13262), (259, 13298), (262, 13328), (266, 13388), (269, 13439), (273, 13508), (276, 13574), (277, 13586), (278, 13607), (279, 13610), (280, 13664), (281, 13685), (282, 13697), (304, 13847), (305, 13859), (306, 13868), (308, 13892), (309, 13898), (314, 13937), (315, 13994), (319,

14042), (320, 14054), (322, 14066), (326, 14132), (327, 14150), (330, 14210), (334, 14255), (338, 14303), (344, 14384), (348, 14438), (352, 14504), (360, 14600), (361, 14606), (362, 14666), (363, 14675), (373, 14777), (376, 14849), (378, 14903), (386, 14996), (388, 15008), (392, 15056), (396, 15200), (400, 15287), (404, 15467), (411, 15557), (413, 15671), (416, 15737), (417, 15758), (420, 15794), (424, 15929), (425, 15935), (426, 15977), (427, 15983), (428, 15989),

Gene: Samman98\_18 Start: 10090, Stop: 16503, Start Num: 7

Candidate Starts for Samman98\_18:

(Start: 7 @10090 has 46 MA's), (Start: 13 @10186 has 1 MA's), (17, 10228), (24, 10354), (Start: 25 @10366 has 1 MA's), (39, 10594), (43, 10627), (46, 10672), (51, 10732), (52, 10738), (57, 10831), (60, 10876), (61, 10897), (62, 10903), (63, 10936), (64, 10951), (71, 11059), (72, 11062), (76, 11179), (77, 11182), (84, 11275), (88, 11347), (93, 11374), (95, 11392), (104, 11437), (114, 11521), (115, 11527), (116, 11530), (117, 11554), (124, 11734), (128, 11767), (142, 11986), (143, 11992), (144, 12028), (145, 12040), (149, 12181), (156, 12346), (161, 12427), (165, 12502), (169, 12547), (172, 12580), (173, 12586), (175, 12619), (184, 12697), (192, 12784), (194, 12829), (195, 12835), (202, 12991), (204, 13021), (205, 13024), (207, 13039), (210, 13063), (211, 13105), (212, 13141), (213, 13171), (214, 13180), (220, 13228), (223, 13255), (226, 13318), (230, 13387), (236, 13435), (238, 13453), (240, 13480), (241, 13486), (244, 13531), (245, 13543), (246, 13552), (248, 13588), (253, 13687), (255, 13732), (256, 13744), (258, 13771), (259, 13807), (262, 13837), (266, 13897), (268, 13939), (269, 13948), (270, 13957), (272, 13984), (273, 14017), (276, 14083), (277, 14095), (280, 14173), (282, 14206), (305, 14368), (306, 14377), (308, 14401), (309, 14407), (314, 14446), (315, 14503), (317, 14530), (319, 14551), (320, 14563), (322, 14575), (324, 14611), (326, 14641), (327, 14659), (330, 14719), (334, 14764), (335, 14773), (344, 14893), (348, 14947), (352, 15013), (360, 15109), (362, 15163), (363, 15172), (366, 15199), (371, 15250), (373, 15286), (378, 15412), (383, 15487), (388, 15517), (396, 15709), (397, 15718), (400, 15796), (404, 15976), (411, 16066), (413, 16180), (415, 16237), (416, 16246), (417, 16267), (420, 16303), (424, 16438), (425, 16444), (426, 16486), (427, 16492), (428, 16498),

Gene: Sekhmet\_18 Start: 10327, Stop: 16863, Start Num: 7

Candidate Starts for Sekhmet\_18:

(Start: 6 @10315 has 5 MA's), (Start: 7 @10327 has 46 MA's), (9, 10366), (Start: 13 @10423 has 1 MA's), (17, 10465), (20, 10525), (23, 10585), (Start: 25 @10603 has 1 MA's), (32, 10729), (37, 10768), (39, 10789), (40, 10798), (42, 10810), (43, 10822), (46, 10867), (48, 10894), (54, 10969), (58, 11032), (59, 11053), (64, 11146), (65, 11182), (67, 11218), (69, 11236), (70, 11245), (73, 11278), (74, 11311), (77, 11380), (79, 11410), (80, 11425), (84, 11482), (86, 11533), (87, 11548), (91, 11581), (100, 11686), (102, 11695), (104, 11716), (108, 11752), (109, 11758), (113, 11800), (116, 11842), (120, 11902), (125, 12049), (127, 12088), (129, 12115), (134, 12208), (142, 12346), (143, 12352), (144, 12388), (145, 12400), (148, 12472), (151, 12571), (166, 12865), (169, 12907), (172, 12940), (173, 12946), (182, 13030), (184, 13057), (192, 13144), (194, 13189), (195, 13195), (202, 13351), (204, 13381), (205, 13384), (207, 13399), (210, 13423), (212, 13501), (213, 13531), (214, 13540), (220, 13588), (223, 13615), (226, 13678), (230, 13747), (236, 13795), (238, 13813), (240, 13840), (241, 13846), (244, 13891), (245, 13903), (246, 13912), (248, 13948), (253, 14047), (255, 14092), (256, 14104), (258, 14131), (259, 14167), (262, 14197), (266, 14257), (268, 14299), (269, 14308), (270, 14317), (272, 14344), (273, 14377), (276, 14443), (277, 14455), (280, 14533), (282, 14566), (305, 14728), (306, 14737), (308, 14761), (309, 14767), (314, 14806), (315, 14863), (317, 14890), (319, 14911), (320, 14923), (322, 14935), (324, 14971), (326, 15001), (327, 15019), (330, 15079), (334, 15124), (335, 15133), (344, 15253), (348, 15307), (352, 15373), (360, 15469), (362, 15523), (363, 15532), (366, 15559), (371, 15610), (373, 15646), (376, 15718), (378, 15772), (383, 15847), (396, 16069), (397, 16078), (400, 16156), (404, 16336), (411, 16426), (413, 16540), (415, 16597), (416, 16606), (417, 16627), (420, 16663), (422, 16762), (424, 16798), (425, 16804), (426, 16846), (427, 16852), (428, 16858),

Gene: Shlim410\_18 Start: 10520, Stop: 17068, Start Num: 6

Candidate Starts for Shlim410\_18:

(Start: 6 @10520 has 5 MA's), (Start: 7 @10532 has 46 MA's), (9, 10571), (Start: 13 @10628 has 1 MA's), (17, 10670), (20, 10730), (23, 10790), (Start: 25 @10808 has 1 MA's), (32, 10934), (37, 10973), (39, 10994), (40, 11003), (42, 11015), (43, 11027), (46, 11072), (48, 11099), (54, 11174), (58, 11237), (59, 11258), (64, 11351), (65, 11387), (67, 11423), (69, 11441), (70, 11450), (73, 11483), (74, 11516), (77, 11585), (79, 11615), (80, 11630), (84, 11687), (86, 11738), (87, 11753), (91, 11786), (100, 11891), (102, 11900), (104, 11921), (108, 11957), (109, 11963), (113, 12005), (116, 12047), (120, 12107), (125, 12254), (127, 12293), (129, 12320), (134, 12413), (142, 12551), (143, 12557), (144, 12593), (145, 12605), (148, 12677), (151, 12776), (166, 13070), (169, 13112), (172, 13145), (173, 13151), (182, 13235), (184, 13262), (192, 13349), (194, 13394), (195, 13400), (202, 13556), (204, 13586), (205, 13589), (207, 13604), (210, 13628), (212, 13706), (213, 13736), (214, 13745), (220, 13793), (223, 13820), (226, 13883), (230, 13952), (236, 14000), (238, 14018), (240, 14045), (241, 14051), (244, 14096), (245, 14108), (246, 14117), (248, 14153), (253, 14252), (255, 14297), (256, 14309), (258, 14336), (259, 14372), (262, 14402), (266, 14462), (268, 14504), (269, 14513), (270, 14522), (272, 14549), (273, 14582), (276, 14648), (277, 14660), (280, 14738), (282, 14771), (305, 14933), (306, 14942), (308, 14966), (309, 14972), (314, 15011), (315, 15068), (317, 15095), (319, 15116), (320, 15128), (322, 15140), (324, 15176), (326, 15206), (327, 15224), (330, 15284), (334, 15329), (335, 15338), (344, 15458), (348, 15512), (352, 15578), (360, 15674), (362, 15728), (363, 15737), (366, 15764), (371, 15815), (373, 15851), (378, 15977), (383, 16052), (388, 16082), (396, 16274), (397, 16283), (400, 16361), (404, 16541), (411, 16631), (413, 16745), (415, 16802), (416, 16811), (417, 16832), (420, 16868), (424, 17003), (425, 17009), (426, 17051), (427, 17057), (428, 17063),

Gene: Sidious\_17 Start: 9992, Stop: 16465, Start Num: 7

Candidate Starts for Sidious\_17:

(Start: 7 @9992 has 46 MA's), (8, 10025), (Start: 13 @10088 has 1 MA's), (17, 10130), (22, 10247), (23, 10250), (24, 10256), (Start: 25 @10268 has 1 MA's), (33, 10427), (34, 10436), (35, 10445), (38, 10478), (41, 10508), (43, 10529), (47, 10577), (49, 10604), (50, 10616), (51, 10634), (52, 10640), (53, 10670), (56, 10718), (57, 10733), (62, 10805), (63, 10838), (66, 10901), (71, 10961), (72, 10964), (73, 10982), (77, 11084), (81, 11150), (84, 11177), (93, 11276), (104, 11339), (111, 11381), (113, 11402), (114, 11423), (115, 11429), (116, 11432), (117, 11456), (120, 11492), (121, 11507), (125, 11639), (127, 11678), (129, 11705), (131, 11750), (132, 11777), (134, 11798), (143, 11942), (144, 11978), (145, 11990), (158, 12329), (161, 12380), (162, 12404), (165, 12455), (168, 12497), (169, 12500), (171, 12515), (173, 12539), (175, 12572), (181, 12620), (186, 12662), (188, 12683), (190, 12707), (192, 12737), (193, 12740), (196, 12812), (198, 12845), (204, 12971), (205, 12974), (210, 13013), (213, 13124), (214, 13133), (223, 13208), (226, 13271), (230, 13340), (234, 13382), (237, 13400), (238, 13406), (239, 13424), (241, 13439), (244, 13484), (245, 13496), (246, 13505), (247, 13529), (248, 13541), (252, 13616), (255, 13685), (258, 13724), (260, 13763), (262, 13790), (266, 13850), (269, 13901), (273, 13970), (276, 14036), (277, 14048), (280, 14126), (282, 14159), (304, 14309), (305, 14321), (306, 14330), (308, 14354), (309, 14360), (313, 14390), (314, 14402), (315, 14459), (317, 14486), (319, 14507), (320, 14519), (322, 14531), (332, 14702), (339, 14783), (347, 14873), (352, 14981), (356, 15047), (364, 15152), (373, 15245), (378, 15371), (399, 15716), (400, 15755), (404, 15938), (405, 15944), (407, 15971), (408, 15983), (411, 16028), (413, 16142), (415, 16199), (416, 16208), (417, 16229), (419, 16247), (425, 16406), (426, 16448), (427, 16454),

Gene: Suerte\_16 Start: 9573, Stop: 15986, Start Num: 7

Candidate Starts for Suerte\_16:

(Start: 7 @9573 has 46 MA's), (Start: 13 @9669 has 1 MA's), (17, 9711), (19, 9765), (24, 9837), (Start: 25 @9849 has 1 MA's), (39, 10077), (43, 10110), (46, 10155), (51, 10215), (52, 10221), (57, 10314), (60, 10359), (61, 10380), (62, 10386), (63, 10419), (64, 10434), (71, 10542), (72, 10545), (76, 10662), (77, 10665), (84, 10758), (88, 10830), (93, 10857), (95, 10875), (104, 10920), (114, 11004), (115, 11010), (116, 11013), (117, 11037), (124, 11217), (128, 11250), (142, 11469), (143, 11475), (144, 11511), (145, 11523), (149, 11664), (156, 11829), (161, 11910), (165, 11985), (173, 12069), (182, 12153), (184, 12180), (192, 12267), (194, 12312), (195, 12318), (202, 12474), (204, 12504), (205,

12507), (207, 12522), (210, 12546), (211, 12588), (212, 12624), (213, 12654), (214, 12663), (220, 12711), (223, 12738), (226, 12801), (230, 12870), (236, 12918), (238, 12936), (240, 12963), (241, 12969), (244, 13014), (245, 13026), (246, 13035), (248, 13071), (253, 13170), (255, 13215), (258, 13254), (259, 13290), (262, 13320), (266, 13380), (268, 13422), (269, 13431), (272, 13467), (273, 13500), (276, 13566), (277, 13578), (280, 13656), (282, 13689), (305, 13851), (306, 13860), (308, 13884), (309, 13890), (314, 13929), (315, 13986), (319, 14034), (320, 14046), (322, 14058), (324, 14094), (326, 14124), (327, 14142), (330, 14202), (334, 14247), (335, 14256), (344, 14376), (352, 14496), (360, 14592), (361, 14598), (362, 14646), (363, 14655), (366, 14682), (371, 14733), (373, 14769), (376, 14841), (378, 14895), (386, 14988), (388, 15000), (392, 15048), (394, 15153), (396, 15192), (400, 15279), (404, 15459), (411, 15549), (413, 15663), (415, 15720), (416, 15729), (417, 15750), (420, 15786), (424, 15921), (425, 15927), (426, 15969), (427, 15975), (428, 15981),

Gene: Susceptit\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Susceptit\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Tayonia\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Tayonia\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368,



15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: ThankyouJordi\_16 Start: 10539, Stop: 16982, Start Num: 7

Candidate Starts for ThankyouJordi\_16:

(Start: 7 @10539 has 46 MA's), (Start: 13 @10635 has 1 MA's), (17, 10677), (23, 10797), (Start: 25 @10815 has 1 MA's), (28, 10866), (29, 10887), (30, 10899), (41, 11055), (43, 11076), (46, 11121), (51, 11181), (52, 11187), (57, 11280), (60, 11325), (61, 11346), (62, 11352), (63, 11385), (71, 11508), (72, 11511), (77, 11631), (84, 11724), (85, 11727), (87, 11790), (93, 11823), (95, 11841), (104, 11886), (111, 11928), (113, 11949), (114, 11970), (115, 11976), (116, 11979), (117, 12003), (119, 12012), (124, 12183), (139, 12399), (142, 12435), (143, 12441), (144, 12477), (145, 12489), (150, 12636), (156, 12795), (160, 12858), (164, 12936), (165, 12951), (173, 13035), (179, 13092), (183, 13134), (188, 13179), (189, 13182), (198, 13344), (202, 13440), (204, 13470), (205, 13473), (210, 13512), (213, 13623), (214, 13632), (223, 13707), (226, 13770), (230, 13839), (234, 13881), (238, 13905), (241, 13938), (244, 13983), (246, 14004), (247, 14028), (248, 14040), (253, 14139), (255, 14184), (258, 14223), (260, 14262), (262, 14289), (266, 14349), (269, 14400), (273, 14469), (275, 14493), (276, 14535), (277, 14547), (280, 14625), (282, 14658), (304, 14808), (305, 14820), (306, 14829), (308, 14853), (309, 14859), (314, 14901), (315, 14958), (317, 14985), (319, 15006), (322, 15030), (324, 15066), (326, 15102), (327, 15120), (330, 15180), (334, 15225), (340, 15282), (344, 15354), (348, 15408), (352, 15474), (356, 15540), (360, 15570), (361, 15576), (368, 15669), (374, 15801), (378, 15870), (382, 15918), (397, 16194), (398, 16215), (400, 16272), (401, 16287), (404, 16455), (405, 16461), (406, 16473), (407, 16488), (408, 16500), (411, 16545), (413, 16659), (415, 16716), (417, 16746), (419, 16764), (423, 16911), (424, 16917), (425, 16923), (426, 16965), (427, 16971),

Gene: Thimann\_18 Start: 10060, Stop: 16470, Start Num: 7

Candidate Starts for Thimann\_18:

(Start: 7 @10060 has 46 MA's), (Start: 13 @10156 has 1 MA's), (17, 10198), (Start: 25 @10336 has 1 MA's), (39, 10564), (43, 10597), (46, 10642), (51, 10702), (52, 10708), (57, 10801), (60, 10846), (61, 10867), (62, 10873), (63, 10906), (64, 10921), (71, 11029), (72, 11032), (76, 11149), (77, 11152), (84, 11245), (88, 11317), (93, 11344), (95, 11362), (104, 11407), (114, 11491), (115, 11497), (116, 11500), (117, 11524), (124, 11704), (128, 11737), (142, 11956), (143, 11962), (144, 11998), (145, 12010), (156, 12316), (161, 12397), (165, 12472), (173, 12556), (182, 12640), (184, 12667), (192, 12754), (194, 12799), (195, 12805), (202, 12961), (204, 12991), (205, 12994), (207, 13009), (210, 13033), (211, 13075), (212, 13111), (213, 13141), (214, 13150), (220, 13198), (223, 13225), (226, 13288), (230, 13357), (236, 13405), (238, 13423), (240, 13450), (241, 13456), (244, 13501), (245, 13513), (246, 13522), (248, 13558), (253, 13657), (255, 13702), (256, 13714), (258, 13741), (259, 13777), (262, 13807), (266, 13867), (268, 13909), (269, 13918), (270, 13927), (272, 13954), (273, 13987), (276, 14053), (277, 14065), (280, 14143), (282, 14176), (305, 14338), (306, 14347), (308, 14371), (309, 14377), (314, 14416), (315, 14473), (317, 14500), (319, 14521), (320, 14533), (322, 14545), (324, 14581), (326, 14611), (327, 14629), (330, 14689), (334, 14734), (335, 14743), (344, 14863), (348, 14917), (352, 14983), (360, 15079), (362, 15133), (363, 15142), (366, 15169), (371, 15220), (373, 15256), (378, 15382), (383, 15457), (388, 15487), (397, 15685), (398, 15706), (399, 15724), (400, 15763), (403, 15874), (404, 15943), (411, 16033), (413, 16147), (415, 16204), (416, 16213), (417, 16234), (420, 16270), (422, 16369), (424, 16405), (425, 16411), (426, 16453), (427, 16459), (428, 16465),

Gene: TimTam\_17 Start: 10512, Stop: 16940, Start Num: 7

Candidate Starts for TimTam\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77,

11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (241, 13911), (244, 13956), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (276, 14508), (277, 14520), (279, 14544), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (327, 15087), (340, 15252), (343, 15321), (346, 15333), (347, 15336), (352, 15444), (354, 15453), (356, 15510), (361, 15546), (369, 15651), (371, 15672), (378, 15834), (379, 15837), (397, 16155), (398, 16176), (399, 16194), (400, 16233), (402, 16323), (404, 16413), (406, 16431), (407, 16446), (408, 16458), (411, 16503), (413, 16617), (415, 16674), (416, 16683), (417, 16704), (418, 16707), (420, 16740), (421, 16797), (422, 16839), (423, 16869), (425, 16881), (426, 16923), (427, 16929),

Gene: Trumpet\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Trumpet\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Twinkle\_18 Start: 10520, Stop: 18127, Start Num: 6

Candidate Starts for Twinkle\_18:

(Start: 6 @10520 has 5 MA's), (Start: 7 @10532 has 46 MA's), (9, 10571), (Start: 13 @10628 has 1 MA's), (17, 10670), (20, 10730), (23, 10790), (Start: 25 @10808 has 1 MA's), (32, 10934), (37, 10973), (39, 10994), (40, 11003), (42, 11015), (43, 11027), (46, 11072), (48, 11099), (54, 11174), (58, 11237), (59, 11258), (64, 11351), (65, 11387), (67, 11423), (69, 11441), (70, 11450), (73, 11483), (74, 11516), (77, 11585), (79, 11615), (80, 11630), (84, 11687), (86, 11738), (87, 11753), (91, 11786), (100, 11891), (102, 11900), (104, 11921), (108, 11957), (109, 11963), (113, 12005), (116, 12047), (120, 12107), (125, 12254), (127, 12293), (129, 12320), (134, 12413), (142, 12551), (143, 12557), (144, 12593), (145, 12605), (148, 12677), (151, 12776), (166, 13070), (169, 13112), (172, 13145), (173, 13151), (182, 13235), (184, 13262), (192, 13349), (194, 13394), (202, 13556), (204, 13586), (205, 13589), (210, 13628), (212, 13709), (213, 13739), (214, 13748), (220, 13796), (223, 13823), (226, 13886), (230, 13955), (236, 14003), (238, 14021), (241, 14054), (244, 14099), (245, 14111), (246, 14120),

(248, 14156), (253, 14255), (255, 14300), (258, 14339), (259, 14375), (262, 14405), (266, 14465), (268, 14507), (269, 14516), (272, 14552), (273, 14585), (276, 14651), (277, 14663), (280, 14741), (282, 14774), (284, 14918), (285, 15062), (286, 15068), (287, 15197), (288, 15212), (289, 15269), (290, 15401), (291, 15440), (292, 15464), (293, 15554), (294, 15620), (295, 15644), (296, 15770), (297, 15839), (298, 15884), (299, 15893), (300, 15920), (301, 15953), (304, 15980), (305, 15992), (306, 16001), (308, 16025), (309, 16031), (314, 16070), (315, 16127), (317, 16154), (319, 16175), (320, 16187), (322, 16199), (324, 16235), (326, 16265), (327, 16283), (330, 16343), (334, 16388), (335, 16397), (344, 16517), (348, 16571), (352, 16637), (360, 16733), (362, 16787), (363, 16796), (366, 16823), (371, 16874), (373, 16910), (378, 17036), (383, 17111), (388, 17141), (396, 17333), (397, 17342), (400, 17420), (404, 17600), (411, 17690), (413, 17804), (415, 17861), (416, 17870), (417, 17891), (420, 17927), (424, 18062), (425, 18068), (426, 18110), (427, 18116), (428, 18122),

Gene: WelcomeAyanna\_16 Start: 10539, Stop: 16982, Start Num: 7

Candidate Starts for WelcomeAyanna\_16:

(Start: 7 @10539 has 46 MA's), (Start: 13 @10635 has 1 MA's), (17, 10677), (23, 10797), (Start: 25 @10815 has 1 MA's), (28, 10866), (29, 10887), (30, 10899), (41, 11055), (43, 11076), (46, 11121), (51, 11181), (52, 11187), (57, 11280), (60, 11325), (61, 11346), (62, 11352), (63, 11385), (71, 11508), (72, 11511), (77, 11631), (84, 11724), (85, 11727), (87, 11790), (93, 11823), (95, 11841), (104, 11886), (111, 11928), (113, 11949), (114, 11970), (115, 11976), (116, 11979), (117, 12003), (119, 12012), (124, 12183), (139, 12399), (142, 12435), (143, 12441), (144, 12477), (145, 12489), (150, 12636), (156, 12795), (160, 12858), (164, 12936), (165, 12951), (173, 13035), (179, 13092), (183, 13134), (188, 13179), (189, 13182), (198, 13344), (202, 13440), (204, 13470), (205, 13473), (210, 13512), (213, 13623), (214, 13632), (223, 13707), (226, 13770), (230, 13839), (234, 13881), (238, 13905), (241, 13938), (244, 13983), (246, 14004), (247, 14028), (248, 14040), (253, 14139), (255, 14184), (258, 14223), (260, 14262), (262, 14289), (266, 14349), (269, 14400), (273, 14469), (275, 14493), (276, 14535), (277, 14547), (280, 14625), (282, 14658), (304, 14808), (305, 14820), (306, 14829), (308, 14853), (309, 14859), (314, 14901), (315, 14958), (317, 14985), (319, 15006), (322, 15030), (324, 15066), (326, 15102), (327, 15120), (330, 15180), (334, 15225), (340, 15282), (344, 15354), (348, 15408), (352, 15474), (356, 15540), (360, 15570), (361, 15576), (368, 15669), (374, 15801), (378, 15870), (382, 15918), (397, 16194), (398, 16215), (400, 16272), (401, 16287), (404, 16455), (405, 16461), (406, 16473), (407, 16488), (408, 16500), (411, 16545), (413, 16659), (415, 16716), (417, 16746), (419, 16764), (423, 16911), (424, 16917), (425, 16923), (426, 16965), (427, 16971),

Gene: WinkNick\_18 Start: 10075, Stop: 16488, Start Num: 7

Candidate Starts for WinkNick\_18:

(Start: 7 @10075 has 46 MA's), (Start: 13 @10171 has 1 MA's), (17, 10213), (24, 10339), (Start: 25 @10351 has 1 MA's), (39, 10579), (43, 10612), (46, 10657), (51, 10717), (52, 10723), (57, 10816), (60, 10861), (61, 10882), (62, 10888), (63, 10921), (64, 10936), (71, 11044), (72, 11047), (76, 11164), (77, 11167), (84, 11260), (88, 11332), (93, 11359), (95, 11377), (104, 11422), (114, 11506), (115, 11512), (116, 11515), (117, 11539), (124, 11719), (128, 11752), (142, 11971), (143, 11977), (144, 12013), (145, 12025), (149, 12166), (156, 12331), (161, 12412), (165, 12487), (169, 12532), (172, 12565), (173, 12571), (175, 12604), (184, 12682), (192, 12769), (194, 12814), (195, 12820), (202, 12976), (204, 13006), (205, 13009), (207, 13024), (210, 13048), (211, 13090), (212, 13126), (213, 13156), (214, 13165), (220, 13213), (223, 13240), (226, 13303), (230, 13372), (236, 13420), (238, 13438), (240, 13465), (241, 13471), (244, 13516), (245, 13528), (246, 13537), (248, 13573), (253, 13672), (255, 13717), (256, 13729), (258, 13756), (259, 13792), (262, 13822), (266, 13882), (268, 13924), (269, 13933), (270, 13942), (272, 13969), (273, 14002), (276, 14068), (277, 14080), (280, 14158), (282, 14191), (305, 14353), (306, 14362), (308, 14386), (309, 14392), (314, 14431), (315, 14488), (317, 14515), (319, 14536), (320, 14548), (322, 14560), (324, 14596), (326, 14626), (327, 14644), (330, 14704), (334, 14749), (335, 14758), (344, 14878), (348, 14932), (352, 14998), (360, 15094), (362, 15148), (363, 15157), (366, 15184), (371, 15235), (373, 15271), (378, 15397), (383, 15472), (388, 15502), (396, 15694), (397, 15703), (400, 15781), (404, 15961), (411, 16051), (413, 16165), (415, 16222), (416, 16231), (417, 16252), (420, 16288), (424, 16423), (425, 16429), (426, 16471),

(427, 16477), (428, 16483),

Gene: Yeezy\_18 Start: 9966, Stop: 16295, Start Num: 13

Candidate Starts for Yeezy\_18:

(Start: 7 @9870 has 46 MA's), (Start: 13 @9966 has 1 MA's), (17, 10008), (23, 10128), (Start: 25 @10146 has 1 MA's), (28, 10197), (29, 10218), (30, 10230), (41, 10386), (43, 10407), (46, 10452), (51, 10512), (52, 10518), (57, 10611), (60, 10656), (62, 10683), (63, 10716), (71, 10839), (72, 10842), (77, 10962), (79, 10992), (87, 11121), (90, 11142), (93, 11154), (104, 11217), (111, 11259), (113, 11280), (114, 11301), (115, 11307), (116, 11310), (117, 11334), (119, 11343), (124, 11514), (139, 11730), (142, 11766), (143, 11772), (144, 11808), (145, 11820), (156, 12126), (160, 12189), (161, 12207), (165, 12282), (173, 12366), (179, 12423), (183, 12465), (184, 12477), (188, 12510), (189, 12513), (192, 12564), (198, 12675), (202, 12771), (204, 12801), (205, 12804), (207, 12819), (210, 12843), (213, 12954), (214, 12963), (216, 12969), (223, 13038), (226, 13101), (229, 13155), (230, 13170), (234, 13212), (238, 13236), (241, 13269), (244, 13314), (248, 13371), (252, 13446), (253, 13470), (255, 13515), (258, 13554), (260, 13593), (262, 13620), (266, 13680), (269, 13731), (272, 13767), (273, 13800), (276, 13866), (277, 13878), (279, 13902), (280, 13956), (282, 13989), (304, 14139), (305, 14151), (306, 14160), (307, 14181), (308, 14184), (309, 14190), (313, 14220), (314, 14232), (315, 14289), (317, 14316), (318, 14325), (319, 14337), (320, 14349), (322, 14361), (324, 14397), (326, 14430), (327, 14448), (330, 14508), (334, 14553), (337, 14571), (344, 14682), (348, 14736), (352, 14802), (354, 14811), (356, 14868), (361, 14904), (371, 15030), (373, 15066), (378, 15192), (379, 15195), (397, 15510), (398, 15531), (399, 15549), (400, 15588), (401, 15603), (404, 15768), (406, 15786), (407, 15801), (408, 15813), (411, 15858), (412, 15882), (413, 15972), (414, 16011), (415, 16029), (416, 16038), (417, 16059), (418, 16062), (420, 16095), (421, 16152), (423, 16224), (425, 16236), (426, 16278), (427, 16284),

Gene: Zameen\_17 Start: 10512, Stop: 16949, Start Num: 7

Candidate Starts for Zameen\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (24, 10776), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (75, 11547), (77, 11604), (79, 11634), (85, 11700), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901), (113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156), (139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831), (161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152), (189, 13155), (192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (210, 13485), (213, 13596), (214, 13605), (223, 13680), (226, 13743), (229, 13797), (230, 13812), (234, 13854), (238, 13878), (239, 13896), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (252, 14088), (253, 14112), (255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409), (273, 14442), (275, 14466), (276, 14508), (277, 14520), (280, 14598), (282, 14631), (304, 14781), (305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874), (315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003), (324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378), (352, 15444), (356, 15510), (360, 15540), (361, 15546), (363, 15600), (368, 15645), (374, 15774), (378, 15843), (397, 16164), (398, 16185), (400, 16242), (401, 16257), (404, 16422), (405, 16428), (406, 16440), (407, 16455), (408, 16467), (409, 16479), (411, 16512), (412, 16536), (413, 16626), (414, 16665), (415, 16683), (416, 16692), (417, 16713), (418, 16716), (421, 16806), (423, 16878), (425, 16890), (426, 16932), (427, 16938),

Gene: Zirinka\_17 Start: 10512, Stop: 16952, Start Num: 7

Candidate Starts for Zirinka\_17:

(Start: 7 @10512 has 46 MA's), (Start: 13 @10608 has 1 MA's), (17, 10650), (23, 10770), (Start: 25 @10788 has 1 MA's), (28, 10839), (29, 10860), (30, 10872), (41, 11028), (43, 11049), (46, 11094), (51, 11154), (52, 11160), (57, 11253), (60, 11298), (62, 11325), (63, 11358), (71, 11481), (72, 11484), (77,

11604), (79, 11634), (87, 11763), (90, 11784), (93, 11796), (95, 11814), (104, 11859), (111, 11901),  
(113, 11922), (114, 11943), (115, 11949), (116, 11952), (117, 11976), (119, 11985), (124, 12156),  
(139, 12372), (142, 12408), (143, 12414), (144, 12450), (145, 12462), (156, 12768), (160, 12831),  
(161, 12849), (165, 12924), (173, 13008), (179, 13065), (183, 13107), (184, 13119), (188, 13152),  
(192, 13206), (198, 13317), (202, 13413), (204, 13443), (205, 13446), (207, 13461), (210, 13485),  
(213, 13596), (214, 13605), (216, 13611), (217, 13644), (223, 13680), (226, 13743), (234, 13854),  
(238, 13878), (241, 13911), (244, 13956), (247, 14001), (248, 14013), (250, 14079), (253, 14112),  
(255, 14157), (258, 14196), (260, 14235), (262, 14262), (266, 14322), (269, 14373), (272, 14409),  
(273, 14442), (275, 14466), (276, 14508), (279, 14544), (280, 14598), (282, 14631), (304, 14781),  
(305, 14793), (306, 14802), (307, 14823), (308, 14826), (309, 14832), (313, 14862), (314, 14874),  
(315, 14931), (316, 14943), (317, 14958), (318, 14967), (319, 14979), (320, 14991), (322, 15003),  
(324, 15039), (326, 15072), (327, 15090), (330, 15150), (334, 15195), (344, 15324), (348, 15378),  
(352, 15444), (354, 15453), (356, 15510), (361, 15546), (363, 15600), (368, 15645), (374, 15777),  
(378, 15846), (397, 16167), (398, 16188), (399, 16206), (400, 16245), (401, 16260), (404, 16425),  
(406, 16443), (407, 16458), (408, 16470), (409, 16482), (411, 16515), (412, 16539), (413, 16629),  
(415, 16686), (416, 16695), (417, 16716), (421, 16809), (423, 16881), (425, 16893), (426, 16935),  
(427, 16941),