

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 311684 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311684 has 51 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Amo99_57, Jollymon_56, ColdSoup_57
- Track 2 : Makar_57
- Track 3 : Sting_55
- Track 4 : Purplicious_55
- Track 5 : Clawz_56
- Track 6 : KingstonB_54
- Track 7 : DonTron_56
- Track 8 : Stillion_56
- Track 9 : Soos_52
- Track 10 : Grumio_56
- Track 11 : Wocket_18
- Track 12 : Malachai_18, Begonia_18
- Track 13 : Soilmate_17, CarolAnn_17
- Track 14 : MissRona_19, Gambino_19, Blueberry_19, Azula_19
- Track 15 : Blino_17
- Track 16 : Wisp_16
- Track 17 : Fenry_16
- Track 18 : Zilla_17
- Track 19 : Frokostdame_17
- Track 20 : Samba_17
- Track 21 : Malisha_19
- Track 22 : Budski_18
- Track 23 : Periwinkle_20
- Track 24 : Lutum_18, Kenna_17
- Track 25 : BENtherdunthat_18, Asapag_18, BotCity_18
- Track 26 : Frickyeah_18
- Track 27 : Kamaru_18, Holliday_18
- Track 28 : Whitney_19
- Track 29 : LitninMcQueen_18, Phabuloso_18
- Track 30 : CheeseTouch_18
- Track 31 : Leroy_18
- Track 32 : Horus_18
- Track 33 : Getalong_19
- Track 34 : Phistory_19
- Track 35 : ShawBrad_18
- Track 36 : Spooky_18
- Track 37 : Squiddly_20

- Track 38 : Malibo_18
- Track 39 : BFK20_ORF15

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

The start number called the most often in the published annotations is 1, it was called in 12 of the 40 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Azula_19, Begonia_18, Blino_17, Blueberry_19, CarolAnn_17, Fenry_16, Gambino_19, Malachai_18, MissRona_19, Samba_17, Soilmate_17, Wocket_18, Zilla_17,

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

- Frokostdame_17, Wisp_16,

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

- Amo99_57, Asapag_18, BENtherdunthat_18, BFK20_ORF15, BotCity_18, Budski_18, CheeseTouch_18, Clawz_56, ColdSoup_57, DonTron_56, Frickyeah_18, Getalong_19, Grumio_56, Holliday_18, Horus_18, Jollymon_56, Kamaru_18, Kenna_17, KingstonB_54, Leroy_18, LitninMcQueen_18, Lutum_18, Makar_57, Malibo_18, Malisha_19, Periwinkle_20, Phabuloso_18, Phistory_19, Purplicious_55, ShawBrad_18, Soos_52, Spooky_18, Squiddly_20, Stillion_56, Sting_55, Whitney_19,

Summary by start number:

Start 1:

- Found in 15 of 51 (29.4%) of genes in pham
- Manual Annotations of this start: 12 of 40
- Called 86.7% of time when present
- Phage (with cluster) where this start called: Azula_19 (CV), Begonia_18 (CV), Blino_17 (CV), Blueberry_19 (CV), CarolAnn_17 (CV), Fenry_16 (CV), Gambino_19 (CV), Malachai_18 (CV), MissRona_19 (CV), Samba_17 (CV), Soilmate_17 (CV), Wocket_18 (CV), Zilla_17 (CV),

Start 3:

- Found in 13 of 51 (25.5%) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Frokostdame_17 (CV),

Start 6:

- Found in 15 of 51 (29.4%) of genes in pham
- No Manual Annotations of this start.
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Wisp_16 (CV),

Start 11:

- Found in 1 of 51 (2.0%) of genes in pham

- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phistory_19 (DN1),

Start 12:

- Found in 1 of 51 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Periwinkle_20 (DN1),

Start 13:

- Found in 15 of 51 (29.4%) of genes in pham
- Manual Annotations of this start: 11 of 40
- Called 73.3% of time when present
- Phage (with cluster) where this start called: Asapag_18 (DN1), BENtherdunthat_18 (DN1), BotCity_18 (DN), CheeseTouch_18 (DN1), Holliday_18 (DN1), Kamaru_18 (DN1), Kenna_17 (DN1), Leroy_18 (DN1), LitninMcQueen_18 (DN1), Lutum_18 (DN1), Phabuloso_18 (DN1),

Start 14:

- Found in 5 of 51 (9.8%) of genes in pham
- Manual Annotations of this start: 5 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Getalong_19 (DN1), Malisha_19 (DN), Spooky_18 (DN2), Squiddly_20 (DN2), Whitney_19 (DN1),

Start 18:

- Found in 22 of 51 (43.1%) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 13.6% of time when present
- Phage (with cluster) where this start called: Frickyeah_18 (DN1), Horus_18 (DN1), ShawBrad_18 (DN1),

Start 25:

- Found in 20 of 51 (39.2%) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 5.0% of time when present
- Phage (with cluster) where this start called: Budski_18 (DN),

Start 42:

- Found in 1 of 51 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Malibo_18 (DW),

Start 45:

- Found in 12 of 51 (23.5%) of genes in pham
- Manual Annotations of this start: 6 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amo99_57 (CP), Clawz_56 (CP), ColdSoup_57 (CP), DonTron_56 (CP), Grumio_56 (CP), Jollymon_56 (CP), KingstonB_54 (CP), Makar_57 (CP), Purplicious_55 (CP), Soos_52 (CP), Stillion_56 (CP), Sting_55 (CP),

Start 65:

- Found in 1 of 51 (2.0%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BFK20_ORF15 (singleton),

Summary by clusters:

There are 7 clusters represented in this pham: DN, singleton, DN1, DN2, DW, CP, CV,

Info for manual annotations of cluster CP:

- Start number 45 was manually annotated 6 times for cluster CP.

Info for manual annotations of cluster CV:

- Start number 1 was manually annotated 12 times for cluster CV.
- Start number 3 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster DN:

- Start number 13 was manually annotated 1 time for cluster DN.
- Start number 14 was manually annotated 1 time for cluster DN.
- Start number 25 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 11 was manually annotated 1 time for cluster DN1.
- Start number 12 was manually annotated 1 time for cluster DN1.
- Start number 13 was manually annotated 10 times for cluster DN1.
- Start number 14 was manually annotated 2 times for cluster DN1.
- Start number 18 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 14 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DW:

- Start number 42 was manually annotated 1 time for cluster DW.

Gene Information:

Gene: Amo99_57 Start: 30971, Stop: 36160, Start Num: 45

Candidate Starts for Amo99_57:

(Start: 45 @30971 has 6 MA's), (62, 31091), (68, 31223), (82, 31430), (84, 31460), (100, 31655), (103, 31676), (104, 31697), (110, 31808), (112, 31823), (114, 31835), (117, 31865), (129, 31979), (131, 31991), (140, 32039), (143, 32072), (145, 32084), (153, 32159), (154, 32171), (156, 32195), (160, 32219), (162, 32231), (169, 32288), (176, 32357), (183, 32426), (188, 32450), (189, 32459), (194, 32495), (197, 32516), (198, 32522), (207, 32552), (212, 32582), (228, 32696), (231, 32726), (232, 32729), (245, 32849), (268, 33053), (276, 33128), (283, 33194), (292, 33263), (300, 33326), (309, 33380), (316, 33449), (319, 33497), (321, 33512), (322, 33539), (323, 33548), (325, 33572), (328, 33611), (334, 33659), (352, 33842), (354, 33854), (360, 33902), (361, 33941), (370, 34052), (373, 34088), (380, 34172), (383, 34190), (386, 34223), (387, 34241), (390, 34277), (391, 34286), (392, 34289), (393, 34310), (394, 34331), (396, 34346), (398, 34358), (400, 34367), (411, 34466), (413,

34487), (414, 34505), (415, 34511), (417, 34523), (420, 34550), (425, 34616), (429, 34661), (433, 34706), (437, 34745), (443, 34802), (449, 34829), (451, 34841), (462, 34928), (464, 34946), (467, 34967), (472, 35072), (474, 35093), (477, 35138), (490, 35249), (493, 35285), (495, 35333), (497, 35402), (502, 35447), (503, 35450), (505, 35492), (506, 35498), (507, 35507), (508, 35510), (512, 35555), (522, 35732), (526, 35771), (535, 35861), (540, 35912), (543, 35948), (544, 35963), (546, 35987), (548, 35996), (555, 36077), (556, 36080), (557, 36083), (558, 36131),

Gene: Asapag_18 Start: 9881, Stop: 15508, Start Num: 13

Candidate Starts for Asapag_18:

(Start: 13 @9881 has 11 MA's), (Start: 18 @9926 has 1 MA's), (19, 9947), (21, 9968), (24, 10013), (Start: 25 @10028 has 1 MA's), (27, 10112), (29, 10154), (30, 10166), (35, 10229), (36, 10244), (38, 10253), (39, 10271), (40, 10277), (44, 10325), (61, 10460), (70, 10610), (73, 10640), (94, 10964), (101, 11060), (106, 11168), (109, 11210), (110, 11213), (111, 11219), (113, 11240), (121, 11321), (127, 11387), (130, 11414), (133, 11426), (135, 11444), (137, 11456), (141, 11480), (142, 11492), (146, 11531), (147, 11534), (148, 11543), (150, 11573), (164, 11678), (165, 11693), (170, 11723), (172, 11735), (176, 11780), (177, 11786), (179, 11801), (182, 11831), (184, 11852), (185, 11855), (194, 11918), (200, 11945), (201, 11948), (202, 11951), (204, 11957), (209, 11981), (210, 11984), (211, 11990), (212, 11996), (215, 12011), (218, 12029), (223, 12074), (235, 12158), (236, 12164), (239, 12191), (247, 12284), (248, 12293), (256, 12350), (257, 12362), (259, 12398), (261, 12404), (266, 12446), (267, 12458), (269, 12497), (270, 12503), (271, 12506), (272, 12524), (273, 12527), (274, 12530), (277, 12554), (285, 12629), (291, 12668), (294, 12692), (297, 12725), (312, 12836), (315, 12869), (320, 12932), (322, 12968), (324, 12998), (332, 13076), (333, 13079), (334, 13088), (337, 13112), (345, 13193), (347, 13199), (349, 13244), (350, 13247), (351, 13262), (356, 13307), (357, 13316), (358, 13325), (359, 13328), (363, 13433), (368, 13481), (369, 13484), (370, 13487), (374, 13586), (375, 13589), (378, 13601), (390, 13718), (393, 13751), (399, 13802), (404, 13832), (408, 13892), (418, 13973), (421, 13994), (424, 14027), (430, 14099), (431, 14108), (440, 14222), (448, 14252), (450, 14261), (453, 14300), (454, 14303), (459, 14333), (461, 14354), (476, 14552), (484, 14615), (485, 14621), (489, 14672), (501, 14858), (510, 14945), (512, 14972), (513, 14975), (516, 15050), (519, 15074), (520, 15113), (523, 15149), (525, 15170), (532, 15257), (538, 15299), (539, 15332), (541, 15344), (549, 15422), (554, 15488),

Gene: Azula_19 Start: 10619, Stop: 16108, Start Num: 1

Candidate Starts for Azula_19:

(Start: 1 @10619 has 12 MA's), (Start: 3 @10634 has 1 MA's), (4, 10640), (6, 10670), (7, 10679), (8, 10682), (10, 10724), (22, 10835), (23, 10856), (26, 10976), (28, 11018), (34, 11084), (35, 11102), (37, 11123), (38, 11126), (39, 11144), (41, 11168), (51, 11252), (55, 11294), (57, 11309), (58, 11318), (71, 11486), (73, 11513), (77, 11630), (91, 11801), (94, 11831), (106, 12035), (110, 12080), (113, 12107), (115, 12119), (116, 12131), (124, 12209), (127, 12254), (130, 12281), (135, 12311), (146, 12398), (147, 12401), (150, 12440), (158, 12503), (159, 12512), (165, 12560), (172, 12602), (176, 12647), (177, 12653), (179, 12668), (185, 12722), (191, 12761), (193, 12782), (194, 12785), (196, 12803), (205, 12830), (210, 12851), (211, 12857), (215, 12878), (218, 12896), (219, 12905), (249, 13178), (261, 13232), (273, 13262), (274, 13265), (280, 13316), (289, 13397), (290, 13400), (295, 13433), (297, 13463), (301, 13487), (315, 13553), (341, 13820), (347, 13868), (348, 13901), (349, 13913), (350, 13916), (356, 13976), (357, 13985), (358, 13994), (362, 14045), (365, 14117), (367, 14135), (370, 14156), (374, 14255), (375, 14258), (382, 14291), (388, 14357), (389, 14375), (390, 14390), (393, 14423), (399, 14474), (405, 14525), (412, 14594), (427, 14768), (428, 14771), (435, 14843), (436, 14846), (440, 14912), (441, 14915), (447, 14933), (460, 14993), (468, 15050), (469, 15068), (478, 15149), (479, 15152), (482, 15167), (496, 15338), (500, 15392), (507, 15464), (509, 15473), (512, 15509), (515, 15569), (516, 15587), (518, 15605), (520, 15650), (522, 15683), (533, 15794), (539, 15863), (545, 15926), (547, 15944), (559, 16094),

Gene: BENtherdunthat_18 Start: 9881, Stop: 15508, Start Num: 13

Candidate Starts for BENtherdunthat_18:

(Start: 13 @9881 has 11 MA's), (Start: 18 @9926 has 1 MA's), (19, 9947), (21, 9968), (24, 10013), (Start: 25 @10028 has 1 MA's), (27, 10112), (29, 10154), (30, 10166), (35, 10229), (36, 10244), (38, 10253), (39, 10271), (40, 10277), (44, 10325), (61, 10460), (70, 10610), (73, 10640), (94, 10964), (101, 11060), (106, 11168), (109, 11210), (110, 11213), (111, 11219), (113, 11240), (121, 11321), (127, 11387), (130, 11414), (133, 11426), (135, 11444), (137, 11456), (141, 11480), (142, 11492), (146, 11531), (147, 11534), (148, 11543), (150, 11573), (164, 11678), (165, 11693), (170, 11723), (172, 11735), (176, 11780), (177, 11786), (179, 11801), (182, 11831), (184, 11852), (185, 11855), (194, 11918), (200, 11945), (201, 11948), (202, 11951), (204, 11957), (209, 11981), (210, 11984), (211, 11990), (212, 11996), (215, 12011), (218, 12029), (223, 12074), (235, 12158), (236, 12164), (239, 12191), (247, 12284), (248, 12293), (256, 12350), (257, 12362), (259, 12398), (261, 12404), (266, 12446), (267, 12458), (269, 12497), (270, 12503), (271, 12506), (272, 12524), (273, 12527), (274, 12530), (277, 12554), (285, 12629), (291, 12668), (294, 12692), (297, 12725), (312, 12836), (315, 12869), (320, 12932), (322, 12968), (324, 12998), (332, 13076), (333, 13079), (334, 13088), (337, 13112), (345, 13193), (347, 13199), (349, 13244), (350, 13247), (351, 13262), (356, 13307), (357, 13316), (358, 13325), (359, 13328), (363, 13433), (368, 13481), (369, 13484), (370, 13487), (374, 13586), (375, 13589), (378, 13601), (390, 13718), (393, 13751), (399, 13802), (404, 13832), (408, 13892), (418, 13973), (421, 13994), (424, 14027), (430, 14099), (431, 14108), (440, 14222), (448, 14252), (450, 14261), (453, 14300), (454, 14303), (459, 14333), (461, 14354), (476, 14552), (484, 14615), (485, 14621), (489, 14672), (501, 14858), (510, 14945), (512, 14972), (513, 14975), (516, 15050), (519, 15074), (520, 15113), (523, 15149), (525, 15170), (532, 15257), (538, 15299), (539, 15332), (541, 15344), (549, 15422), (554, 15488),

Gene: BFK20_ORF15 Start: 9713, Stop: 14527, Start Num: 65

Candidate Starts for BFK20_ORF15:

(65, 9713), (67, 9740), (73, 9836), (75, 9890), (77, 9965), (97, 10205), (102, 10259), (106, 10364), (127, 10583), (128, 10595), (132, 10616), (154, 10787), (161, 10841), (167, 10886), (171, 10916), (174, 10955), (181, 11006), (185, 11036), (192, 11078), (200, 11126), (206, 11150), (210, 11165), (222, 11240), (236, 11336), (240, 11366), (241, 11378), (278, 11684), (281, 11702), (286, 11741), (297, 11837), (302, 11879), (304, 11888), (306, 11906), (313, 11966), (316, 11990), (318, 12041), (326, 12131), (329, 12164), (331, 12176), (338, 12239), (340, 12266), (353, 12377), (355, 12395), (364, 12533), (366, 12548), (371, 12584), (381, 12692), (395, 12845), (401, 12881), (403, 12893), (404, 12905), (405, 12920), (407, 12962), (410, 12974), (417, 13034), (419, 13058), (426, 13130), (442, 13307), (445, 13319), (446, 13322), (452, 13349), (457, 13373), (463, 13430), (466, 13457), (472, 13544), (475, 13574), (486, 13670), (488, 13688), (490, 13712), (491, 13724), (494, 13772), (499, 13874), (504, 13934), (515, 14057), (522, 14159), (527, 14198), (529, 14231), (530, 14249), (536, 14303), (542, 14378), (551, 14474), (555, 14516), (557, 14522),

Gene: Begonia_18 Start: 10785, Stop: 16274, Start Num: 1

Candidate Starts for Begonia_18:

(Start: 1 @10785 has 12 MA's), (5, 10824), (6, 10836), (7, 10845), (8, 10848), (10, 10890), (22, 11001), (23, 11022), (26, 11142), (28, 11184), (34, 11250), (35, 11268), (36, 11283), (37, 11289), (38, 11292), (39, 11310), (41, 11334), (51, 11418), (55, 11460), (57, 11475), (58, 11484), (71, 11652), (73, 11679), (76, 11754), (77, 11796), (81, 11844), (91, 11967), (94, 11997), (106, 12201), (110, 12246), (113, 12273), (115, 12285), (124, 12375), (127, 12420), (130, 12447), (135, 12477), (146, 12564), (150, 12606), (165, 12726), (172, 12768), (176, 12813), (177, 12819), (178, 12831), (179, 12834), (185, 12888), (191, 12927), (193, 12948), (194, 12951), (196, 12969), (205, 12996), (211, 13023), (215, 13044), (219, 13071), (229, 13143), (249, 13344), (253, 13359), (256, 13383), (261, 13398), (273, 13428), (274, 13431), (280, 13482), (289, 13563), (290, 13566), (295, 13599), (297, 13629), (301, 13653), (315, 13719), (341, 13986), (347, 14034), (349, 14079), (350, 14082), (351, 14097), (356, 14142), (357, 14151), (358, 14160), (362, 14211), (365, 14283), (367, 14301), (370, 14322), (374, 14421), (375, 14424), (382, 14457), (388, 14523), (389, 14541), (390, 14556), (393, 14589), (399, 14640), (405, 14691), (427, 14934), (428, 14937), (436, 15012), (440, 15078), (441, 15081), (447, 15099), (460, 15159), (478, 15315), (479, 15318), (482, 15333), (500, 15552), (505, 15609), (507,

15624), (512, 15672), (514, 15717), (521, 15837), (522, 15846), (526, 15885), (533, 15957), (539, 16026), (541, 16038), (545, 16089), (547, 16107), (553, 16164), (559, 16257),

Gene: Blino_17 Start: 10173, Stop: 15764, Start Num: 1

Candidate Starts for Blino_17:

(Start: 1 @10173 has 12 MA's), (Start: 3 @10188 has 1 MA's), (6, 10224), (7, 10233), (8, 10236), (10, 10278), (22, 10389), (23, 10410), (26, 10530), (34, 10638), (35, 10656), (37, 10677), (38, 10680), (39, 10698), (53, 10812), (55, 10848), (57, 10863), (58, 10872), (71, 11040), (73, 11067), (77, 11184), (91, 11355), (94, 11385), (106, 11589), (110, 11634), (127, 11808), (130, 11835), (135, 11865), (146, 11952), (147, 11955), (150, 11994), (158, 12057), (165, 12114), (172, 12156), (176, 12201), (177, 12207), (178, 12219), (179, 12222), (185, 12276), (191, 12315), (193, 12336), (194, 12339), (196, 12357), (205, 12384), (210, 12405), (211, 12411), (215, 12432), (219, 12459), (226, 12507), (230, 12537), (248, 12693), (250, 12717), (252, 12726), (254, 12747), (264, 12828), (273, 12924), (274, 12927), (275, 12933), (279, 12975), (280, 12978), (282, 12999), (289, 13059), (290, 13062), (295, 13095), (297, 13125), (315, 13215), (341, 13482), (347, 13530), (349, 13575), (350, 13578), (351, 13593), (356, 13638), (357, 13647), (358, 13656), (362, 13707), (365, 13779), (367, 13797), (370, 13818), (374, 13917), (375, 13920), (382, 13953), (388, 14019), (389, 14037), (390, 14052), (393, 14085), (399, 14136), (405, 14187), (409, 14235), (427, 14430), (428, 14433), (435, 14505), (436, 14508), (440, 14574), (441, 14577), (447, 14595), (460, 14655), (469, 14730), (479, 14814), (482, 14829), (500, 15042), (505, 15099), (507, 15114), (512, 15162), (514, 15207), (521, 15327), (522, 15336), (526, 15375), (533, 15447), (539, 15516), (545, 15579), (547, 15597), (553, 15654), (559, 15747),

Gene: Blueberry_19 Start: 10619, Stop: 16108, Start Num: 1

Candidate Starts for Blueberry_19:

(Start: 1 @10619 has 12 MA's), (Start: 3 @10634 has 1 MA's), (4, 10640), (6, 10670), (7, 10679), (8, 10682), (10, 10724), (22, 10835), (23, 10856), (26, 10976), (28, 11018), (34, 11084), (35, 11102), (37, 11123), (38, 11126), (39, 11144), (41, 11168), (51, 11252), (55, 11294), (57, 11309), (58, 11318), (71, 11486), (73, 11513), (77, 11630), (91, 11801), (94, 11831), (106, 12035), (110, 12080), (113, 12107), (115, 12119), (116, 12131), (124, 12209), (127, 12254), (130, 12281), (135, 12311), (146, 12398), (147, 12401), (150, 12440), (158, 12503), (159, 12512), (165, 12560), (172, 12602), (176, 12647), (177, 12653), (179, 12668), (185, 12722), (191, 12761), (193, 12782), (194, 12785), (196, 12803), (205, 12830), (210, 12851), (211, 12857), (215, 12878), (218, 12896), (219, 12905), (249, 13178), (261, 13232), (273, 13262), (274, 13265), (280, 13316), (289, 13397), (290, 13400), (295, 13433), (297, 13463), (301, 13487), (315, 13553), (341, 13820), (347, 13868), (348, 13901), (349, 13913), (350, 13916), (356, 13976), (357, 13985), (358, 13994), (362, 14045), (365, 14117), (367, 14135), (370, 14156), (374, 14255), (375, 14258), (382, 14291), (388, 14357), (389, 14375), (390, 14390), (393, 14423), (399, 14474), (405, 14525), (412, 14594), (427, 14768), (428, 14771), (435, 14843), (436, 14846), (440, 14912), (441, 14915), (447, 14933), (460, 14993), (468, 15050), (469, 15068), (478, 15149), (479, 15152), (482, 15167), (496, 15338), (500, 15392), (507, 15464), (509, 15473), (512, 15509), (515, 15569), (516, 15587), (518, 15605), (520, 15650), (522, 15683), (533, 15794), (539, 15863), (545, 15926), (547, 15944), (559, 16094),

Gene: BotCity_18 Start: 9879, Stop: 15506, Start Num: 13

Candidate Starts for BotCity_18:

(Start: 13 @9879 has 11 MA's), (Start: 18 @9924 has 1 MA's), (19, 9945), (21, 9966), (24, 10011), (Start: 25 @10026 has 1 MA's), (27, 10110), (29, 10152), (30, 10164), (35, 10227), (36, 10242), (38, 10251), (39, 10269), (40, 10275), (44, 10323), (61, 10458), (70, 10608), (73, 10638), (94, 10962), (101, 11058), (106, 11166), (109, 11208), (110, 11211), (111, 11217), (113, 11238), (121, 11319), (127, 11385), (130, 11412), (133, 11424), (135, 11442), (137, 11454), (141, 11478), (142, 11490), (146, 11529), (147, 11532), (148, 11541), (150, 11571), (164, 11676), (165, 11691), (170, 11721), (172, 11733), (176, 11778), (177, 11784), (179, 11799), (182, 11829), (184, 11850), (185, 11853), (194, 11916), (200, 11943), (201, 11946), (202, 11949), (204, 11955), (209, 11979), (210, 11982), (211,

11988), (212, 11994), (215, 12009), (218, 12027), (223, 12072), (235, 12156), (236, 12162), (239, 12189), (247, 12282), (248, 12291), (256, 12348), (257, 12360), (259, 12396), (261, 12402), (266, 12444), (267, 12456), (269, 12495), (270, 12501), (271, 12504), (272, 12522), (273, 12525), (274, 12528), (277, 12552), (285, 12627), (291, 12666), (294, 12690), (297, 12723), (312, 12834), (315, 12867), (320, 12930), (322, 12966), (324, 12996), (332, 13074), (333, 13077), (334, 13086), (337, 13110), (345, 13191), (347, 13197), (349, 13242), (350, 13245), (351, 13260), (356, 13305), (357, 13314), (358, 13323), (359, 13326), (363, 13431), (368, 13479), (369, 13482), (370, 13485), (374, 13584), (375, 13587), (378, 13599), (390, 13716), (393, 13749), (399, 13800), (404, 13830), (408, 13890), (418, 13971), (421, 13992), (424, 14025), (430, 14097), (431, 14106), (440, 14220), (448, 14250), (450, 14259), (453, 14298), (454, 14301), (459, 14331), (461, 14352), (476, 14550), (484, 14613), (485, 14619), (489, 14670), (501, 14856), (510, 14943), (512, 14970), (513, 14973), (516, 15048), (519, 15072), (520, 15111), (523, 15147), (525, 15168), (532, 15255), (538, 15297), (539, 15330), (541, 15342), (549, 15420), (554, 15486),

Gene: Budski_18 Start: 10015, Stop: 15501, Start Num: 25

Candidate Starts for Budski_18:

(Start: 13 @9868 has 11 MA's), (17, 9895), (Start: 18 @9913 has 1 MA's), (19, 9934), (21, 9955), (24, 10000), (Start: 25 @10015 has 1 MA's), (27, 10099), (29, 10141), (30, 10153), (35, 10216), (36, 10231), (38, 10240), (39, 10258), (40, 10264), (44, 10312), (61, 10447), (70, 10597), (73, 10627), (85, 10846), (91, 10921), (94, 10951), (106, 11155), (109, 11197), (110, 11200), (111, 11206), (113, 11227), (121, 11308), (127, 11374), (130, 11401), (133, 11413), (135, 11431), (137, 11443), (141, 11467), (142, 11479), (146, 11518), (147, 11521), (148, 11530), (150, 11560), (155, 11605), (164, 11665), (165, 11680), (170, 11710), (172, 11722), (176, 11767), (177, 11773), (179, 11788), (182, 11818), (184, 11839), (185, 11842), (194, 11905), (200, 11932), (201, 11935), (202, 11938), (204, 11944), (209, 11968), (210, 11971), (211, 11977), (212, 11983), (215, 11998), (218, 12016), (229, 12097), (235, 12145), (236, 12151), (239, 12178), (256, 12337), (257, 12349), (259, 12385), (267, 12445), (269, 12484), (270, 12490), (271, 12493), (273, 12514), (274, 12517), (285, 12616), (291, 12655), (294, 12679), (297, 12712), (303, 12757), (310, 12811), (317, 12898), (320, 12919), (322, 12955), (324, 12985), (332, 13063), (333, 13066), (334, 13075), (337, 13099), (345, 13180), (347, 13186), (349, 13231), (350, 13234), (351, 13249), (356, 13294), (357, 13303), (358, 13312), (359, 13315), (363, 13420), (368, 13468), (370, 13474), (374, 13573), (375, 13576), (378, 13588), (390, 13705), (393, 13738), (399, 13789), (401, 13801), (404, 13819), (408, 13879), (418, 13960), (421, 13981), (424, 14014), (429, 14077), (431, 14095), (440, 14209), (448, 14239), (450, 14248), (453, 14287), (454, 14290), (459, 14320), (461, 14341), (471, 14494), (476, 14545), (484, 14608), (485, 14614), (489, 14665), (501, 14851), (510, 14938), (512, 14965), (513, 14968), (516, 15043), (519, 15067), (520, 15106), (523, 15142), (525, 15163), (532, 15250), (538, 15292), (539, 15325), (541, 15337), (549, 15415), (554, 15481),

Gene: CarolAnn_17 Start: 10172, Stop: 15763, Start Num: 1

Candidate Starts for CarolAnn_17:

(Start: 1 @10172 has 12 MA's), (Start: 3 @10187 has 1 MA's), (6, 10223), (7, 10232), (8, 10235), (10, 10277), (22, 10388), (23, 10409), (26, 10529), (34, 10637), (35, 10655), (37, 10676), (38, 10679), (39, 10697), (53, 10811), (55, 10847), (57, 10862), (58, 10871), (71, 11039), (73, 11066), (77, 11183), (91, 11354), (94, 11384), (106, 11588), (110, 11633), (127, 11807), (130, 11834), (135, 11864), (139, 11885), (146, 11951), (147, 11954), (150, 11993), (158, 12056), (165, 12113), (172, 12155), (176, 12200), (177, 12206), (178, 12218), (179, 12221), (185, 12275), (191, 12314), (193, 12335), (194, 12338), (196, 12356), (205, 12383), (210, 12404), (211, 12410), (215, 12431), (219, 12458), (226, 12506), (230, 12536), (248, 12692), (250, 12716), (252, 12725), (254, 12746), (264, 12827), (273, 12923), (274, 12926), (275, 12932), (279, 12974), (280, 12977), (282, 12998), (289, 13058), (290, 13061), (295, 13094), (297, 13124), (315, 13214), (341, 13481), (347, 13529), (349, 13574), (350, 13577), (351, 13592), (356, 13637), (357, 13646), (358, 13655), (362, 13706), (365, 13778), (367, 13796), (370, 13817), (374, 13916), (375, 13919), (382, 13952), (388, 14018), (389, 14036), (390, 14051), (393, 14084), (399, 14135), (405, 14186), (409, 14234), (427, 14429), (428, 14432), (435,

14504), (436, 14507), (440, 14573), (441, 14576), (447, 14594), (460, 14654), (469, 14729), (479, 14813), (482, 14828), (500, 15041), (505, 15098), (507, 15113), (512, 15161), (514, 15206), (521, 15326), (522, 15335), (526, 15374), (533, 15446), (539, 15515), (545, 15578), (547, 15596), (553, 15653), (559, 15746),

Gene: CheeseTouch_18 Start: 9868, Stop: 15501, Start Num: 13

Candidate Starts for CheeseTouch_18:

(Start: 13 @9868 has 11 MA's), (Start: 18 @9913 has 1 MA's), (19, 9934), (21, 9955), (24, 10000), (Start: 25 @10015 has 1 MA's), (27, 10099), (29, 10141), (30, 10153), (35, 10216), (36, 10231), (38, 10240), (39, 10258), (40, 10264), (44, 10312), (61, 10447), (70, 10597), (73, 10627), (91, 10921), (94, 10951), (105, 11134), (106, 11155), (110, 11200), (111, 11206), (113, 11227), (121, 11308), (127, 11374), (130, 11401), (133, 11413), (135, 11431), (137, 11443), (141, 11467), (142, 11479), (146, 11518), (148, 11530), (150, 11560), (155, 11605), (164, 11665), (165, 11680), (170, 11710), (172, 11722), (176, 11767), (177, 11773), (178, 11785), (179, 11788), (180, 11809), (184, 11839), (185, 11842), (194, 11905), (200, 11932), (201, 11935), (202, 11938), (204, 11944), (209, 11968), (210, 11971), (211, 11977), (212, 11983), (215, 11998), (218, 12016), (229, 12097), (235, 12145), (236, 12151), (239, 12178), (256, 12337), (257, 12349), (259, 12385), (261, 12391), (266, 12433), (267, 12445), (269, 12484), (270, 12490), (271, 12493), (272, 12511), (273, 12514), (274, 12517), (277, 12541), (285, 12616), (291, 12655), (294, 12679), (297, 12712), (312, 12823), (315, 12856), (320, 12919), (322, 12955), (324, 12985), (332, 13063), (333, 13066), (334, 13075), (337, 13099), (347, 13186), (349, 13231), (350, 13234), (351, 13249), (356, 13294), (357, 13303), (358, 13312), (359, 13315), (363, 13420), (368, 13468), (370, 13474), (374, 13573), (375, 13576), (378, 13588), (390, 13705), (393, 13738), (399, 13789), (404, 13819), (408, 13879), (418, 13960), (421, 13981), (422, 13984), (424, 14014), (429, 14077), (430, 14086), (431, 14095), (440, 14209), (448, 14239), (453, 14287), (454, 14290), (459, 14320), (461, 14341), (476, 14539), (484, 14602), (485, 14608), (489, 14659), (501, 14851), (510, 14938), (512, 14965), (513, 14968), (516, 15043), (519, 15067), (520, 15106), (523, 15142), (525, 15163), (532, 15250), (538, 15292), (539, 15325), (541, 15337), (549, 15415), (554, 15481),

Gene: Clawz_56 Start: 30772, Stop: 35955, Start Num: 45

Candidate Starts for Clawz_56:

(Start: 45 @30772 has 6 MA's), (62, 30892), (63, 30904), (68, 31024), (70, 31036), (88, 31294), (92, 31351), (100, 31456), (103, 31477), (104, 31498), (107, 31579), (112, 31624), (114, 31636), (117, 31666), (129, 31780), (131, 31792), (134, 31804), (140, 31840), (143, 31873), (145, 31885), (149, 31939), (153, 31960), (154, 31972), (156, 31996), (158, 32005), (160, 32020), (169, 32089), (183, 32227), (192, 32275), (193, 32293), (194, 32296), (197, 32317), (203, 32335), (207, 32353), (212, 32383), (228, 32497), (233, 32533), (234, 32548), (243, 32611), (246, 32641), (256, 32734), (269, 32854), (274, 32887), (292, 33040), (296, 33070), (298, 33094), (307, 33157), (311, 33190), (323, 33331), (327, 33388), (328, 33400), (330, 33409), (335, 33448), (342, 33529), (344, 33547), (346, 33571), (357, 33691), (373, 33880), (377, 33946), (379, 33961), (384, 34000), (385, 34003), (386, 34015), (387, 34033), (390, 34069), (392, 34081), (393, 34102), (396, 34138), (397, 34147), (400, 34159), (413, 34279), (414, 34297), (415, 34303), (417, 34315), (420, 34342), (424, 34381), (425, 34408), (429, 34453), (433, 34498), (434, 34510), (443, 34594), (449, 34621), (451, 34633), (456, 34669), (462, 34720), (464, 34738), (467, 34759), (470, 34819), (472, 34864), (473, 34876), (479, 34936), (490, 35041), (493, 35080), (495, 35128), (497, 35197), (502, 35242), (503, 35245), (505, 35287), (506, 35293), (507, 35302), (508, 35305), (512, 35350), (515, 35413), (522, 35527), (526, 35566), (528, 35581), (531, 35617), (535, 35656), (537, 35668), (540, 35707), (543, 35743), (546, 35782), (548, 35791), (555, 35872), (556, 35875),

Gene: ColdSoup_57 Start: 30971, Stop: 36160, Start Num: 45

Candidate Starts for ColdSoup_57:

(Start: 45 @30971 has 6 MA's), (62, 31091), (68, 31223), (82, 31430), (84, 31460), (100, 31655), (103, 31676), (104, 31697), (110, 31808), (112, 31823), (114, 31835), (117, 31865), (129, 31979), (131,

31991), (140, 32039), (143, 32072), (145, 32084), (153, 32159), (154, 32171), (156, 32195), (160, 32219), (162, 32231), (169, 32288), (176, 32357), (183, 32426), (188, 32450), (189, 32459), (194, 32495), (197, 32516), (198, 32522), (207, 32552), (212, 32582), (228, 32696), (231, 32726), (232, 32729), (245, 32849), (268, 33053), (276, 33128), (283, 33194), (292, 33263), (300, 33326), (309, 33380), (316, 33449), (319, 33497), (321, 33512), (322, 33539), (323, 33548), (325, 33572), (328, 33611), (334, 33659), (352, 33842), (354, 33854), (360, 33902), (361, 33941), (370, 34052), (373, 34088), (380, 34172), (383, 34190), (386, 34223), (387, 34241), (390, 34277), (391, 34286), (392, 34289), (393, 34310), (394, 34331), (396, 34346), (398, 34358), (400, 34367), (411, 34466), (413, 34487), (414, 34505), (415, 34511), (417, 34523), (420, 34550), (425, 34616), (429, 34661), (433, 34706), (437, 34745), (443, 34802), (449, 34829), (451, 34841), (462, 34928), (464, 34946), (467, 34967), (472, 35072), (474, 35093), (477, 35138), (490, 35249), (493, 35285), (495, 35333), (497, 35402), (502, 35447), (503, 35450), (505, 35492), (506, 35498), (507, 35507), (508, 35510), (512, 35555), (522, 35732), (526, 35771), (535, 35861), (540, 35912), (543, 35948), (544, 35963), (546, 35987), (548, 35996), (555, 36077), (556, 36080), (557, 36083), (558, 36131),

Gene: DonTron_56 Start: 31012, Stop: 36201, Start Num: 45

Candidate Starts for DonTron_56:

(Start: 45 @31012 has 6 MA's), (62, 31132), (68, 31264), (74, 31330), (90, 31579), (98, 31657), (100, 31696), (103, 31717), (104, 31738), (110, 31849), (112, 31864), (114, 31876), (117, 31906), (125, 31960), (129, 32020), (131, 32032), (140, 32080), (143, 32113), (145, 32125), (153, 32200), (154, 32212), (156, 32236), (160, 32260), (162, 32272), (169, 32329), (176, 32398), (183, 32467), (188, 32491), (189, 32500), (194, 32536), (197, 32557), (198, 32563), (207, 32593), (212, 32623), (228, 32737), (231, 32767), (232, 32770), (246, 32893), (268, 33094), (276, 33169), (283, 33235), (292, 33304), (299, 33361), (300, 33367), (309, 33421), (316, 33490), (319, 33538), (321, 33553), (322, 33580), (323, 33589), (325, 33613), (328, 33652), (334, 33700), (352, 33883), (354, 33895), (360, 33943), (361, 33982), (370, 34093), (373, 34129), (380, 34213), (383, 34231), (386, 34264), (387, 34282), (390, 34318), (391, 34327), (392, 34330), (393, 34351), (394, 34372), (396, 34387), (398, 34399), (400, 34408), (411, 34507), (413, 34528), (414, 34546), (415, 34552), (417, 34564), (420, 34591), (425, 34657), (429, 34702), (433, 34747), (437, 34786), (443, 34843), (449, 34870), (451, 34882), (462, 34969), (464, 34987), (467, 35008), (472, 35113), (474, 35134), (477, 35179), (490, 35290), (493, 35326), (495, 35374), (497, 35443), (502, 35488), (503, 35491), (505, 35533), (506, 35539), (507, 35548), (508, 35551), (512, 35596), (522, 35773), (526, 35812), (535, 35902), (540, 35953), (543, 35989), (544, 36004), (546, 36028), (548, 36037), (555, 36118), (556, 36121), (557, 36124), (558, 36172),

Gene: Fenry_16 Start: 10023, Stop: 15515, Start Num: 1

Candidate Starts for Fenry_16:

(Start: 1 @10023 has 12 MA's), (Start: 3 @10038 has 1 MA's), (4, 10044), (6, 10074), (7, 10083), (8, 10086), (10, 10128), (22, 10239), (23, 10260), (26, 10380), (34, 10488), (35, 10506), (36, 10521), (37, 10527), (38, 10530), (39, 10548), (41, 10572), (51, 10656), (53, 10662), (55, 10698), (57, 10713), (58, 10722), (71, 10890), (73, 10917), (85, 11130), (94, 11235), (106, 11439), (110, 11484), (113, 11511), (115, 11523), (124, 11613), (127, 11658), (130, 11685), (135, 11715), (146, 11802), (147, 11805), (150, 11844), (165, 11964), (172, 12006), (176, 12051), (177, 12057), (178, 12069), (179, 12072), (185, 12126), (191, 12165), (193, 12186), (194, 12189), (196, 12207), (210, 12255), (211, 12261), (215, 12282), (219, 12309), (229, 12381), (245, 12516), (251, 12588), (253, 12597), (255, 12609), (256, 12621), (261, 12636), (273, 12666), (274, 12669), (280, 12720), (289, 12801), (290, 12804), (295, 12837), (297, 12867), (301, 12891), (315, 12957), (336, 13173), (341, 13224), (347, 13272), (349, 13317), (350, 13320), (351, 13335), (356, 13380), (357, 13389), (358, 13398), (362, 13449), (365, 13521), (367, 13539), (370, 13560), (374, 13659), (375, 13662), (382, 13695), (388, 13761), (389, 13779), (390, 13794), (393, 13827), (399, 13878), (405, 13929), (427, 14172), (428, 14175), (435, 14247), (436, 14250), (440, 14316), (441, 14319), (447, 14337), (460, 14397), (478, 14553), (479, 14556), (482, 14571), (496, 14742), (500, 14796), (505, 14853), (507, 14868), (512, 14916), (514, 14961), (521, 15081), (522, 15090), (526, 15129), (533, 15201), (539, 15270), (541, 15282),

(545, 15333), (547, 15351), (559, 15501),

Gene: Frickyeah_18 Start: 9926, Stop: 15508, Start Num: 18

Candidate Starts for Frickyeah_18:

(Start: 13 @9881 has 11 MA's), (Start: 18 @9926 has 1 MA's), (19, 9947), (21, 9968), (24, 10013), (Start: 25 @10028 has 1 MA's), (27, 10112), (29, 10154), (30, 10166), (35, 10229), (36, 10244), (38, 10253), (39, 10271), (40, 10277), (44, 10325), (61, 10460), (70, 10610), (73, 10640), (94, 10964), (101, 11060), (106, 11168), (110, 11213), (111, 11219), (113, 11240), (121, 11321), (127, 11387), (130, 11414), (133, 11426), (135, 11444), (137, 11456), (141, 11480), (142, 11492), (146, 11531), (147, 11534), (148, 11543), (150, 11573), (155, 11618), (164, 11678), (165, 11693), (170, 11723), (172, 11735), (176, 11780), (177, 11786), (179, 11801), (182, 11831), (184, 11852), (185, 11855), (194, 11918), (200, 11945), (201, 11948), (202, 11951), (204, 11957), (209, 11981), (210, 11984), (211, 11990), (212, 11996), (215, 12011), (218, 12029), (223, 12074), (235, 12158), (236, 12164), (239, 12191), (247, 12284), (248, 12293), (256, 12350), (257, 12362), (259, 12398), (261, 12404), (266, 12446), (267, 12458), (269, 12497), (270, 12503), (271, 12506), (272, 12524), (273, 12527), (274, 12530), (277, 12554), (285, 12629), (291, 12668), (294, 12692), (297, 12725), (312, 12836), (315, 12869), (320, 12932), (322, 12968), (324, 12998), (332, 13076), (333, 13079), (334, 13088), (337, 13112), (345, 13193), (347, 13199), (349, 13244), (350, 13247), (351, 13262), (356, 13307), (357, 13316), (358, 13325), (359, 13328), (363, 13433), (368, 13481), (369, 13484), (370, 13487), (374, 13586), (375, 13589), (378, 13601), (390, 13718), (393, 13751), (399, 13802), (404, 13832), (408, 13892), (418, 13973), (421, 13994), (424, 14027), (430, 14099), (431, 14108), (440, 14222), (448, 14252), (450, 14261), (453, 14300), (454, 14303), (459, 14333), (461, 14354), (476, 14552), (484, 14615), (485, 14621), (489, 14672), (501, 14858), (510, 14945), (512, 14972), (513, 14975), (516, 15050), (519, 15074), (520, 15113), (523, 15149), (525, 15170), (532, 15257), (538, 15299), (539, 15332), (541, 15344), (549, 15422), (554, 15488),

Gene: Frokostdame_17 Start: 10288, Stop: 15762, Start Num: 3

Candidate Starts for Frokostdame_17:

(Start: 1 @10273 has 12 MA's), (2, 10285), (Start: 3 @10288 has 1 MA's), (4, 10294), (6, 10324), (7, 10333), (10, 10378), (22, 10489), (23, 10510), (26, 10630), (28, 10672), (34, 10738), (35, 10756), (37, 10777), (38, 10780), (39, 10798), (41, 10822), (51, 10906), (55, 10948), (57, 10963), (58, 10972), (71, 11140), (73, 11167), (77, 11284), (83, 11338), (85, 11380), (94, 11485), (106, 11689), (110, 11734), (111, 11740), (113, 11761), (115, 11773), (124, 11863), (127, 11908), (130, 11935), (135, 11965), (146, 12052), (147, 12055), (150, 12094), (158, 12157), (159, 12166), (165, 12214), (172, 12256), (177, 12307), (179, 12322), (185, 12376), (191, 12415), (193, 12436), (194, 12439), (196, 12457), (205, 12484), (210, 12505), (211, 12511), (215, 12532), (218, 12550), (219, 12559), (249, 12832), (255, 12859), (256, 12871), (261, 12886), (273, 12916), (274, 12919), (280, 12970), (284, 13012), (289, 13051), (290, 13054), (295, 13087), (297, 13117), (301, 13141), (315, 13207), (341, 13474), (347, 13522), (348, 13555), (349, 13567), (350, 13570), (351, 13585), (356, 13630), (357, 13639), (358, 13648), (362, 13699), (365, 13771), (367, 13789), (370, 13810), (374, 13909), (375, 13912), (382, 13945), (388, 14011), (389, 14029), (390, 14044), (393, 14077), (399, 14128), (405, 14179), (427, 14422), (428, 14425), (435, 14497), (436, 14500), (440, 14566), (441, 14569), (447, 14587), (460, 14647), (468, 14704), (469, 14722), (478, 14803), (479, 14806), (482, 14821), (496, 14992), (500, 15046), (507, 15118), (509, 15127), (512, 15163), (515, 15223), (516, 15241), (518, 15259), (520, 15304), (522, 15337), (533, 15448), (539, 15517), (545, 15580), (547, 15598), (559, 15748),

Gene: Gambino_19 Start: 10619, Stop: 16108, Start Num: 1

Candidate Starts for Gambino_19:

(Start: 1 @10619 has 12 MA's), (Start: 3 @10634 has 1 MA's), (4, 10640), (6, 10670), (7, 10679), (8, 10682), (10, 10724), (22, 10835), (23, 10856), (26, 10976), (28, 11018), (34, 11084), (35, 11102), (37, 11123), (38, 11126), (39, 11144), (41, 11168), (51, 11252), (55, 11294), (57, 11309), (58, 11318), (71, 11486), (73, 11513), (77, 11630), (91, 11801), (94, 11831), (106, 12035), (110, 12080), (113, 12107), (115, 12119), (116, 12131), (124, 12209), (127, 12254), (130, 12281), (135, 12311), (146, 12398),

(147, 12401), (150, 12440), (158, 12503), (159, 12512), (165, 12560), (172, 12602), (176, 12647), (177, 12653), (179, 12668), (185, 12722), (191, 12761), (193, 12782), (194, 12785), (196, 12803), (205, 12830), (210, 12851), (211, 12857), (215, 12878), (218, 12896), (219, 12905), (249, 13178), (261, 13232), (273, 13262), (274, 13265), (280, 13316), (289, 13397), (290, 13400), (295, 13433), (297, 13463), (301, 13487), (315, 13553), (341, 13820), (347, 13868), (348, 13901), (349, 13913), (350, 13916), (356, 13976), (357, 13985), (358, 13994), (362, 14045), (365, 14117), (367, 14135), (370, 14156), (374, 14255), (375, 14258), (382, 14291), (388, 14357), (389, 14375), (390, 14390), (393, 14423), (399, 14474), (405, 14525), (412, 14594), (427, 14768), (428, 14771), (435, 14843), (436, 14846), (440, 14912), (441, 14915), (447, 14933), (460, 14993), (468, 15050), (469, 15068), (478, 15149), (479, 15152), (482, 15167), (496, 15338), (500, 15392), (507, 15464), (509, 15473), (512, 15509), (515, 15569), (516, 15587), (518, 15605), (520, 15650), (522, 15683), (533, 15794), (539, 15863), (545, 15926), (547, 15944), (559, 16094),

Gene: Getalong_19 Start: 10672, Stop: 16305, Start Num: 14

Candidate Starts for Getalong_19:

(Start: 14 @10672 has 5 MA's), (Start: 18 @10717 has 1 MA's), (19, 10738), (21, 10759), (24, 10804), (Start: 25 @10819 has 1 MA's), (27, 10903), (29, 10945), (30, 10957), (35, 11020), (36, 11035), (38, 11044), (39, 11062), (40, 11068), (44, 11116), (61, 11251), (70, 11401), (73, 11431), (85, 11650), (91, 11725), (94, 11755), (106, 11959), (110, 12004), (111, 12010), (113, 12031), (116, 12055), (121, 12112), (127, 12178), (130, 12205), (133, 12217), (135, 12235), (137, 12247), (141, 12271), (142, 12283), (146, 12322), (147, 12325), (148, 12334), (150, 12364), (155, 12409), (164, 12469), (165, 12484), (170, 12514), (172, 12526), (176, 12571), (177, 12577), (179, 12592), (182, 12622), (184, 12643), (185, 12646), (194, 12709), (200, 12736), (201, 12739), (202, 12742), (204, 12748), (209, 12772), (210, 12775), (211, 12781), (212, 12787), (215, 12802), (218, 12820), (223, 12865), (235, 12949), (236, 12955), (239, 12982), (247, 13075), (248, 13084), (256, 13141), (257, 13153), (259, 13189), (261, 13195), (266, 13237), (267, 13249), (269, 13288), (270, 13294), (271, 13297), (272, 13315), (273, 13318), (274, 13321), (285, 13420), (291, 13459), (294, 13483), (297, 13516), (312, 13627), (315, 13660), (320, 13723), (322, 13759), (324, 13789), (332, 13867), (333, 13870), (334, 13879), (337, 13903), (347, 13990), (349, 14035), (350, 14038), (351, 14053), (356, 14098), (357, 14107), (358, 14116), (359, 14119), (363, 14224), (368, 14272), (370, 14278), (374, 14377), (375, 14380), (378, 14392), (390, 14509), (393, 14542), (399, 14593), (404, 14623), (408, 14683), (418, 14764), (421, 14785), (422, 14788), (424, 14818), (429, 14881), (430, 14890), (431, 14899), (440, 15013), (448, 15043), (453, 15091), (454, 15094), (459, 15124), (461, 15145), (476, 15343), (484, 15406), (485, 15412), (489, 15463), (501, 15655), (510, 15742), (512, 15769), (513, 15772), (516, 15847), (519, 15871), (520, 15910), (523, 15946), (525, 15967), (532, 16054), (538, 16096), (539, 16129), (541, 16141), (554, 16285),

Gene: Grumio_56 Start: 30450, Stop: 35642, Start Num: 45

Candidate Starts for Grumio_56:

(Start: 45 @30450 has 6 MA's), (62, 30570), (68, 30702), (82, 30909), (84, 30939), (100, 31134), (103, 31155), (104, 31176), (110, 31287), (112, 31302), (114, 31314), (117, 31344), (129, 31458), (131, 31470), (140, 31518), (143, 31551), (145, 31563), (153, 31638), (154, 31650), (156, 31674), (160, 31698), (169, 31767), (176, 31836), (183, 31905), (188, 31929), (189, 31938), (194, 31974), (197, 31995), (198, 32001), (207, 32031), (212, 32061), (228, 32175), (231, 32205), (232, 32208), (245, 32328), (268, 32532), (276, 32607), (283, 32673), (287, 32697), (292, 32742), (300, 32805), (309, 32859), (316, 32928), (319, 32976), (321, 32991), (322, 33018), (323, 33027), (325, 33051), (328, 33090), (334, 33138), (352, 33321), (354, 33333), (360, 33381), (361, 33420), (370, 33531), (373, 33567), (380, 33651), (383, 33669), (386, 33702), (387, 33720), (390, 33756), (391, 33765), (392, 33768), (393, 33789), (394, 33810), (396, 33825), (398, 33837), (400, 33846), (411, 33945), (413, 33966), (414, 33984), (415, 33990), (417, 34002), (420, 34029), (425, 34095), (429, 34140), (433, 34185), (434, 34197), (437, 34224), (443, 34281), (449, 34308), (451, 34320), (462, 34407), (464, 34425), (467, 34446), (472, 34551), (474, 34572), (477, 34617), (490, 34728), (493, 34764), (495, 34812), (497, 34881), (502, 34926), (503, 34929), (505, 34971), (506, 34977), (507, 34986), (508,

34989), (512, 35034), (522, 35211), (526, 35250), (535, 35340), (540, 35391), (543, 35427), (544, 35442), (546, 35466), (548, 35475), (555, 35559), (556, 35562), (557, 35565), (558, 35613),

Gene: Holliday_18 Start: 9868, Stop: 15501, Start Num: 13

Candidate Starts for Holliday_18:

(Start: 13 @9868 has 11 MA's), (17, 9895), (Start: 18 @9913 has 1 MA's), (19, 9934), (21, 9955), (24, 10000), (Start: 25 @10015 has 1 MA's), (27, 10099), (29, 10141), (30, 10153), (35, 10216), (36, 10231), (38, 10240), (39, 10258), (40, 10264), (44, 10312), (61, 10447), (70, 10597), (73, 10627), (85, 10846), (91, 10921), (94, 10951), (106, 11155), (109, 11197), (110, 11200), (111, 11206), (113, 11227), (121, 11308), (127, 11374), (130, 11401), (133, 11413), (135, 11431), (137, 11443), (141, 11467), (142, 11479), (146, 11518), (147, 11521), (148, 11530), (150, 11560), (155, 11605), (164, 11665), (165, 11680), (170, 11710), (172, 11722), (176, 11767), (177, 11773), (179, 11788), (182, 11818), (184, 11839), (185, 11842), (194, 11905), (200, 11932), (201, 11935), (202, 11938), (204, 11944), (209, 11968), (210, 11971), (211, 11977), (212, 11983), (215, 11998), (218, 12016), (229, 12097), (235, 12145), (236, 12151), (239, 12178), (256, 12337), (257, 12349), (259, 12385), (267, 12445), (269, 12484), (270, 12490), (271, 12493), (273, 12514), (274, 12517), (285, 12616), (291, 12655), (294, 12679), (297, 12712), (303, 12757), (310, 12811), (317, 12898), (320, 12919), (322, 12955), (324, 12985), (332, 13063), (333, 13066), (334, 13075), (337, 13099), (345, 13180), (347, 13186), (349, 13231), (350, 13234), (351, 13249), (356, 13294), (357, 13303), (358, 13312), (359, 13315), (363, 13420), (368, 13468), (370, 13474), (374, 13573), (375, 13576), (378, 13588), (390, 13705), (393, 13738), (399, 13789), (401, 13801), (404, 13819), (408, 13879), (418, 13960), (421, 13981), (424, 14014), (429, 14077), (431, 14095), (440, 14209), (448, 14239), (450, 14248), (453, 14287), (454, 14290), (459, 14320), (461, 14341), (471, 14494), (476, 14545), (484, 14608), (485, 14614), (489, 14665), (501, 14851), (510, 14938), (512, 14965), (513, 14968), (516, 15043), (519, 15067), (520, 15106), (523, 15142), (525, 15163), (532, 15250), (538, 15292), (539, 15325), (541, 15337), (549, 15415), (554, 15481),

Gene: Horus_18 Start: 9926, Stop: 15514, Start Num: 18

Candidate Starts for Horus_18:

(Start: 13 @9881 has 11 MA's), (Start: 18 @9926 has 1 MA's), (19, 9947), (21, 9968), (24, 10013), (Start: 25 @10028 has 1 MA's), (27, 10112), (29, 10154), (30, 10166), (35, 10229), (36, 10244), (38, 10253), (39, 10271), (40, 10277), (44, 10325), (61, 10460), (70, 10610), (73, 10640), (94, 10964), (101, 11060), (106, 11168), (109, 11210), (110, 11213), (111, 11219), (113, 11240), (121, 11321), (127, 11387), (130, 11414), (133, 11426), (135, 11444), (137, 11456), (141, 11480), (142, 11492), (146, 11531), (147, 11534), (148, 11543), (150, 11573), (164, 11678), (165, 11693), (170, 11723), (172, 11735), (176, 11780), (177, 11786), (179, 11801), (182, 11831), (184, 11852), (185, 11855), (194, 11918), (200, 11945), (201, 11948), (202, 11951), (204, 11957), (209, 11981), (210, 11984), (211, 11990), (212, 11996), (215, 12011), (218, 12029), (223, 12074), (235, 12158), (236, 12164), (239, 12191), (247, 12284), (248, 12293), (256, 12350), (257, 12362), (259, 12398), (266, 12446), (267, 12458), (269, 12497), (270, 12503), (271, 12506), (272, 12524), (273, 12527), (274, 12530), (277, 12554), (285, 12629), (294, 12692), (297, 12725), (308, 12800), (310, 12824), (312, 12836), (315, 12869), (320, 12932), (322, 12968), (324, 12998), (332, 13076), (333, 13079), (334, 13088), (347, 13199), (349, 13244), (350, 13247), (351, 13262), (356, 13307), (357, 13316), (358, 13325), (359, 13328), (363, 13433), (368, 13481), (370, 13487), (374, 13586), (375, 13589), (378, 13601), (390, 13718), (393, 13751), (399, 13802), (404, 13832), (408, 13892), (418, 13973), (421, 13994), (422, 13997), (424, 14027), (429, 14090), (430, 14099), (431, 14108), (440, 14222), (448, 14252), (453, 14300), (454, 14303), (459, 14333), (461, 14354), (476, 14552), (484, 14615), (485, 14621), (489, 14672), (501, 14864), (510, 14951), (512, 14978), (513, 14981), (516, 15056), (519, 15080), (520, 15119), (523, 15155), (525, 15176), (532, 15263), (538, 15305), (539, 15338), (541, 15350), (554, 15494),

Gene: Jollymon_56 Start: 30971, Stop: 36160, Start Num: 45

Candidate Starts for Jollymon_56:

(Start: 45 @30971 has 6 MA's), (62, 31091), (68, 31223), (82, 31430), (84, 31460), (100, 31655), (103, 31676), (104, 31697), (110, 31808), (112, 31823), (114, 31835), (117, 31865), (129, 31979), (131, 31991), (140, 32039), (143, 32072), (145, 32084), (153, 32159), (154, 32171), (156, 32195), (160, 32219), (162, 32231), (169, 32288), (176, 32357), (183, 32426), (188, 32450), (189, 32459), (194, 32495), (197, 32516), (198, 32522), (207, 32552), (212, 32582), (228, 32696), (231, 32726), (232, 32729), (245, 32849), (268, 33053), (276, 33128), (283, 33194), (292, 33263), (300, 33326), (309, 33380), (316, 33449), (319, 33497), (321, 33512), (322, 33539), (323, 33548), (325, 33572), (328, 33611), (334, 33659), (352, 33842), (354, 33854), (360, 33902), (361, 33941), (370, 34052), (373, 34088), (380, 34172), (383, 34190), (386, 34223), (387, 34241), (390, 34277), (391, 34286), (392, 34289), (393, 34310), (394, 34331), (396, 34346), (398, 34358), (400, 34367), (411, 34466), (413, 34487), (414, 34505), (415, 34511), (417, 34523), (420, 34550), (425, 34616), (429, 34661), (433, 34706), (437, 34745), (443, 34802), (449, 34829), (451, 34841), (462, 34928), (464, 34946), (467, 34967), (472, 35072), (474, 35093), (477, 35138), (490, 35249), (493, 35285), (495, 35333), (497, 35402), (502, 35447), (503, 35450), (505, 35492), (506, 35498), (507, 35507), (508, 35510), (512, 35555), (522, 35732), (526, 35771), (535, 35861), (540, 35912), (543, 35948), (544, 35963), (546, 35987), (548, 35996), (555, 36077), (556, 36080), (557, 36083), (558, 36131),

Gene: Kamaru_18 Start: 9868, Stop: 15501, Start Num: 13

Candidate Starts for Kamaru_18:

(Start: 13 @9868 has 11 MA's), (17, 9895), (Start: 18 @9913 has 1 MA's), (19, 9934), (21, 9955), (24, 10000), (Start: 25 @10015 has 1 MA's), (27, 10099), (29, 10141), (30, 10153), (35, 10216), (36, 10231), (38, 10240), (39, 10258), (40, 10264), (44, 10312), (61, 10447), (70, 10597), (73, 10627), (85, 10846), (91, 10921), (94, 10951), (106, 11155), (109, 11197), (110, 11200), (111, 11206), (113, 11227), (121, 11308), (127, 11374), (130, 11401), (133, 11413), (135, 11431), (137, 11443), (141, 11467), (142, 11479), (146, 11518), (147, 11521), (148, 11530), (150, 11560), (155, 11605), (164, 11665), (165, 11680), (170, 11710), (172, 11722), (176, 11767), (177, 11773), (179, 11788), (182, 11818), (184, 11839), (185, 11842), (194, 11905), (200, 11932), (201, 11935), (202, 11938), (204, 11944), (209, 11968), (210, 11971), (211, 11977), (212, 11983), (215, 11998), (218, 12016), (229, 12097), (235, 12145), (236, 12151), (239, 12178), (256, 12337), (257, 12349), (259, 12385), (267, 12445), (269, 12484), (270, 12490), (271, 12493), (273, 12514), (274, 12517), (285, 12616), (291, 12655), (294, 12679), (297, 12712), (303, 12757), (310, 12811), (317, 12898), (320, 12919), (322, 12955), (324, 12985), (332, 13063), (333, 13066), (334, 13075), (337, 13099), (345, 13180), (347, 13186), (349, 13231), (350, 13234), (351, 13249), (356, 13294), (357, 13303), (358, 13312), (359, 13315), (363, 13420), (368, 13468), (370, 13474), (374, 13573), (375, 13576), (378, 13588), (390, 13705), (393, 13738), (399, 13789), (401, 13801), (404, 13819), (408, 13879), (418, 13960), (421, 13981), (424, 14014), (429, 14077), (431, 14095), (440, 14209), (448, 14239), (450, 14248), (453, 14287), (454, 14290), (459, 14320), (461, 14341), (471, 14494), (476, 14545), (484, 14608), (485, 14614), (489, 14665), (501, 14851), (510, 14938), (512, 14965), (513, 14968), (516, 15043), (519, 15067), (520, 15106), (523, 15142), (525, 15163), (532, 15250), (538, 15292), (539, 15325), (541, 15337), (549, 15415), (554, 15481),

Gene: Kenna_17 Start: 9881, Stop: 15508, Start Num: 13

Candidate Starts for Kenna_17:

(Start: 13 @9881 has 11 MA's), (17, 9908), (Start: 18 @9926 has 1 MA's), (19, 9947), (21, 9968), (24, 10013), (Start: 25 @10028 has 1 MA's), (27, 10112), (29, 10154), (30, 10166), (35, 10229), (36, 10244), (38, 10253), (39, 10271), (40, 10277), (44, 10325), (61, 10460), (70, 10610), (73, 10640), (94, 10964), (101, 11060), (106, 11168), (110, 11213), (111, 11219), (113, 11240), (116, 11264), (121, 11321), (127, 11387), (130, 11414), (133, 11426), (135, 11444), (137, 11456), (141, 11480), (142, 11492), (146, 11531), (147, 11534), (148, 11543), (150, 11573), (155, 11618), (164, 11678), (165, 11693), (170, 11723), (172, 11735), (176, 11780), (177, 11786), (179, 11801), (182, 11831), (184, 11852), (185, 11855), (194, 11918), (200, 11945), (201, 11948), (202, 11951), (204, 11957), (209, 11981), (210, 11984), (211, 11990), (212, 11996), (215, 12011), (218, 12029), (223, 12074), (235, 12158), (236, 12164), (239, 12191), (247, 12284), (248, 12293), (256, 12350), (257, 12362), (259,

12398), (261, 12404), (266, 12446), (267, 12458), (269, 12497), (270, 12503), (271, 12506), (272, 12524), (273, 12527), (274, 12530), (277, 12554), (285, 12629), (291, 12668), (294, 12692), (297, 12725), (312, 12836), (315, 12869), (320, 12932), (322, 12968), (324, 12998), (332, 13076), (333, 13079), (334, 13088), (337, 13112), (345, 13193), (347, 13199), (349, 13244), (350, 13247), (351, 13262), (356, 13307), (357, 13316), (358, 13325), (359, 13328), (363, 13433), (368, 13481), (369, 13484), (370, 13487), (374, 13586), (375, 13589), (378, 13601), (390, 13718), (393, 13751), (399, 13802), (404, 13832), (408, 13892), (418, 13973), (421, 13994), (424, 14027), (430, 14099), (431, 14108), (440, 14222), (448, 14252), (450, 14261), (453, 14300), (454, 14303), (459, 14333), (461, 14354), (476, 14552), (484, 14615), (485, 14621), (489, 14672), (501, 14858), (510, 14945), (512, 14972), (513, 14975), (516, 15050), (519, 15074), (520, 15113), (523, 15149), (525, 15170), (532, 15257), (538, 15299), (539, 15332), (541, 15344), (549, 15422), (554, 15488),

Gene: KingstonB_54 Start: 30450, Stop: 35639, Start Num: 45

Candidate Starts for KingstonB_54:

(Start: 45 @30450 has 6 MA's), (62, 30570), (68, 30702), (74, 30768), (98, 31095), (100, 31134), (103, 31155), (104, 31176), (110, 31287), (112, 31302), (114, 31314), (117, 31344), (129, 31458), (131, 31470), (140, 31518), (143, 31551), (145, 31563), (153, 31638), (154, 31650), (156, 31674), (160, 31698), (162, 31710), (169, 31767), (176, 31836), (183, 31905), (188, 31929), (189, 31938), (194, 31974), (197, 31995), (198, 32001), (207, 32031), (212, 32061), (228, 32175), (231, 32205), (232, 32208), (268, 32532), (276, 32607), (283, 32673), (292, 32742), (300, 32805), (309, 32859), (316, 32928), (319, 32976), (321, 32991), (322, 33018), (323, 33027), (325, 33051), (328, 33090), (334, 33138), (352, 33321), (354, 33333), (360, 33381), (361, 33420), (370, 33531), (373, 33567), (380, 33651), (383, 33669), (386, 33702), (387, 33720), (390, 33756), (391, 33765), (392, 33768), (393, 33789), (394, 33810), (396, 33825), (398, 33837), (400, 33846), (411, 33945), (413, 33966), (414, 33984), (415, 33990), (417, 34002), (420, 34029), (425, 34095), (429, 34140), (433, 34185), (437, 34224), (443, 34281), (449, 34308), (451, 34320), (462, 34407), (464, 34425), (467, 34446), (472, 34551), (474, 34572), (477, 34617), (490, 34728), (493, 34764), (495, 34812), (497, 34881), (502, 34926), (503, 34929), (505, 34971), (506, 34977), (507, 34986), (508, 34989), (512, 35034), (522, 35211), (526, 35250), (535, 35340), (540, 35391), (543, 35427), (544, 35442), (546, 35466), (548, 35475), (555, 35556), (556, 35559), (557, 35562), (558, 35610),

Gene: Leroy_18 Start: 9882, Stop: 15515, Start Num: 13

Candidate Starts for Leroy_18:

(Start: 13 @9882 has 11 MA's), (Start: 18 @9927 has 1 MA's), (19, 9948), (21, 9969), (24, 10014), (Start: 25 @10029 has 1 MA's), (27, 10113), (29, 10155), (30, 10167), (35, 10230), (36, 10245), (38, 10254), (39, 10272), (40, 10278), (44, 10326), (61, 10461), (70, 10611), (73, 10641), (91, 10935), (94, 10965), (106, 11169), (109, 11211), (110, 11214), (111, 11220), (113, 11241), (116, 11265), (121, 11322), (127, 11388), (130, 11415), (133, 11427), (135, 11445), (137, 11457), (141, 11481), (142, 11493), (146, 11532), (147, 11535), (148, 11544), (150, 11574), (152, 11580), (164, 11679), (165, 11694), (170, 11724), (172, 11736), (176, 11781), (177, 11787), (179, 11802), (182, 11832), (184, 11853), (185, 11856), (194, 11919), (200, 11946), (202, 11952), (209, 11982), (210, 11985), (211, 11991), (212, 11997), (215, 12012), (218, 12030), (229, 12111), (235, 12159), (236, 12165), (237, 12180), (239, 12192), (256, 12351), (257, 12363), (259, 12399), (261, 12405), (267, 12459), (269, 12498), (270, 12504), (271, 12507), (272, 12525), (273, 12528), (274, 12531), (277, 12555), (285, 12630), (294, 12693), (297, 12726), (303, 12771), (310, 12825), (312, 12837), (317, 12912), (320, 12933), (322, 12969), (324, 12999), (333, 13080), (334, 13089), (337, 13113), (347, 13200), (349, 13245), (350, 13248), (356, 13308), (357, 13317), (358, 13326), (363, 13434), (368, 13482), (370, 13488), (374, 13587), (375, 13590), (378, 13602), (390, 13719), (393, 13752), (399, 13803), (404, 13833), (408, 13893), (418, 13974), (421, 13995), (424, 14028), (430, 14100), (431, 14109), (440, 14223), (448, 14253), (450, 14262), (453, 14301), (454, 14304), (459, 14334), (461, 14355), (476, 14553), (484, 14616), (485, 14622), (489, 14673), (501, 14865), (510, 14952), (512, 14979), (513, 14982), (516, 15057), (519, 15081), (520, 15120), (523, 15156), (525, 15177), (532, 15264), (538, 15306), (539, 15339), (541, 15351), (554, 15495),

Gene: LitninMcQueen_18 Start: 9869, Stop: 15502, Start Num: 13

Candidate Starts for LitninMcQueen_18:

(Start: 13 @9869 has 11 MA's), (17, 9896), (Start: 18 @9914 has 1 MA's), (19, 9935), (21, 9956), (24, 10001), (Start: 25 @10016 has 1 MA's), (27, 10100), (29, 10142), (30, 10154), (35, 10217), (36, 10232), (38, 10241), (39, 10259), (40, 10265), (44, 10313), (61, 10448), (70, 10598), (73, 10628), (85, 10847), (91, 10922), (94, 10952), (106, 11156), (109, 11198), (110, 11201), (111, 11207), (113, 11228), (121, 11309), (127, 11375), (130, 11402), (133, 11414), (135, 11432), (137, 11444), (141, 11468), (142, 11480), (146, 11519), (147, 11522), (148, 11531), (150, 11561), (155, 11606), (164, 11666), (165, 11681), (170, 11711), (172, 11723), (176, 11768), (177, 11774), (179, 11789), (182, 11819), (184, 11840), (185, 11843), (194, 11906), (200, 11933), (201, 11936), (202, 11939), (204, 11945), (209, 11969), (210, 11972), (211, 11978), (212, 11984), (215, 11999), (218, 12017), (229, 12098), (235, 12146), (236, 12152), (239, 12179), (256, 12338), (257, 12350), (259, 12386), (267, 12446), (269, 12485), (270, 12491), (271, 12494), (273, 12515), (274, 12518), (285, 12617), (291, 12656), (294, 12680), (297, 12713), (303, 12758), (310, 12812), (317, 12899), (320, 12920), (322, 12956), (324, 12986), (332, 13064), (333, 13067), (334, 13076), (337, 13100), (345, 13181), (347, 13187), (349, 13232), (350, 13235), (351, 13250), (356, 13295), (357, 13304), (358, 13313), (359, 13316), (363, 13421), (368, 13469), (370, 13475), (374, 13574), (375, 13577), (378, 13589), (390, 13706), (393, 13739), (399, 13790), (404, 13820), (408, 13880), (418, 13961), (421, 13982), (424, 14015), (429, 14078), (431, 14096), (440, 14210), (448, 14240), (450, 14249), (453, 14288), (454, 14291), (459, 14321), (461, 14342), (471, 14495), (476, 14546), (484, 14609), (485, 14615), (489, 14666), (501, 14852), (510, 14939), (512, 14966), (513, 14969), (516, 15044), (519, 15068), (520, 15107), (523, 15143), (525, 15164), (532, 15251), (538, 15293), (539, 15326), (541, 15338), (549, 15416), (554, 15482),

Gene: Lutum_18 Start: 9881, Stop: 15508, Start Num: 13

Candidate Starts for Lutum_18:

(Start: 13 @9881 has 11 MA's), (17, 9908), (Start: 18 @9926 has 1 MA's), (19, 9947), (21, 9968), (24, 10013), (Start: 25 @10028 has 1 MA's), (27, 10112), (29, 10154), (30, 10166), (35, 10229), (36, 10244), (38, 10253), (39, 10271), (40, 10277), (44, 10325), (61, 10460), (70, 10610), (73, 10640), (94, 10964), (101, 11060), (106, 11168), (110, 11213), (111, 11219), (113, 11240), (116, 11264), (121, 11321), (127, 11387), (130, 11414), (133, 11426), (135, 11444), (137, 11456), (141, 11480), (142, 11492), (146, 11531), (147, 11534), (148, 11543), (150, 11573), (155, 11618), (164, 11678), (165, 11693), (170, 11723), (172, 11735), (176, 11780), (177, 11786), (179, 11801), (182, 11831), (184, 11852), (185, 11855), (194, 11918), (200, 11945), (201, 11948), (202, 11951), (204, 11957), (209, 11981), (210, 11984), (211, 11990), (212, 11996), (215, 12011), (218, 12029), (223, 12074), (235, 12158), (236, 12164), (239, 12191), (247, 12284), (248, 12293), (256, 12350), (257, 12362), (259, 12398), (261, 12404), (266, 12446), (267, 12458), (269, 12497), (270, 12503), (271, 12506), (272, 12524), (273, 12527), (274, 12530), (277, 12554), (285, 12629), (291, 12668), (294, 12692), (297, 12725), (312, 12836), (315, 12869), (320, 12932), (322, 12968), (324, 12998), (332, 13076), (333, 13079), (334, 13088), (337, 13112), (345, 13193), (347, 13199), (349, 13244), (350, 13247), (351, 13262), (356, 13307), (357, 13316), (358, 13325), (359, 13328), (363, 13433), (368, 13481), (369, 13484), (370, 13487), (374, 13586), (375, 13589), (378, 13601), (390, 13718), (393, 13751), (399, 13802), (404, 13832), (408, 13892), (418, 13973), (421, 13994), (424, 14027), (430, 14099), (431, 14108), (440, 14222), (448, 14252), (450, 14261), (453, 14300), (454, 14303), (459, 14333), (461, 14354), (476, 14552), (484, 14615), (485, 14621), (489, 14672), (501, 14858), (510, 14945), (512, 14972), (513, 14975), (516, 15050), (519, 15074), (520, 15113), (523, 15149), (525, 15170), (532, 15257), (538, 15299), (539, 15332), (541, 15344), (549, 15422), (554, 15488),

Gene: Makar_57 Start: 30799, Stop: 35982, Start Num: 45

Candidate Starts for Makar_57:

(Start: 45 @30799 has 6 MA's), (62, 30919), (63, 30931), (68, 31051), (70, 31063), (88, 31321), (92, 31378), (100, 31483), (103, 31504), (104, 31525), (107, 31606), (112, 31651), (114, 31663), (117,

31693), (129, 31807), (131, 31819), (134, 31831), (140, 31867), (143, 31900), (145, 31912), (149, 31966), (153, 31987), (154, 31999), (156, 32023), (158, 32032), (160, 32047), (169, 32116), (183, 32254), (192, 32302), (193, 32320), (194, 32323), (197, 32344), (203, 32362), (207, 32380), (212, 32410), (228, 32524), (233, 32560), (234, 32575), (243, 32638), (246, 32668), (256, 32761), (269, 32881), (274, 32914), (290, 33046), (292, 33067), (293, 33070), (296, 33097), (298, 33121), (307, 33184), (311, 33217), (323, 33358), (327, 33415), (328, 33427), (330, 33436), (335, 33475), (342, 33556), (344, 33574), (346, 33598), (357, 33718), (373, 33907), (377, 33973), (379, 33988), (384, 34027), (385, 34030), (386, 34042), (387, 34060), (390, 34096), (392, 34108), (393, 34129), (396, 34165), (397, 34174), (400, 34186), (413, 34306), (414, 34324), (415, 34330), (417, 34342), (420, 34369), (424, 34408), (425, 34435), (429, 34480), (433, 34525), (434, 34537), (443, 34621), (449, 34648), (451, 34660), (456, 34696), (462, 34747), (464, 34765), (467, 34786), (470, 34846), (472, 34891), (473, 34903), (479, 34963), (490, 35068), (493, 35107), (495, 35155), (497, 35224), (502, 35269), (503, 35272), (505, 35314), (506, 35320), (507, 35329), (508, 35332), (512, 35377), (515, 35440), (522, 35554), (526, 35593), (528, 35608), (535, 35683), (537, 35695), (540, 35734), (543, 35770), (546, 35809), (548, 35818), (555, 35899), (556, 35902),

Gene: Malachai_18 Start: 10785, Stop: 16274, Start Num: 1

Candidate Starts for Malachai_18:

(Start: 1 @10785 has 12 MA's), (5, 10824), (6, 10836), (7, 10845), (8, 10848), (10, 10890), (22, 11001), (23, 11022), (26, 11142), (28, 11184), (34, 11250), (35, 11268), (36, 11283), (37, 11289), (38, 11292), (39, 11310), (41, 11334), (51, 11418), (55, 11460), (57, 11475), (58, 11484), (71, 11652), (73, 11679), (76, 11754), (77, 11796), (81, 11844), (91, 11967), (94, 11997), (106, 12201), (110, 12246), (113, 12273), (115, 12285), (124, 12375), (127, 12420), (130, 12447), (135, 12477), (146, 12564), (150, 12606), (165, 12726), (172, 12768), (176, 12813), (177, 12819), (178, 12831), (179, 12834), (185, 12888), (191, 12927), (193, 12948), (194, 12951), (196, 12969), (205, 12996), (211, 13023), (215, 13044), (219, 13071), (229, 13143), (249, 13344), (253, 13359), (256, 13383), (261, 13398), (273, 13428), (274, 13431), (280, 13482), (289, 13563), (290, 13566), (295, 13599), (297, 13629), (301, 13653), (315, 13719), (341, 13986), (347, 14034), (349, 14079), (350, 14082), (351, 14097), (356, 14142), (357, 14151), (358, 14160), (362, 14211), (365, 14283), (367, 14301), (370, 14322), (374, 14421), (375, 14424), (382, 14457), (388, 14523), (389, 14541), (390, 14556), (393, 14589), (399, 14640), (405, 14691), (427, 14934), (428, 14937), (436, 15012), (440, 15078), (441, 15081), (447, 15099), (460, 15159), (478, 15315), (479, 15318), (482, 15333), (500, 15552), (505, 15609), (507, 15624), (512, 15672), (514, 15717), (521, 15837), (522, 15846), (526, 15885), (533, 15957), (539, 16026), (541, 16038), (545, 16089), (547, 16107), (553, 16164), (559, 16257),

Gene: Malibo_18 Start: 10639, Stop: 15675, Start Num: 42

Candidate Starts for Malibo_18:

(Start: 42 @10639 has 1 MA's), (47, 10681), (49, 10690), (50, 10702), (54, 10726), (56, 10759), (60, 10783), (64, 10804), (78, 11089), (80, 11098), (86, 11149), (87, 11152), (89, 11203), (95, 11251), (96, 11254), (99, 11317), (103, 11350), (106, 11443), (108, 11476), (118, 11548), (120, 11581), (122, 11593), (126, 11614), (136, 11701), (144, 11755), (157, 11872), (178, 12019), (186, 12073), (187, 12082), (192, 12106), (194, 12127), (199, 12148), (208, 12178), (213, 12199), (220, 12235), (221, 12247), (223, 12268), (224, 12274), (225, 12277), (227, 12289), (233, 12337), (245, 12433), (253, 12514), (256, 12538), (274, 12586), (275, 12592), (277, 12610), (285, 12685), (287, 12694), (288, 12712), (289, 12715), (297, 12781), (305, 12847), (312, 12892), (314, 12913), (334, 13144), (341, 13210), (350, 13306), (351, 13321), (357, 13375), (358, 13384), (370, 13546), (374, 13645), (375, 13648), (388, 13747), (389, 13765), (390, 13780), (393, 13813), (399, 13864), (402, 13879), (405, 13915), (406, 13918), (409, 13963), (413, 13993), (416, 14020), (418, 14041), (423, 14083), (427, 14158), (428, 14161), (432, 14212), (438, 14266), (440, 14305), (444, 14317), (450, 14344), (451, 14350), (458, 14410), (481, 14692), (492, 14797), (493, 14821), (498, 14950), (501, 14974), (510, 15061), (512, 15088), (525, 15286), (532, 15373), (534, 15394), (552, 15586),

Gene: Malisha_19 Start: 11668, Stop: 17280, Start Num: 14

Candidate Starts for Malisha_19:

(Start: 14 @11668 has 5 MA's), (16, 11686), (17, 11695), (Start: 18 @11713 has 1 MA's), (19, 11734), (20, 11746), (24, 11800), (Start: 25 @11815 has 1 MA's), (33, 11992), (35, 12016), (38, 12040), (39, 12058), (43, 12103), (52, 12169), (53, 12172), (58, 12232), (70, 12397), (73, 12427), (79, 12583), (91, 12721), (101, 12847), (106, 12955), (108, 12988), (110, 13000), (113, 13027), (127, 13174), (130, 13201), (135, 13231), (141, 13267), (146, 13318), (147, 13321), (148, 13330), (152, 13366), (159, 13432), (165, 13480), (168, 13495), (170, 13510), (175, 13564), (176, 13567), (177, 13573), (178, 13585), (179, 13588), (184, 13639), (185, 13642), (191, 13681), (211, 13777), (215, 13798), (242, 14002), (245, 14032), (253, 14113), (256, 14137), (257, 14149), (259, 14185), (267, 14245), (269, 14284), (271, 14293), (273, 14314), (274, 14317), (285, 14416), (291, 14455), (294, 14479), (297, 14512), (303, 14557), (310, 14611), (312, 14623), (317, 14698), (320, 14719), (322, 14755), (324, 14785), (333, 14866), (334, 14875), (337, 14899), (345, 14980), (347, 14986), (349, 15031), (350, 15034), (356, 15094), (357, 15103), (358, 15112), (363, 15220), (368, 15268), (370, 15274), (374, 15373), (375, 15376), (378, 15388), (390, 15505), (393, 15538), (398, 15586), (399, 15589), (404, 15619), (408, 15679), (418, 15760), (421, 15781), (422, 15784), (429, 15877), (430, 15886), (439, 15988), (440, 16009), (448, 16039), (450, 16048), (453, 16087), (454, 16090), (455, 16093), (459, 16120), (465, 16174), (471, 16291), (480, 16375), (483, 16387), (484, 16399), (485, 16405), (487, 16432), (489, 16456), (501, 16633), (510, 16720), (511, 16738), (512, 16747), (516, 16825), (517, 16840), (519, 16849), (523, 16924), (524, 16933), (525, 16945), (532, 17032), (538, 17074), (539, 17107), (541, 17119), (549, 17194), (554, 17260),

Gene: MissRona_19 Start: 10619, Stop: 16108, Start Num: 1

Candidate Starts for MissRona_19:

(Start: 1 @10619 has 12 MA's), (Start: 3 @10634 has 1 MA's), (4, 10640), (6, 10670), (7, 10679), (8, 10682), (10, 10724), (22, 10835), (23, 10856), (26, 10976), (28, 11018), (34, 11084), (35, 11102), (37, 11123), (38, 11126), (39, 11144), (41, 11168), (51, 11252), (55, 11294), (57, 11309), (58, 11318), (71, 11486), (73, 11513), (77, 11630), (91, 11801), (94, 11831), (106, 12035), (110, 12080), (113, 12107), (115, 12119), (116, 12131), (124, 12209), (127, 12254), (130, 12281), (135, 12311), (146, 12398), (147, 12401), (150, 12440), (158, 12503), (159, 12512), (165, 12560), (172, 12602), (176, 12647), (177, 12653), (179, 12668), (185, 12722), (191, 12761), (193, 12782), (194, 12785), (196, 12803), (205, 12830), (210, 12851), (211, 12857), (215, 12878), (218, 12896), (219, 12905), (249, 13178), (261, 13232), (273, 13262), (274, 13265), (280, 13316), (289, 13397), (290, 13400), (295, 13433), (297, 13463), (301, 13487), (315, 13553), (341, 13820), (347, 13868), (348, 13901), (349, 13913), (350, 13916), (356, 13976), (357, 13985), (358, 13994), (362, 14045), (365, 14117), (367, 14135), (370, 14156), (374, 14255), (375, 14258), (382, 14291), (388, 14357), (389, 14375), (390, 14390), (393, 14423), (399, 14474), (405, 14525), (412, 14594), (427, 14768), (428, 14771), (435, 14843), (436, 14846), (440, 14912), (441, 14915), (447, 14933), (460, 14993), (468, 15050), (469, 15068), (478, 15149), (479, 15152), (482, 15167), (496, 15338), (500, 15392), (507, 15464), (509, 15473), (512, 15509), (515, 15569), (516, 15587), (518, 15605), (520, 15650), (522, 15683), (533, 15794), (539, 15863), (545, 15926), (547, 15944), (559, 16094),

Gene: Periwinkle_20 Start: 10340, Stop: 15973, Start Num: 12

Candidate Starts for Periwinkle_20:

(9, 10313), (Start: 12 @10340 has 1 MA's), (Start: 18 @10385 has 1 MA's), (19, 10406), (21, 10427), (24, 10472), (Start: 25 @10487 has 1 MA's), (27, 10571), (29, 10613), (30, 10625), (35, 10688), (36, 10703), (38, 10712), (39, 10730), (40, 10736), (44, 10784), (51, 10838), (61, 10919), (69, 11063), (70, 11069), (73, 11099), (85, 11318), (91, 11393), (94, 11423), (105, 11606), (106, 11627), (110, 11672), (111, 11678), (113, 11699), (121, 11780), (127, 11846), (130, 11873), (133, 11885), (135, 11903), (137, 11915), (141, 11939), (142, 11951), (146, 11990), (147, 11993), (148, 12002), (150, 12032), (155, 12077), (164, 12137), (165, 12152), (170, 12182), (172, 12194), (176, 12239), (177, 12245), (178, 12257), (179, 12260), (180, 12281), (184, 12311), (185, 12314), (194, 12377), (200, 12404), (201, 12407), (202, 12410), (204, 12416), (209, 12440), (210, 12443), (211, 12449), (212, 12455), (215, 12470), (218, 12488), (229, 12569), (235, 12617), (236, 12623), (239, 12650), (256, 12809),

(257, 12821), (259, 12857), (267, 12917), (269, 12956), (270, 12962), (271, 12965), (273, 12986), (274, 12989), (285, 13088), (291, 13127), (294, 13151), (297, 13184), (303, 13229), (310, 13283), (317, 13370), (320, 13391), (322, 13427), (324, 13457), (333, 13538), (334, 13547), (337, 13571), (345, 13652), (347, 13658), (349, 13703), (350, 13706), (356, 13766), (357, 13775), (358, 13784), (363, 13892), (368, 13940), (370, 13946), (374, 14045), (375, 14048), (378, 14060), (390, 14177), (393, 14210), (399, 14261), (404, 14291), (408, 14351), (418, 14432), (421, 14453), (424, 14486), (429, 14549), (430, 14558), (431, 14567), (440, 14681), (448, 14711), (450, 14720), (453, 14759), (454, 14762), (459, 14792), (461, 14813), (476, 15017), (484, 15080), (485, 15086), (489, 15137), (501, 15323), (510, 15410), (512, 15437), (513, 15440), (516, 15515), (519, 15539), (520, 15578), (523, 15614), (525, 15635), (532, 15722), (538, 15764), (539, 15797), (541, 15809), (549, 15887), (554, 15953),

Gene: Phabuloso_18 Start: 9869, Stop: 15502, Start Num: 13

Candidate Starts for Phabuloso_18:

(Start: 13 @9869 has 11 MA's), (17, 9896), (Start: 18 @9914 has 1 MA's), (19, 9935), (21, 9956), (24, 10001), (Start: 25 @10016 has 1 MA's), (27, 10100), (29, 10142), (30, 10154), (35, 10217), (36, 10232), (38, 10241), (39, 10259), (40, 10265), (44, 10313), (61, 10448), (70, 10598), (73, 10628), (85, 10847), (91, 10922), (94, 10952), (106, 11156), (109, 11198), (110, 11201), (111, 11207), (113, 11228), (121, 11309), (127, 11375), (130, 11402), (133, 11414), (135, 11432), (137, 11444), (141, 11468), (142, 11480), (146, 11519), (147, 11522), (148, 11531), (150, 11561), (155, 11606), (164, 11666), (165, 11681), (170, 11711), (172, 11723), (176, 11768), (177, 11774), (179, 11789), (182, 11819), (184, 11840), (185, 11843), (194, 11906), (200, 11933), (201, 11936), (202, 11939), (204, 11945), (209, 11969), (210, 11972), (211, 11978), (212, 11984), (215, 11999), (218, 12017), (229, 12098), (235, 12146), (236, 12152), (239, 12179), (256, 12338), (257, 12350), (259, 12386), (267, 12446), (269, 12485), (270, 12491), (271, 12494), (273, 12515), (274, 12518), (285, 12617), (291, 12656), (294, 12680), (297, 12713), (303, 12758), (310, 12812), (317, 12899), (320, 12920), (322, 12956), (324, 12986), (332, 13064), (333, 13067), (334, 13076), (337, 13100), (345, 13181), (347, 13187), (349, 13232), (350, 13235), (351, 13250), (356, 13295), (357, 13304), (358, 13313), (359, 13316), (363, 13421), (368, 13469), (370, 13475), (374, 13574), (375, 13577), (378, 13589), (390, 13706), (393, 13739), (399, 13790), (404, 13820), (408, 13880), (418, 13961), (421, 13982), (424, 14015), (429, 14078), (431, 14096), (440, 14210), (448, 14240), (450, 14249), (453, 14288), (454, 14291), (459, 14321), (461, 14342), (471, 14495), (476, 14546), (484, 14609), (485, 14615), (489, 14666), (501, 14852), (510, 14939), (512, 14966), (513, 14969), (516, 15044), (519, 15068), (520, 15107), (523, 15143), (525, 15164), (532, 15251), (538, 15293), (539, 15326), (541, 15338), (549, 15416), (554, 15482),

Gene: Phistory_19 Start: 10653, Stop: 16280, Start Num: 11

Candidate Starts for Phistory_19:

(Start: 11 @10653 has 1 MA's), (15, 10659), (Start: 18 @10698 has 1 MA's), (24, 10785), (27, 10884), (29, 10926), (30, 10938), (35, 11001), (36, 11016), (38, 11025), (39, 11043), (40, 11049), (44, 11097), (54, 11172), (61, 11232), (70, 11382), (73, 11412), (91, 11706), (94, 11736), (105, 11919), (106, 11940), (109, 11982), (110, 11985), (111, 11991), (113, 12012), (115, 12024), (119, 12084), (123, 12105), (127, 12159), (130, 12186), (133, 12198), (135, 12216), (137, 12228), (141, 12252), (142, 12264), (146, 12303), (147, 12306), (148, 12315), (151, 12348), (159, 12417), (163, 12438), (165, 12465), (166, 12471), (172, 12507), (173, 12510), (176, 12552), (177, 12558), (178, 12570), (179, 12573), (184, 12624), (185, 12627), (194, 12690), (195, 12699), (200, 12717), (201, 12720), (204, 12729), (211, 12762), (215, 12783), (216, 12789), (217, 12798), (223, 12846), (230, 12888), (235, 12930), (239, 12963), (244, 13014), (245, 13017), (247, 13056), (248, 13065), (256, 13122), (257, 13134), (259, 13170), (267, 13230), (269, 13269), (270, 13275), (273, 13299), (274, 13302), (276, 13320), (285, 13401), (294, 13464), (297, 13497), (308, 13572), (310, 13596), (312, 13608), (315, 13641), (320, 13704), (322, 13740), (324, 13770), (332, 13848), (333, 13851), (334, 13860), (337, 13884), (347, 13971), (349, 14016), (350, 14019), (351, 14034), (356, 14079), (357, 14088), (358, 14097), (359, 14100), (363, 14205), (368, 14253), (370, 14259), (374, 14358), (375, 14361), (378,

14373), (390, 14490), (393, 14523), (399, 14574), (404, 14604), (408, 14664), (418, 14745), (421, 14766), (422, 14769), (429, 14862), (431, 14880), (440, 14994), (448, 15024), (450, 15033), (453, 15072), (454, 15075), (459, 15105), (461, 15126), (476, 15324), (484, 15387), (485, 15393), (487, 15420), (489, 15444), (501, 15630), (510, 15717), (512, 15744), (513, 15747), (516, 15822), (519, 15846), (520, 15885), (523, 15921), (525, 15942), (532, 16029), (538, 16071), (539, 16104), (541, 16116), (549, 16194), (554, 16260),

Gene: Purplicious_55 Start: 30218, Stop: 35407, Start Num: 45

Candidate Starts for Purplicious_55:

(Start: 45 @30218 has 6 MA's), (62, 30338), (68, 30470), (82, 30677), (84, 30707), (100, 30902), (103, 30923), (104, 30944), (110, 31055), (112, 31070), (114, 31082), (117, 31112), (129, 31226), (131, 31238), (140, 31286), (143, 31319), (145, 31331), (153, 31406), (154, 31418), (156, 31442), (160, 31466), (162, 31478), (169, 31535), (176, 31604), (183, 31673), (188, 31697), (189, 31706), (194, 31742), (197, 31763), (198, 31769), (207, 31799), (212, 31829), (228, 31943), (231, 31973), (232, 31976), (245, 32096), (268, 32300), (276, 32375), (283, 32441), (287, 32465), (292, 32510), (300, 32573), (309, 32627), (316, 32696), (319, 32744), (321, 32759), (322, 32786), (323, 32795), (325, 32819), (328, 32858), (334, 32906), (352, 33089), (354, 33101), (360, 33149), (361, 33188), (370, 33299), (373, 33335), (380, 33419), (383, 33437), (386, 33470), (387, 33488), (390, 33524), (391, 33533), (392, 33536), (393, 33557), (394, 33578), (396, 33593), (398, 33605), (400, 33614), (411, 33713), (413, 33734), (414, 33752), (415, 33758), (417, 33770), (420, 33797), (425, 33863), (429, 33908), (433, 33953), (437, 33992), (443, 34049), (449, 34076), (451, 34088), (462, 34175), (464, 34193), (467, 34214), (472, 34319), (474, 34340), (477, 34385), (490, 34496), (493, 34532), (495, 34580), (497, 34649), (502, 34694), (503, 34697), (505, 34739), (506, 34745), (507, 34754), (508, 34757), (512, 34802), (522, 34979), (526, 35018), (535, 35108), (540, 35159), (543, 35195), (544, 35210), (546, 35234), (548, 35243), (555, 35324), (556, 35327), (557, 35330), (558, 35378),

Gene: Samba_17 Start: 10382, Stop: 15874, Start Num: 1

Candidate Starts for Samba_17:

(Start: 1 @10382 has 12 MA's), (Start: 3 @10397 has 1 MA's), (4, 10403), (6, 10433), (7, 10442), (8, 10445), (10, 10487), (22, 10598), (23, 10619), (26, 10739), (28, 10781), (34, 10847), (35, 10865), (36, 10880), (37, 10886), (38, 10889), (39, 10907), (41, 10931), (51, 11015), (55, 11057), (57, 11072), (58, 11081), (71, 11249), (73, 11276), (77, 11393), (91, 11564), (94, 11594), (106, 11798), (110, 11843), (113, 11870), (115, 11882), (124, 11972), (127, 12017), (130, 12044), (135, 12074), (146, 12161), (150, 12203), (158, 12266), (159, 12275), (165, 12323), (172, 12365), (176, 12410), (177, 12416), (178, 12428), (179, 12431), (185, 12485), (191, 12524), (193, 12545), (194, 12548), (196, 12566), (200, 12575), (210, 12614), (211, 12620), (214, 12638), (215, 12641), (219, 12668), (249, 12941), (255, 12968), (256, 12980), (260, 12992), (261, 12995), (273, 13025), (274, 13028), (280, 13079), (289, 13160), (290, 13163), (295, 13196), (297, 13226), (301, 13250), (315, 13316), (341, 13583), (347, 13631), (349, 13676), (350, 13679), (351, 13694), (356, 13739), (357, 13748), (358, 13757), (362, 13808), (365, 13880), (367, 13898), (370, 13919), (374, 14018), (375, 14021), (382, 14054), (388, 14120), (389, 14138), (390, 14153), (393, 14186), (399, 14237), (405, 14288), (427, 14531), (428, 14534), (435, 14606), (436, 14609), (440, 14675), (441, 14678), (447, 14696), (460, 14756), (478, 14912), (479, 14915), (482, 14930), (496, 15101), (500, 15155), (505, 15212), (507, 15227), (512, 15275), (514, 15320), (521, 15440), (522, 15449), (526, 15488), (533, 15560), (539, 15629), (545, 15692), (547, 15710), (559, 15860),

Gene: ShawBrad_18 Start: 9931, Stop: 15516, Start Num: 18

Candidate Starts for ShawBrad_18:

(Start: 13 @9886 has 11 MA's), (Start: 18 @9931 has 1 MA's), (19, 9952), (21, 9973), (24, 10018), (Start: 25 @10033 has 1 MA's), (27, 10117), (29, 10159), (30, 10171), (35, 10234), (36, 10249), (38, 10258), (39, 10276), (40, 10282), (44, 10330), (61, 10465), (70, 10615), (73, 10645), (91, 10939), (94, 10969), (106, 11173), (109, 11215), (110, 11218), (111, 11224), (113, 11245), (121, 11326), (127, 11392), (130, 11419), (133, 11431), (135, 11449), (137, 11461), (141, 11485), (142, 11497), (146,

11536), (147, 11539), (148, 11548), (150, 11578), (155, 11623), (164, 11683), (165, 11698), (170, 11728), (172, 11740), (176, 11785), (177, 11791), (178, 11803), (179, 11806), (180, 11827), (184, 11857), (185, 11860), (194, 11923), (200, 11950), (201, 11953), (202, 11956), (204, 11962), (209, 11986), (210, 11989), (211, 11995), (212, 12001), (215, 12016), (218, 12034), (229, 12115), (235, 12163), (236, 12169), (239, 12196), (247, 12289), (251, 12322), (256, 12352), (262, 12415), (265, 12433), (267, 12460), (285, 12631), (294, 12694), (297, 12727), (308, 12802), (310, 12826), (312, 12838), (315, 12871), (320, 12934), (322, 12970), (324, 13000), (332, 13078), (333, 13081), (334, 13090), (347, 13201), (349, 13246), (350, 13249), (351, 13264), (356, 13309), (357, 13318), (358, 13327), (359, 13330), (363, 13435), (368, 13483), (370, 13489), (374, 13588), (375, 13591), (378, 13603), (390, 13720), (393, 13753), (399, 13804), (404, 13834), (408, 13894), (418, 13975), (421, 13996), (424, 14029), (429, 14092), (431, 14110), (440, 14224), (448, 14254), (450, 14263), (453, 14302), (454, 14305), (459, 14335), (461, 14356), (476, 14554), (484, 14617), (485, 14623), (489, 14674), (501, 14866), (510, 14953), (512, 14980), (513, 14983), (516, 15058), (519, 15082), (520, 15121), (523, 15157), (525, 15178), (532, 15265), (538, 15307), (539, 15340), (541, 15352), (554, 15496),

Gene: Soilmate_17 Start: 10172, Stop: 15763, Start Num: 1

Candidate Starts for Soilmate_17:

(Start: 1 @10172 has 12 MA's), (Start: 3 @10187 has 1 MA's), (6, 10223), (7, 10232), (8, 10235), (10, 10277), (22, 10388), (23, 10409), (26, 10529), (34, 10637), (35, 10655), (37, 10676), (38, 10679), (39, 10697), (53, 10811), (55, 10847), (57, 10862), (58, 10871), (71, 11039), (73, 11066), (77, 11183), (91, 11354), (94, 11384), (106, 11588), (110, 11633), (127, 11807), (130, 11834), (135, 11864), (139, 11885), (146, 11951), (147, 11954), (150, 11993), (158, 12056), (165, 12113), (172, 12155), (176, 12200), (177, 12206), (178, 12218), (179, 12221), (185, 12275), (191, 12314), (193, 12335), (194, 12338), (196, 12356), (205, 12383), (210, 12404), (211, 12410), (215, 12431), (219, 12458), (226, 12506), (230, 12536), (248, 12692), (250, 12716), (252, 12725), (254, 12746), (264, 12827), (273, 12923), (274, 12926), (275, 12932), (279, 12974), (280, 12977), (282, 12998), (289, 13058), (290, 13061), (295, 13094), (297, 13124), (315, 13214), (341, 13481), (347, 13529), (349, 13574), (350, 13577), (351, 13592), (356, 13637), (357, 13646), (358, 13655), (362, 13706), (365, 13778), (367, 13796), (370, 13817), (374, 13916), (375, 13919), (382, 13952), (388, 14018), (389, 14036), (390, 14051), (393, 14084), (399, 14135), (405, 14186), (409, 14234), (427, 14429), (428, 14432), (435, 14504), (436, 14507), (440, 14573), (441, 14576), (447, 14594), (460, 14654), (469, 14729), (479, 14813), (482, 14828), (500, 15041), (505, 15098), (507, 15113), (512, 15161), (514, 15206), (521, 15326), (522, 15335), (526, 15374), (533, 15446), (539, 15515), (545, 15578), (547, 15596), (553, 15653), (559, 15746),

Gene: Soos_52 Start: 30179, Stop: 35368, Start Num: 45

Candidate Starts for Soos_52:

(Start: 45 @30179 has 6 MA's), (62, 30299), (68, 30431), (74, 30497), (90, 30746), (98, 30824), (100, 30863), (103, 30884), (104, 30905), (110, 31016), (112, 31031), (114, 31043), (117, 31073), (129, 31187), (131, 31199), (140, 31247), (143, 31280), (145, 31292), (153, 31367), (154, 31379), (156, 31403), (160, 31427), (162, 31439), (169, 31496), (176, 31565), (183, 31634), (188, 31658), (189, 31667), (194, 31703), (197, 31724), (198, 31730), (207, 31760), (212, 31790), (228, 31904), (231, 31934), (232, 31937), (268, 32261), (276, 32336), (283, 32402), (292, 32471), (300, 32534), (309, 32588), (316, 32657), (319, 32705), (321, 32720), (322, 32747), (323, 32756), (325, 32780), (328, 32819), (334, 32867), (352, 33050), (354, 33062), (360, 33110), (361, 33149), (370, 33260), (373, 33296), (380, 33380), (383, 33398), (386, 33431), (387, 33449), (390, 33485), (391, 33494), (392, 33497), (393, 33518), (394, 33539), (396, 33554), (398, 33566), (400, 33575), (411, 33674), (413, 33695), (414, 33713), (415, 33719), (417, 33731), (420, 33758), (425, 33824), (429, 33869), (433, 33914), (437, 33953), (443, 34010), (449, 34037), (451, 34049), (462, 34136), (464, 34154), (467, 34175), (472, 34280), (474, 34301), (477, 34346), (490, 34457), (493, 34493), (495, 34541), (497, 34610), (502, 34655), (503, 34658), (505, 34700), (506, 34706), (507, 34715), (508, 34718), (512, 34763), (522, 34940), (526, 34979), (535, 35069), (540, 35120), (543, 35156), (544, 35171), (546,

35195), (548, 35204), (555, 35285), (556, 35288), (557, 35291), (558, 35339),

Gene: Spooky_18 Start: 9874, Stop: 15489, Start Num: 14

Candidate Starts for Spooky_18:

(Start: 14 @9874 has 5 MA's), (Start: 18 @9919 has 1 MA's), (19, 9940), (21, 9961), (24, 10006), (38, 10246), (46, 10339), (48, 10351), (52, 10375), (53, 10378), (58, 10438), (59, 10447), (61, 10453), (66, 10525), (70, 10603), (72, 10612), (73, 10633), (101, 11053), (106, 11161), (108, 11194), (110, 11206), (113, 11233), (127, 11380), (130, 11407), (135, 11437), (141, 11473), (146, 11524), (147, 11527), (148, 11536), (152, 11572), (159, 11638), (165, 11686), (175, 11770), (176, 11773), (177, 11779), (178, 11791), (179, 11794), (184, 11845), (185, 11848), (191, 11887), (211, 11983), (215, 12004), (242, 12208), (245, 12238), (253, 12319), (256, 12343), (257, 12355), (259, 12391), (267, 12451), (269, 12490), (270, 12496), (271, 12499), (273, 12520), (274, 12523), (285, 12622), (291, 12661), (294, 12685), (297, 12718), (303, 12763), (310, 12817), (312, 12829), (317, 12904), (320, 12925), (322, 12961), (324, 12991), (333, 13072), (334, 13081), (337, 13105), (345, 13186), (347, 13192), (349, 13237), (350, 13240), (351, 13255), (356, 13300), (357, 13309), (358, 13318), (363, 13426), (367, 13459), (368, 13474), (370, 13480), (374, 13579), (375, 13582), (376, 13585), (378, 13594), (390, 13711), (393, 13744), (398, 13792), (399, 13795), (404, 13825), (408, 13885), (418, 13966), (421, 13987), (422, 13990), (429, 14083), (430, 14092), (439, 14194), (440, 14215), (448, 14245), (450, 14254), (453, 14293), (454, 14296), (455, 14299), (459, 14326), (465, 14380), (471, 14497), (480, 14581), (483, 14593), (484, 14605), (485, 14611), (487, 14638), (489, 14662), (501, 14839), (510, 14926), (511, 14944), (512, 14953), (516, 15031), (518, 15049), (524, 15139), (525, 15151), (532, 15238), (538, 15280), (539, 15313), (541, 15325), (554, 15469),

Gene: Squiddly_20 Start: 11289, Stop: 16901, Start Num: 14

Candidate Starts for Squiddly_20:

(Start: 14 @11289 has 5 MA's), (16, 11307), (17, 11316), (Start: 18 @11334 has 1 MA's), (19, 11355), (20, 11367), (24, 11421), (Start: 25 @11436 has 1 MA's), (32, 11604), (33, 11613), (35, 11637), (38, 11661), (39, 11679), (43, 11724), (52, 11790), (53, 11793), (58, 11853), (70, 12018), (73, 12048), (79, 12204), (91, 12342), (93, 12357), (101, 12468), (106, 12576), (109, 12618), (110, 12621), (111, 12627), (113, 12648), (115, 12660), (127, 12795), (130, 12822), (135, 12852), (138, 12870), (146, 12939), (148, 12951), (159, 13053), (165, 13101), (172, 13143), (176, 13188), (177, 13194), (178, 13206), (179, 13209), (180, 13230), (184, 13260), (185, 13263), (190, 13299), (191, 13302), (206, 13377), (211, 13398), (215, 13419), (227, 13503), (238, 13593), (253, 13734), (257, 13770), (258, 13803), (259, 13806), (263, 13824), (267, 13866), (269, 13905), (270, 13911), (271, 13914), (273, 13935), (274, 13938), (285, 14037), (291, 14076), (297, 14133), (308, 14208), (312, 14244), (320, 14340), (322, 14376), (324, 14406), (332, 14484), (333, 14487), (334, 14496), (337, 14520), (339, 14544), (343, 14577), (345, 14601), (347, 14607), (348, 14640), (349, 14652), (350, 14655), (351, 14670), (354, 14688), (356, 14715), (357, 14724), (358, 14733), (359, 14736), (363, 14841), (368, 14889), (370, 14895), (375, 14997), (378, 15009), (390, 15126), (393, 15159), (399, 15210), (401, 15222), (404, 15240), (408, 15300), (418, 15381), (421, 15402), (429, 15498), (431, 15516), (433, 15540), (439, 15609), (440, 15630), (448, 15660), (450, 15669), (453, 15708), (454, 15711), (455, 15714), (459, 15741), (465, 15795), (471, 15912), (480, 15996), (483, 16008), (484, 16020), (485, 16026), (487, 16053), (489, 16077), (501, 16254), (510, 16341), (511, 16359), (512, 16368), (516, 16446), (517, 16461), (519, 16470), (523, 16545), (524, 16554), (525, 16566), (532, 16653), (538, 16695), (539, 16728), (541, 16740), (549, 16815), (554, 16881),

Gene: Stillion_56 Start: 30776, Stop: 35965, Start Num: 45

Candidate Starts for Stillion_56:

(Start: 45 @30776 has 6 MA's), (62, 30896), (68, 31028), (74, 31094), (90, 31343), (98, 31421), (100, 31460), (103, 31481), (104, 31502), (110, 31613), (112, 31628), (114, 31640), (117, 31670), (129, 31784), (131, 31796), (140, 31844), (143, 31877), (145, 31889), (153, 31964), (154, 31976), (156, 32000), (160, 32024), (162, 32036), (169, 32093), (176, 32162), (183, 32231), (188, 32255), (189, 32264), (194, 32300), (197, 32321), (198, 32327), (207, 32357), (212, 32387), (228, 32501), (231,

32531), (232, 32534), (246, 32657), (268, 32858), (276, 32933), (283, 32999), (292, 33068), (300, 33131), (309, 33185), (316, 33254), (319, 33302), (321, 33317), (322, 33344), (323, 33353), (325, 33377), (328, 33416), (334, 33464), (352, 33647), (354, 33659), (360, 33707), (361, 33746), (370, 33857), (373, 33893), (380, 33977), (383, 33995), (386, 34028), (387, 34046), (390, 34082), (391, 34091), (392, 34094), (393, 34115), (394, 34136), (396, 34151), (398, 34163), (400, 34172), (411, 34271), (413, 34292), (414, 34310), (415, 34316), (417, 34328), (420, 34355), (425, 34421), (429, 34466), (433, 34511), (437, 34550), (443, 34607), (449, 34634), (451, 34646), (462, 34733), (464, 34751), (467, 34772), (472, 34877), (474, 34898), (477, 34943), (490, 35054), (493, 35090), (495, 35138), (497, 35207), (502, 35252), (503, 35255), (505, 35297), (506, 35303), (507, 35312), (508, 35315), (512, 35360), (522, 35537), (526, 35576), (535, 35666), (540, 35717), (543, 35753), (544, 35768), (546, 35792), (548, 35801), (555, 35882), (556, 35885), (557, 35888), (558, 35936),

Gene: Sting_55 Start: 30618, Stop: 35807, Start Num: 45

Candidate Starts for Sting_55:

(Start: 45 @30618 has 6 MA's), (62, 30738), (68, 30870), (74, 30936), (90, 31185), (98, 31263), (100, 31302), (103, 31323), (104, 31344), (110, 31455), (112, 31470), (114, 31482), (117, 31512), (125, 31566), (129, 31626), (131, 31638), (140, 31686), (143, 31719), (145, 31731), (153, 31806), (154, 31818), (156, 31842), (160, 31866), (162, 31878), (169, 31935), (176, 32004), (183, 32073), (188, 32097), (189, 32106), (194, 32142), (197, 32163), (198, 32169), (207, 32199), (212, 32229), (228, 32343), (231, 32373), (232, 32376), (246, 32499), (268, 32700), (276, 32775), (283, 32841), (292, 32910), (300, 32973), (309, 33027), (316, 33096), (319, 33144), (321, 33159), (322, 33186), (323, 33195), (325, 33219), (328, 33258), (334, 33306), (352, 33489), (354, 33501), (360, 33549), (361, 33588), (370, 33699), (373, 33735), (380, 33819), (383, 33837), (386, 33870), (387, 33888), (390, 33924), (391, 33933), (392, 33936), (393, 33957), (394, 33978), (396, 33993), (398, 34005), (400, 34014), (411, 34113), (413, 34134), (414, 34152), (415, 34158), (417, 34170), (420, 34197), (425, 34263), (429, 34308), (433, 34353), (437, 34392), (443, 34449), (449, 34476), (451, 34488), (462, 34575), (464, 34593), (467, 34614), (472, 34719), (474, 34740), (477, 34785), (490, 34896), (493, 34932), (495, 34980), (497, 35049), (502, 35094), (503, 35097), (505, 35139), (506, 35145), (507, 35154), (508, 35157), (512, 35202), (522, 35379), (526, 35418), (535, 35508), (540, 35559), (543, 35595), (544, 35610), (546, 35634), (548, 35643), (555, 35724), (556, 35727), (557, 35730), (558, 35778),

Gene: Whitney_19 Start: 10672, Stop: 16305, Start Num: 14

Candidate Starts for Whitney_19:

(Start: 14 @10672 has 5 MA's), (Start: 18 @10717 has 1 MA's), (19, 10738), (21, 10759), (24, 10804), (Start: 25 @10819 has 1 MA's), (27, 10903), (29, 10945), (30, 10957), (35, 11020), (36, 11035), (38, 11044), (39, 11062), (40, 11068), (44, 11116), (61, 11251), (70, 11401), (73, 11431), (85, 11650), (91, 11725), (94, 11755), (106, 11959), (110, 12004), (111, 12010), (113, 12031), (116, 12055), (121, 12112), (127, 12178), (130, 12205), (133, 12217), (135, 12235), (137, 12247), (141, 12271), (142, 12283), (146, 12322), (147, 12325), (148, 12334), (150, 12364), (155, 12409), (164, 12469), (165, 12484), (170, 12514), (172, 12526), (176, 12571), (177, 12577), (179, 12592), (182, 12622), (184, 12643), (185, 12646), (194, 12709), (200, 12736), (201, 12739), (202, 12742), (204, 12748), (209, 12772), (210, 12775), (211, 12781), (212, 12787), (215, 12802), (218, 12820), (223, 12865), (235, 12949), (236, 12955), (239, 12982), (247, 13075), (248, 13084), (256, 13141), (257, 13153), (259, 13189), (261, 13195), (266, 13237), (267, 13249), (269, 13288), (270, 13294), (271, 13297), (272, 13315), (273, 13318), (274, 13321), (277, 13345), (285, 13420), (291, 13459), (294, 13483), (297, 13516), (312, 13627), (315, 13660), (320, 13723), (322, 13759), (324, 13789), (332, 13867), (333, 13870), (334, 13879), (337, 13903), (347, 13990), (349, 14035), (350, 14038), (351, 14053), (356, 14098), (357, 14107), (358, 14116), (359, 14119), (363, 14224), (368, 14272), (370, 14278), (374, 14377), (375, 14380), (378, 14392), (390, 14509), (393, 14542), (399, 14593), (404, 14623), (408, 14683), (418, 14764), (421, 14785), (422, 14788), (424, 14818), (429, 14881), (430, 14890), (431, 14899), (440, 15013), (448, 15043), (453, 15091), (454, 15094), (459, 15124), (461, 15145), (476, 15343), (484, 15406), (485, 15412), (489, 15463), (501, 15655), (510, 15742), (512, 15769), (513,

15772), (516, 15847), (519, 15871), (520, 15910), (523, 15946), (525, 15967), (532, 16054), (538, 16096), (539, 16129), (541, 16141), (554, 16285),

Gene: Wisp_16 Start: 10065, Stop: 15509, Start Num: 6

Candidate Starts for Wisp_16:

(Start: 1 @10014 has 12 MA's), (Start: 3 @10029 has 1 MA's), (4, 10035), (6, 10065), (7, 10074), (8, 10077), (10, 10119), (22, 10230), (23, 10251), (26, 10371), (28, 10413), (31, 10446), (34, 10479), (35, 10497), (36, 10512), (37, 10518), (38, 10521), (39, 10539), (41, 10563), (51, 10647), (55, 10689), (57, 10704), (58, 10713), (71, 10881), (73, 10908), (77, 11025), (91, 11196), (94, 11226), (106, 11430), (110, 11475), (113, 11502), (115, 11514), (124, 11604), (127, 11649), (130, 11676), (135, 11706), (146, 11793), (147, 11796), (150, 11835), (158, 11898), (165, 11955), (172, 11997), (176, 12042), (177, 12048), (178, 12060), (179, 12063), (185, 12117), (191, 12156), (193, 12177), (194, 12180), (196, 12198), (205, 12225), (210, 12246), (211, 12252), (214, 12270), (215, 12273), (216, 12279), (219, 12300), (249, 12573), (255, 12600), (256, 12612), (261, 12627), (273, 12657), (274, 12660), (289, 12792), (290, 12795), (295, 12828), (297, 12858), (301, 12882), (315, 12948), (341, 13215), (347, 13263), (349, 13308), (350, 13311), (351, 13326), (356, 13371), (357, 13380), (358, 13389), (362, 13440), (365, 13512), (367, 13530), (370, 13551), (374, 13650), (375, 13653), (382, 13686), (388, 13752), (389, 13770), (390, 13785), (393, 13818), (399, 13869), (405, 13920), (427, 14163), (428, 14166), (435, 14238), (436, 14241), (440, 14307), (441, 14310), (447, 14328), (460, 14388), (478, 14544), (479, 14547), (482, 14562), (496, 14733), (500, 14787), (505, 14844), (507, 14859), (512, 14907), (514, 14952), (521, 15072), (522, 15081), (526, 15120), (533, 15192), (539, 15261), (541, 15273), (545, 15324), (547, 15342), (553, 15399), (559, 15492),

Gene: Wocket_18 Start: 10497, Stop: 15983, Start Num: 1

Candidate Starts for Wocket_18:

(Start: 1 @10497 has 12 MA's), (Start: 3 @10512 has 1 MA's), (6, 10548), (7, 10557), (8, 10560), (10, 10602), (22, 10713), (23, 10734), (26, 10854), (34, 10962), (35, 10980), (37, 11001), (38, 11004), (39, 11022), (41, 11046), (44, 11076), (51, 11130), (53, 11136), (55, 11172), (57, 11187), (58, 11196), (71, 11364), (73, 11391), (83, 11562), (85, 11604), (91, 11679), (94, 11709), (106, 11913), (110, 11958), (111, 11964), (113, 11985), (115, 11997), (124, 12087), (127, 12132), (130, 12159), (135, 12189), (146, 12276), (150, 12318), (159, 12390), (165, 12438), (172, 12480), (176, 12525), (177, 12531), (179, 12546), (185, 12600), (191, 12639), (193, 12660), (194, 12663), (196, 12681), (205, 12708), (210, 12729), (211, 12735), (215, 12756), (219, 12783), (256, 13095), (261, 13110), (273, 13140), (274, 13143), (280, 13194), (289, 13275), (290, 13278), (295, 13311), (297, 13341), (301, 13365), (315, 13431), (341, 13698), (345, 13740), (347, 13746), (348, 13779), (349, 13791), (350, 13794), (351, 13809), (354, 13827), (356, 13854), (357, 13863), (358, 13872), (363, 13980), (368, 14028), (369, 14031), (370, 14034), (372, 14055), (375, 14136), (376, 14139), (390, 14265), (393, 14298), (398, 14346), (399, 14349), (402, 14364), (405, 14400), (428, 14646), (435, 14718), (436, 14721), (440, 14787), (441, 14790), (447, 14808), (460, 14868), (478, 15024), (482, 15042), (496, 15207), (500, 15261), (505, 15318), (507, 15333), (512, 15381), (514, 15426), (521, 15546), (522, 15555), (526, 15594), (533, 15666), (539, 15735), (545, 15798), (547, 15816), (550, 15846),

Gene: Zilla_17 Start: 10324, Stop: 15813, Start Num: 1

Candidate Starts for Zilla_17:

(Start: 1 @10324 has 12 MA's), (Start: 3 @10339 has 1 MA's), (4, 10345), (6, 10375), (7, 10384), (8, 10387), (10, 10429), (22, 10540), (23, 10561), (26, 10681), (28, 10723), (34, 10789), (35, 10807), (37, 10828), (38, 10831), (39, 10849), (41, 10873), (51, 10957), (55, 10999), (57, 11014), (58, 11023), (71, 11191), (73, 11218), (77, 11335), (91, 11506), (94, 11536), (106, 11740), (110, 11785), (113, 11812), (115, 11824), (116, 11836), (124, 11914), (127, 11959), (130, 11986), (135, 12016), (146, 12103), (147, 12106), (150, 12145), (165, 12265), (172, 12307), (177, 12358), (179, 12373), (185, 12427), (191, 12466), (193, 12487), (194, 12490), (196, 12508), (205, 12535), (210, 12556), (211, 12562), (215, 12583), (218, 12601), (219, 12610), (249, 12883), (261, 12937), (273, 12967), (274, 12970), (280, 13021), (289, 13102), (290, 13105), (295, 13138), (297, 13168), (301, 13192), (315, 13258),

(341, 13525), (347, 13573), (348, 13606), (349, 13618), (350, 13621), (356, 13681), (357, 13690),
(358, 13699), (362, 13750), (365, 13822), (367, 13840), (370, 13861), (374, 13960), (375, 13963),
(382, 13996), (388, 14062), (389, 14080), (390, 14095), (393, 14128), (399, 14179), (405, 14230),
(412, 14299), (427, 14473), (428, 14476), (435, 14548), (436, 14551), (440, 14617), (441, 14620),
(447, 14638), (460, 14698), (468, 14755), (469, 14773), (478, 14854), (479, 14857), (482, 14872),
(496, 15043), (500, 15097), (507, 15169), (509, 15178), (512, 15214), (515, 15274), (516, 15292),
(518, 15310), (520, 15355), (522, 15388), (533, 15499), (539, 15568), (545, 15631), (547, 15649),
(559, 15799),